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# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 1, 1878.

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

2:12 A. M. HONOLULU mean time.
8:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:38 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.42 | 772.6 | 63.0 | 17.2 | ..... | NW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Dr. Ollive. |
| Nemours | ..... | ..... | 30.40 | 772.1 | 65.8 | 18.8 | 60 | NNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Michel. |
| Algiers | ..... | ..... | 30.32 | 770.0 | 71.2 | 21.8 | 32 | WSW | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Towlliere. |
| La Calle | ..... | ..... | 30.35 | 770.8 | 61.3 | 16.3 | 83 | NW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Boulangeot. |
| Tunis | ..... | ..... | 30.35 | 770.8 | 63.0 | 17.2 | 67 | NW | ..... | ..... | 8 | ..... | 7 | ..... | ..... | 0 | 0 | Very cloudy | Jacques. |
| Sfax | ..... | ..... | 30.39 | 772.0 | 62.6 | 17.0 | ..... | SW | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 0 | 0 | Covered | Gau. |
| Saida | ..... | ..... | 30.43 | 772.8 | 71.1 | 21.7 | 59 | SSE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Herbin. |
| Tebessa | ..... | ..... | 30.44 | 773.2 | ..... | ..... | ..... | NW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Bourgeois. |
| Geriville | ..... | ..... | 30.49 | 774.4 | 54.3 | 12.4 | 87 | NW | ..... | ..... | 6 | ..... | 8 | ..... | ..... | 0 | 0 | Pretty fair | Lemaillot. |
| Laghouat | ..... | ..... | 30.47 | 773.8 | 69.1 | 20.6 | 29 | NE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Guyot. |
| Biskra | ..... | ..... | 30.41 | 772.5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

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

### AUSTRIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.55 | 750.5 | 30.10 | 764.6 | 50.9 | 10.5 | 63 | SW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stoar |
| Cracow, I. R. Observatory | 29.18 | 741.1 | 29.96 | 760.9 | 44.1 | 6.7 | 99 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.157 | 4.0 | ..... | Dr. Wierzbiski. |
| Eperies | 29.19 | 741.3 | 30.11 | 764.7 | 33.8 | 1.0 | 92 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.106 | 2.70 | ..... | Julius Mikolik. |
| Gratz | 28.78 | 730.9 | 30.02 | 762.6 | 55.4 | 13.0 | 61 | S | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 0.018 | 0.45 | ..... | Andreas Rospini. |
| Hermannstadt | 28.71 | 729.1 | 30.16 | 766.1 | 43.9 | 6.6 | 63 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.72 | 729.4 | 30.07 | 763.7 | 50.4 | 10.2 | 82 | WNW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.717 | 18.2 | ..... | Prof. C. Wagner |
| Lemberg | 29.03 | 737.3 | 30.06 | 763.5 | 33.4 | 0.8 | 82 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Dr. T. Stanecki. |
| Pola | 30.09 | 764.3 | 30.21 | 767.2 | 66.5 | 18.6 | 75 | SSE | ..... | ..... | 1 | ..... | 0cks | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.76 | 755.9 | 30.25 | 768.3 | 35.6 | 2.0 | 82 | SE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.189 | 4.8 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.88 | 757.7 | 30.11 | 764.9 | 51.1 | 10.6 | 83 | SE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.043 | 1.10 | ..... | Karl Stancel. |
| Trieste | 30.13 | 765.3 | 30.23 | 767.9 | 49.1 | 9.5 | 88 | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Foggy | P. Busin. |
| Vienna | 29.31 | 744.4 | 30.03 | 762.7 | 53.4 | 11.9 | 84 | W | ..... | ..... | 5 | ..... | 9 | ..... | ..... | 0.374 | 9.5 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 348.5 meters, or 1,128.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.50 | 723.9 | 30.02 | 762.5 | 49.6 | 9.8 | 99 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.579 | 14.7 | Raining | Prof. M. Passau. |
| Brussels | 29.67 | 753.5 | 29.86 | 758.5 | 54.5 | 12.5 | 94 | WSW | ..... | ..... | 4 | ..... | 10 | ..... | WSW | 0.346 | 8.8 | Raining | Royal Observatory. |
| Furnes | 29.81 | 757.1 | 29.83 | 757.7 | 54.7 | 12.6 | 89 | SW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0.232 | 5.9 | ..... | M. E. de Cae. |
| Maeseyck | 29.74 | 755.3 | 29.86 | 758.5 | 54.7 | 12.6 | 93 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.248 | 6.3 | Raining | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

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

M06.1
U58s

## BRITISH SERIES.

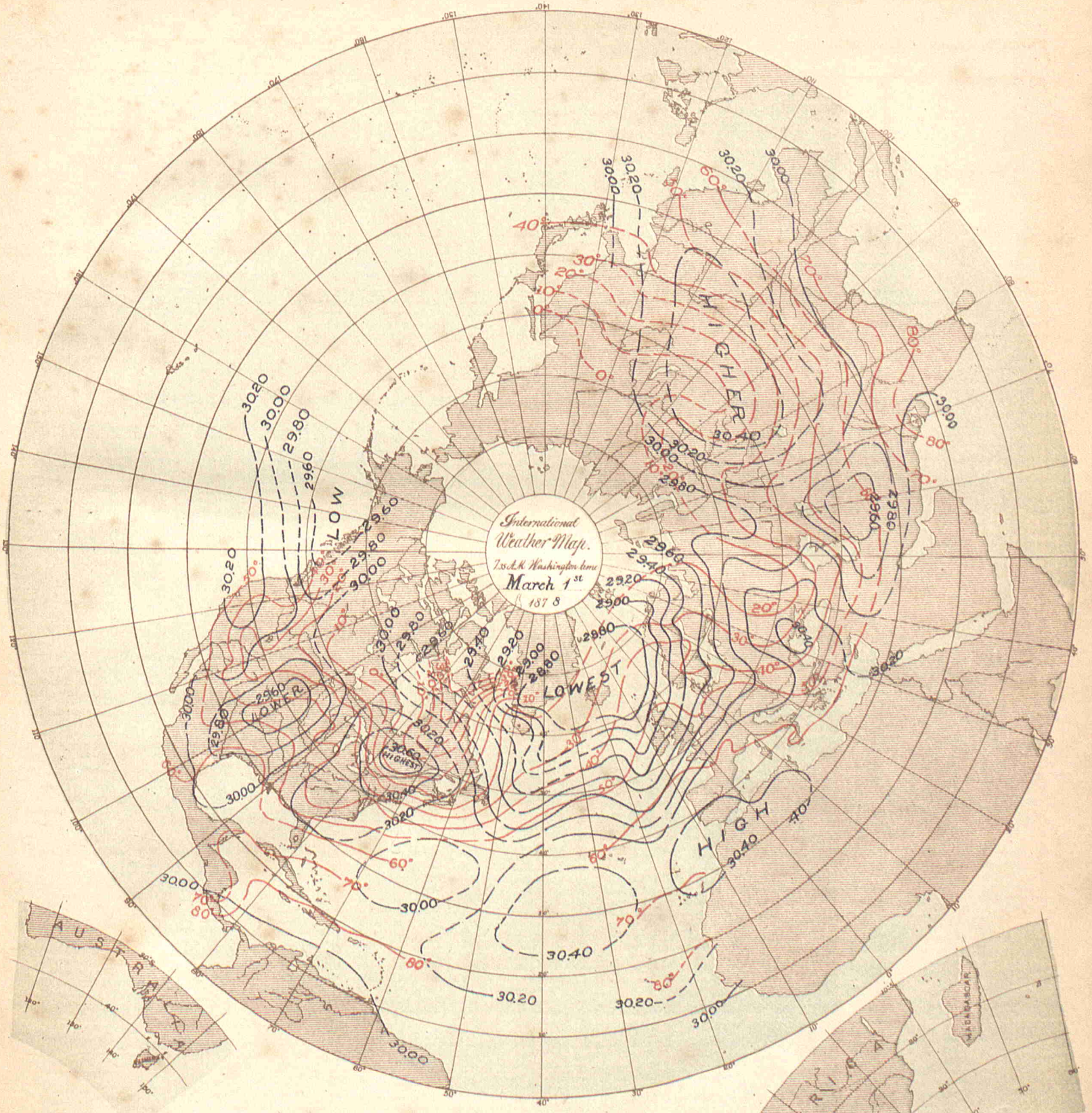
Furnished by the Superintendent [illegible] Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer: Corrected for instrum'tal error | | Barometer: Reduced to Sea-level | | Temperature of the Air | | Relative Humidity | Wind: Direction. | Wind: Velocity | | Wind: Force | Clouds: Amount. Up'er | Clouds: Amount. Low'r | Clouds: Direction. Upper. | Clouds: Direction. Lower. | Rain-fall or melted snow in the past 24 hours. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inches. | Millimeters. | Inches. | Millimeters | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | Inches. | Millimeters. | | |
| Aberdeen | 29.17 | 740.9 | 29.27 | 743.4 | 46.6 | 8.1 | ..... | SSE | 9 | 4.0 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Misty | W. Boswell. |
| Ardrossan | 29.28 | 743.7 | 29.30 | 744.2 | 48 | 8.9 | ..... | SW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Raining | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.36 | 745.7 | 50.9 | 10.5 | ..... | SW | 3 | 1.3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | S. Call, for Dr. Robinson. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.42 | 747.3 | 54.8 | 12.7 | ..... | SW | 44 | 19.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Hartnup. |
| Birr Castle, (Parsonstown) | 29.21 | 741.9 | 29.41 | 747.0 | 54.8 | 12.7 | ..... | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | J. Dreyer. |
| Bradford, Yorkshire | 29.09 | 738.9 | 29.48 | 748.8 | 55.7 | 13.2 | ..... | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | J. McLandsborough. |
| Bridgetown, (Barbados) | 30.08 | 764.0 | 30.11 | 764.8 | 83.0 | 28.3 | ..... | NE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0.20 | 5.1 | D. clouds | Pvt. G. W. Roberts, A. H. Todd. [H. C. |
| Cambridge, Observatory | ..... | ..... | 29.62 | 752.3 | 59.0 | 15.0 | ..... | SW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | |
| Cardington | ..... | ..... | 29.65 | 753.1 | 58.0 | 14.4 | ..... | SW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John McLaren. |
| Chatham, School M. E. | 29.61 | 752.1 | 29.74 | 755.4 | 55.2 | 12.9 | ..... | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.57 | 725.7 | 30.07 | 763.8 | 44.4 | 6.9 | ..... | S | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Rain and fog | Alexander Watt. |
| Donaghadee | 29.40 | 746.7 | 29.48 | 747.5 | 51 | 10.6 | ..... | WSW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | J. Mac Gowan. |
| Dover | 29.76 | 755.9 | 29.79 | 756.7 | 49 | 9.4 | ..... | WSW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Rain and fog | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.46 | 748.3 | 55.7 | 13.2 | ..... | SW | 4.8 | 2.1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Thomas Mackereth. |
| Falmouth, Observatory | 29.54 | 750.3 | 29.77 | 756.1 | 53.1 | 11.7 | ..... | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Rain and fog | The Staff. |
| Fort Napier, (Natal) | 27.82 | 706.6 | 30.03 | 762.7 | 83.0 | 28.3 | ..... | E | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.70 | 754.4 | 29.92 | 760.0 | 88.0 | 31.1 | ..... | W | ..... | ..... | 0 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's College | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Gibraltar, (Mediterranean) | 30.33 | 770.4 | 30.39 | 771.9 | 63.0 | 17.2 | ..... | E | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. A. H. Curtis. |
| Glasgow, Observatory | 29.09 | 738.9 | 29 30 | 744.2 | 50.0 | 10.0 | ..... | SSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Corpl. C. Aitken, A. H. C. |
| Great Yarmouth | 29.60 | 751.8 | 29.61 | 752.1 | 56 | 13.3 | ..... | WSW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | D. G. Maclean. |
| Greenwich, Royal Obs'y | 29.54 | 750.3 | 29.71 | 754.6 | 55.8 | 13.2 | ..... | SW | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | G. T. Watson. |
| Guernsey | 29.69 | 754.1 | 29.91 | 759.7 | 53.5 | 11.9 | ..... | WSW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | The Staff, for G. B. Airy. |
| Helston | ..... | ..... | 29.81 | 757.2 | 54 | 12.2 | ..... | SW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Dr. S. E. Hoskins, F.R.S. |
| Holyhead | 29.38 | 746.2 | 29.44 | 747.8 | 50 | 10.0 | ..... | SW | ..... | ..... | 4 | ..... | 10n | ..... | ..... | ..... | ..... | Raining | M. P. Moyle. |
| Jersey | 29.68 | 753.9 | 29.97 | 761.2 | 53.2 | 11.8 | ..... | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | John Tilston. |
| Kew, Observatory | ..... | ..... | 29.72 | 754.9 | 56.0 | 13.3 | ..... | SW | 27 | 12.1 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | Overcast | J. Fisher. |
| Kingstown | 29.34 | 745.2 | 29.88 | 746.2 | 60 | 15.6 | ..... | W | ..... | ..... | 6 | ..... | 10kd | ..... | ..... | ..... | ..... | Raining | The Staff. |
| Leicester, Museum | ..... | ..... | 29.54 | 750.3 | 57.8 | 14.3 | ..... | SW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | George Mitchell. |
| Malta, (Mediterranean) | 30.27 | 768.8 | 30.35 | 770.9 | 60.0 | 15.6 | ..... | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Wm. J. Harrison, F.G.S. |
| Nairn | 29.11 | 739.4 | 29.20 | 741.7 | 51 | 10.6 | ..... | W | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | Sgt. Fred. Travis, A. H. |
| Nassau, (Bahamas) | ..... | ..... | 30.12 | 765.0 | 69.8 | 21.0 | ..... | NE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ¾ clouded | W. D. Penny. [C. |
| Nottingham, Observatory | 29.33 | 745.0 | 29.52 | 749.8 | 58.4 | 14.7 | ..... | SSW | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Oscott, St. Mary's College | 29.03 | 737.3 | 29.54 | 750.3 | 55.8 | 13.2 | ..... | SW | ..... | ..... | 6 | ..... | 10d | ..... | SW | 0.095 | 2.41 | Raining | E. J. Lowe, F. R. S. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.67 | 753.6 | 58 | 14.4 | ..... | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | Rev. Stephen Whitty. |
| Plymouth | 29.71 | 754.6 | 29.78 | 756.4 | 52.0 | 11.1 | ..... | WSW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | Mr. Lucas. |
| Roche's Point | 29.48 | 748.8 | 29.52 | 749.8 | 54 | 12.2 | ..... | WSW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Threatening | John Merrifield. |
| Saint Ann's Head | 29.43 | 747.5 | 29.59 | 751.6 | 51 | 10.6 | ..... | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | W. Kennedy. |
| Sandwick Manse, (Orkneys.) | ..... | ..... | 29.15 | 740.4 | 48.5 | 9.2 | ..... | SW | 12 | 5.4 | 7 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | John C. Walker. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 30.32 | 770.1 | 45.0 | 7.2 | ..... | N | ..... | ..... | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty | Rev. C. Clouston, LL. D. |
| Sheffield | 29.19 | 741.4 | 29.47 | 748.5 | 58.7 | 14.8 | ..... | SW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | Sergt. W. H. Lyne. |
| Silloth Rectory | 29.27 | 743.4 | 29.30 | 744.2 | 50.6 | 10.3 | 94 | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.32 | 8.1 | Showery | W. F. Cooper. |
| Stonyhurst, Observatory | 29.04 | 737.6 | 29.44 | 747.8 | 52.0 | 11.1 | ..... | SW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0.280 | 7.11 | Raining | Rev. F. Redford, M. A. |
| Stornorway, Lewis C. (Hebr.) | ..... | ..... | 29.12 | 739.6 | 50 | 10.0 | ..... | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Misty | Rev. S. J. Perry. |
| Stratfield Turgiss | 29.52 | 749.8 | 29.74 | 755.4 | 55.8 | 13.2 | ..... | SW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded | John Smith. |
| Thurso | ..... | ..... | 29.15 | 740.4 | 51 | 10.6 | ..... | SSW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Rev. O. H. Griffith, F.M.S. |
| Truro, Royal Institution | ..... | ..... | 29.79 | 756.7 | 54 | 12.2 | ..... | SW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy | John Trotter. |
| Valencia, Observatory | ..... | ..... | 30.44? | 773.2? | 54.6 | 12.6 | ..... | SW | 37 | 16.5 | 7 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | W. Newcombe. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Ualf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | The Staff. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.02 | 762.5 | 74.0 | 23.3 | 78 | SE | ..... | ..... | 2 | ..... | 4k | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | Francis Abbott, F.R.A.S. |
| Mauritius, Observatory | 29.77 | 756.1 | 29.96 | 760.9 | 82.8 | 28.2 | 65 | ESE | 20.0 | 8.9 | ..... | 0 | 4 | ..... | ESE | 0.18 | 3.8 | Fine; squally | Andrew Gibb. |
| Melbourne, Observatory | 30.10 | 764.5 | 30.19 | 766.8 | 73.0 | 22.8 | 63 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine | C. Meldrum. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. L. J. Ellery. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

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

| MARINE SERIES. VESSELS. | Barometer: Corrected for instrum'tal error | | Barometer: Reduced to Sea-level | | Temperature of the Air | | Relative Humidity | Wind: Direction. | Wind: Velocity | | Wind: Force | Clouds: Amount. Up'er | Clouds: Amount. Low'r | Clouds: Direction. Upper. | Clouds: Direction. Lower. | Sea or swell: Height scale 0–9 | Sea or swell: Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inches. | Millimeters. | Inches. | Millimeters | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| S. S. Algeria, N. 47° 15′ W. 38° 53′ | ..... | ..... | ..... | 29.78 | 756.4 | 50.0 | 10.0 | ..... | W | ..... | ..... | 5 | ..... | 9 | ..... | ..... | 15* | W | Raining | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. D. F. McKechnie. |
| S. S. Hibernia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon, N. 16° 58′, W. 49° 10′ | ..... | ..... | ..... | 30.22 | 767.6 | 80 | 26.7 | ..... | E | ..... | ..... | 5 | ..... | 3 | ..... | ..... | 2 | E | D. clouds | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. C. Prehn. |
| S. S. Peruvian, N. 52° 0′, W. 29° 30′ | ..... | ..... | ..... | 29.57 | 751.1 | 49 | 9.4 | ..... | W | ..... | ..... | 5 | ..... | 5 | ..... | ..... | *5 | W | Drizzling | Capt. W. H. Smith, R. N. [R. |
| Royal Alice | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Alex Simpson. |
| Yorkshire, N. 47° 20′ W. 18° 25′ | ..... | ..... | ..... | 29.67 | 753.6 | 56 | 13.3 | ..... | W | ..... | ..... | 5 | ..... | 9 | ..... | ..... | 6 | WSW | Raining | |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.




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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Upper. 0—1 | Clouds. Amount. Low'r. 0—1 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.27 | 667.2 | | | 67.6 | 19.8 | 74 | E | | | 4 | pc | 1sd | | E | 0 | 0 | | Federico Maison. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

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

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.58 | 751.2 | 29.62 | 752.4 | 43.0 | 6.1 | 97 | Calm | | | 0 | | 10 | | | | | Foggy |
| Faröe | 29.59 | 751.5 | 29.61 | 752.0 | 41.9 | 5.5 | 97 | SW | | | 4 | | 10 | | | | | Foggy |
| Godthaab, (Greenland) | 28.75 | 730.2 | 28.79 | 731.3 | 25.0 | — 3.9 | 96 | SW | | | 2 | | 10 | | | | | Snowing |
| Stykkisholm, (Iceland) | 28.73 | 729.7 | 28.77 | 730.8 | 22.8 | — 5.1 | 96 | NE | | | 9 | | 8 | | | | | Snowing |
| Thorshavn, (Faröe) | 28.75 | 730.2 | 28.78 | 731.1 | 40.8 | 8.2 | 83 | WSW | | | 5 | | 4 | | | | | Raining |
| Vestervig | 29.85 | 745.6 | 29.52 | 749.9 | 43.5 | 6.4 | 100 | SW | | | 4 | | 8 | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.54 | 750.3 | 30.09 | 764.3 | 51.8 | 11 | 95 | NE | | | 4 | | 10 | | NE | 0.08 | 2. | Covered | Collignon, Director. |
| Amiens, Normal School | 29.83 | 757.6 | 29.94 | 760.4 | 57.9 | 14.4 | 84 | SW | | | 3 | | 10 | | | 0.189 | 4.8 | Covered | Bonvarne, Director. |
| Avignon, Normal School | 30.17 | 766.4 | 30.25 | 768.4 | 60.4 | 20.8 | 42 | N | | | 1 | | | | | | | Light clouds | Mr. Giraud, Director |
| Bar-sur-Seine | 29.58 | 751.2 | 30.14 | 765.6 | 55.6 | 13.1 | 87 | W | | | 6 | | 10 | | W | 0.449 | 11.4 | Covered | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 50.7 | 13.7 | 80 | WSW | | | 6 | | 10 | | W | 0.148 | 3.76 | Covered | Normal School. |
| Besançon | 29.35 | 745.6 | 30.21 | 767.3 | 52.9 | 11.6 | 86 | SW | | | 6 | | 10 | | | 0.610 | 15.5 | Covered | Normal School. |
| Bourg-en-Bresse | 29.48 | 747.6 | 30.37 | 771.3 | 57.0 | 13.9 | 80 | S | | | 2 | | ck | | W | 0.75 | 19. | | Normal School. |
| Bourges, Normal School | 29.80 | 756.8 | 30.39 | 772.0 | 52.3 | 11.3 | 71 | SE | | | 2 | | 10 | | NE | 0 | 0 | Covered | A. Wagner, Director. |
| Brest, Naval Observatory | 29.71 | 754.6 | 29.93 | 760.2 | 53.1 | 11.7 | 90 | SW | | | 6 | | 10 | | SW | 0.138 | 3.50 | Foggy | The Staff. |
| Carcassonne, Normal School | 29.97 | 761.2 | 30.39 | 771.8 | 53.6 | 12 | 86 | N | | | 4 | | 0 | | | 0 | 0 | Clear | Vateau, Director. |
| Caen | 29.93 | 760.2 | 29.97 | 761.1 | 58.8 | 14.6 | 84 | SSW | | | 6 | | 5 | | SSW | 0.035 | 0.9 | Cloudy | Normal School. |
| Chartres, Normal School | 29.55 | 750.5 | 30.11 | 764.9 | 54.3 | 12.4 | 93 | SW | | | 6 | | 9 | | W | 0.146 | 3.7 | | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.74 | 755.4 | 30.06 | 763.5 | 54.9 | 12.7 | 86 | SW | | | 4 | | 10km | | SW | 0.252 | 6.4 | Covered | C. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.91 | 734.3 | 30.26 | 768.6 | 60.4 | 15.8 | 57 | SW | | | 3 | | 8 | | SW | 0.094 | 2.4 | Very cloudy | Alluard, Director. |
| Commercy, Normal School | 29.26 | 743.2 | 30.15 | 765.8 | 51.4 | 10.8 | 86 | WSW | | | 6 | | 10 | | WSW | 0.32 | 8. | Covered | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.13 | 739.8 | 30.27 | 768.8 | 65.3 | 18.5 | 49 | NW | | | 4 | | 2 | | NW | 0 | 0 | ¼ Covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 30.03 | 762.8 | 30.25 | 768.3 | 55.0 | 12.8 | 88 | NW | | | 6 | | 10 | | | 0.039 | 1.0 | Covered | Mouillot, Director. |
| Le Mans, Normal School | 29.82 | 757.4 | 30.13 | 765.3 | 54.0 | 12.2 | 93 | SW | | | 6 | | 8 | | SW | 0.030 | 0.75 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.31 | 744.4 | 30.23 | 767.8 | 56.1 | 13.4 | 82 | S | | | 6 | | 10 | | E | 0.862 | 22.40 | Covered | Voudez, Director. |
| Lorient, Naval Observatory | 30.02 | 762.5 | 30.12 | 765.0 | 55.4 | 13.0 | 88 | SW | | | 4 | | 10 | | | 0.248 | 6.3 | Covered | T. Carré, Director. |
| Mâcon, Normal School | 29.60 | 751.8 | 30.26 | 768.5 | 54.0 | 12.2 | 86 | Calm | | | 0 | | 10 | | | 0.728 | 18.5 | Covered | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | 29.11 | 739.4 | 30.17 | 766.3 | 51.3 | 10.7 | 86 | SW | | | 4 | | 10 | | SE | 0 | 0 | Covered | Normal School. |
| Nismes, Normal School | 30.04 | 763.1 | 30.25 | 768.3 | 71 6 | 22 | 42 | NW | | | 2 | | 2 | | N | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Orleans, Normal School | 29.75 | 755.6 | 30.13 | 765.4 | 53.6 | 12 | 93 | NE | | | 6 | | 8 | | S | 0.16 | 4. | Very cloudy | Bernard, Director. |
| Paris, Observatory | 29.83 | 757.6 | 30.07 | 763.7 | 56.7 | 13.7 | 81 | SW | | | 4 | | 10 | | SW | 0.150 | 3.82 | Covered | National Observatory. |
| Privas | 29.28 | 743.6 | 30.32 | 770.0 | 54.5 | 12.5 | 60 | NW | | | 1 | | 5 | | NW | 0 | 0 | Cloudy | Normal School |
| Rochefort, Naval Obs'y | 30.28 | 769.2 | 30.32 | 770.0 | 56.8 | 13.8 | 86 | SW | | | 5 | | 10 | | SW | 0 | 0 | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.93 | 760.1 | 30.01 | 762.3 | 58.6 | 14.8 | 74 | SSW | | | 6 | | 10 | | SW | 0.142 | 3.6 | Covered | F. Lucard, Director. |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | M. H. Hercouet. |
| Tarbes, Normal School | 29.30 | 744.2 | 30.37 | 771.3 | 68.0 | 20 | 47 | N | | | 2 | | 0 | | | 0 | 0 | Clear | T. Hugues, Director. |
| Villefranche | 29.57 | 751.0 | 30.29 | 769.3 | 62.6 | 17 | 74 | S | | | 2 | | 10 | | S | 0.307 | 7.8 | Covered | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.93 | 760.1 | 29.95 | 760.8 | 81.3 | 27.4 | | | | | | | | | | 0 | 0 | | L'Abbé Marchési. |
| Lyons | | | 30.30 | 769.6 | 62.2 | 16.8 | | | | | | | 10 | | | 0 | 0 | Covered | M. Jeys. |
| Marseilles, Observatory | | | 30.20 | 767.0 | 67.5 | 19.7 | 51 | WNW | | | 3 | | 3 | | | 0 | 0 | Cloudy | The Staff. |
| Mont-Louis | | | | | | | | | | | | | | | | | | | Mr. Falguère. |
| Nice | 30.12 | 765.1 | 30.20 | 767.1 | 61.7 | 16.5 | 69 | E | | | 6 | | 5 | | E | 0 | 0 | Cloudy | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.78 | 756.3 | 30.05 | 763.3 | 55.9 | 13.3 | 83 | SW | | | 6 | | 10 | | SW | 0.091 | 2.3 | | Marié Davy, Director. |
| Perpignan | | | | | | | | | | | | | | | | | | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.80 | 579.1 | | | 47.5 | 8.6 | | SW | | | 1 | | 4 | | | 0 | 0 | Fair | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.91 | 759.6 | 30.07 | 763.8 | 56.3 | 13.5 | 81 | SW | | | 4 | | 10 | | | 0.043 | 1.1 | Covered | E. Renou. |
| Toulouse, Observatory | 29.63 | 752.6 | 30.36 | 771.2 | 60.4 | 15.8 | 68 | SE | | | 1 | | 4 | | | 0 | 0 | | The Staff. |
| Tours | 29.98 | 761.5 | 30.18 | 766.5 | 55.4 | 13.0 | 86 | WSW | | | 3 | | 10 | | WSW | 0.004 | 0.1 | | C. Marquet. |
| Versailles, (near Paris) | | | 30.07 | 763.8 | 56.1 | 13.4 | 84 | W | | | 3 | | 10 | | | 0.104 | 2.65 | Covered | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.37 | 771.4 | 30.39 | 772.0 | 39.4 | 4.1 | 98 | Calm | 0 | 0 | | | 10km | | | 0 | 0 | Covered | Marc Dechevrens, S. J |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 29.66 | 753.4 | 29.83 | 757.7 | 55.0 | 12.8 | 66 | SW | | | 2 | | 6 | | | | | | Prof. Arndt. |
| Breslau | 29.36 | 745.8 | 29.89 | 759.2 | 51.1 | 10.6 | 74 | WNW | | | 5 | | 9 | | | 0.075 | 1.91 | | Royal University Obs'y |
| Carlsruhe | 29.61 | 752.2 | 30.04 | 763.1 | 53.2 | 11.8 | 87 | SW | | | 4 | | 10 | | | 0.069 | 1.76 | | Albert Senz. |
| Cassel | 29.36 | 745.8 | 29.97 | 761.3 | 53.1 | 11.7 | 82 | SW | | | 3 | | 10 | SW | | 0.079 | 2.0 | | Dr. H. Möhl. |
| Crefeld | 29.67 | 753.7 | 29.84 | 757.8 | 55.4 | 13.0 | 90 | SW | | | 5 | | 10 | | | 0.150 | 3.82 | | Director Lose. |
| Emden | 29.69 | 754.1 | 29.72 | 755.0 | 50.4 | 10.2 | 97 | S | | | 2 | | 10 | | | 0.28 | 7. | Raining | Prof. Prestel. |
| Frankfort on the Main | 29.58 | 751.4 | 29.95 | 760.7 | 55.2 | 12.9 | 85 | SW | | | 2 | | 10 | | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 28.74 | 730.1 | 30.20 | 767.1 | 50.0 | 10.0 | 87 | WSW | | | 5 | | 10 | W | | 0.244 | 6.2 | Raining | M. Wilhelm. |
| Hamburg | 29.69 | 754.0 | 29.76 | 755.8 | 49.6 | 9.8 | 92 | WSW | | | 3 | | 10ks | | | 0.031 | 0.8 | Raining | Captain F. Hegemann. |
| Kiel | 29.68 | 753.9 | 29.70 | 754.3 | 48.2 | 9.0 | 95 | SW | | | 3 | | 10 | | | 0.248 | 6.3 | Cloudy | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.74 | 755.4 | 29.82 | 757.4 | 34.9 | 1.6 | 91 | SE | | | | | | | | 0.104 | 2.64 | | Prof. E. Luther. |
| Köslin | | | 29.69 | 754.0 | 45.7 | 7.6 | | SW | | | 2 | | 5 | | | 0.049 | 1.25 | Cloudy | H. Müller. |
| Leipsic, Observatory | 29.52 | 749.8 | 29.94 | 760.4 | 57 2 | 14.0 | 68 | WSW | | | 4 | | 9 | W | | 0 | 0 | | Prof. Bruhns. |
| Memel, Naval School | 29.80 | 756.8 | 29.84 | 758.0 | 33.8 | 1.0 | 89 | SE | | | 4 | | 10n | | | 0.346 | 8.8 | | Reinbrech von Skalweit. |
| Neufahrwasser | 29.76 | 755.9 | 29.78 | 756.3 | 37.8 | 3.2 | 93 | S | | | 3 | | 10 | | | | | Light rain | A. Lothes. |
| Posen | 29.56 | 750.8 | 29.86 | 758.4 | 46.4 | 8.0 | 98 | W | | | 5 | | 10 | | | 0.087 | 2.2 | Foggy | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.66 | 750.9 | 30.12 | 765.0 | 54.3 | 12.4 | 85 | S | | | 4 | | 10 | SW | | 0.133 | 3.38 | Covered | Dr. Schur. |
| Stuttgart | 29.11 | 739.5 | 30.06 | 763.4 | 54.5 | 12.5 | 71 | W | | | 5 | | 10 | | | 0.336 | 8.52 | | Prof. Schoder. |
| Treves, (Trier) | 29.38 | 746.2 | 29.90 | 759.4 | 54.1 | 12.3 | 90 | SW | | | 7 | | 10 | | | 0.043 | 1.1 | Light rain | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.54 | 725.0 | 30.06 | 763.4 | 51.4 | 10.8 | 83 | W | 11 | 5 | | | 10 | | W | 0.122 | 3.11 | Foggy | Dr. Von Bebber. |
| Wustrow, Naval School | 29.74 | 755.4 | 29.78 | 756.4 | 42.1 | 5.6 | 92 | WSW | | | 4 | | 5 | | | 0.031 | 0.8 | Raining | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | 0.161 | 3.84 | Fair | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.87 | 758.7 | 30.26 | 768.7 | 58.3 | 14.6 | | NE | | | 2.0 | | | | | | | ⅜ Clear | Dr. J. F. J. Schmidt. |

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

## INDIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.98 | 761.4 | 30.03 | 762.7 | 73.2 | 22.9 | 40 | WSW | 23.0? | 10.3? | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.53 | 750.0 | 30.01 | 762.2 | 81.0 | 27.2 | 29 | Calm | | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.86 | 758.5 | 29.90 | 759.4 | 80.3 | 26.8 | 60 | NW | 13.0 | 5.8 | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.85 | 707.4 | 29.83 | 757.6 | 86.3 | 30.2 | 33 | N | | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 29.21 | 741.8 | 29.98 | 761.4 | 64.4 | 18.0 | 44 | Calm | 3.6 | 1.6 | | 0 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.38 | 695.3 | 29.88 | 759.0 | 83.7 | 28.7 | 34 | W | 8.0 | 3.6 | | 0 | | | 0 | 0 | Blue sky | |
| Bangalore | | | | | | | | | | | | | | | | 0 | 0 | Misty | |
| Roorkee | 29.06 | 738.2 | 30.00 | 761.9 | 63.8 | 17.7 | 53 | NW | 5.7 | 2.6 | | | | | | | | | |
| Agra | 29.39 | 746.4 | 29.97 | 761.2 | 70.7 | 21.5 | 22 | N | | | | | | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | 0 | 0 | | |
| Nagpur | 28.90 | 734.1 | 29.96 | 760.8 | 76.6 | 24.8 | 31 | Calm | 4.8 | 2.2 | | | | | | | | | |
| Madras | | | | | | | | | | | | | | | | 0 | 0 | Blue sky | |
| Lucknow | 29.56 | 750.9 | 29.95 | 760.7 | 65.4 | 18.6 | 50 | W | 5.0 | 2.2 | | | | | | | | | |
| Allahabad | 29.64 | 752.7 | 29.95 | 760.8 | 67.6 | 19.8 | 33 | WSW | 5.6 | 2.5 | | 0 | | | | 0 | 0 | Blue sky | |
| Patna | 29.74 | 755.5 | 29.93 | 760.3 | 68.4 | 20.2 | 30 | W | 4.4 | 2.0 | | 0 | | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.87 | 707.8 | 29.94 | 760.5 | 64.6 | 18.1 | 17 | W | 11.7 | 5.2 | | 0 | | | | 0 | 0 | Misty | |
| Cuttack | 29.82 | 757.4 | 29.90 | 759.6 | 76.0 | 24.4 | 64 | E | 2.3 | 1.0 | | 0 | | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.90 | 759.6 | 29.93 | 760.1 | 71.7 | 22.1 | 43 | N | 3.0 | 1.3 | | 0 | | | | 0 | 0 | Blue sky | |
| Goalpara | 29.44 | 747.8 | 29.84 | 758.0 | 69.6 | 20.9 | 33 | SW | 1.4 | 0.6 | | 0 | | | | 0 | 0 | Blue sky | |
| Chittagong | 29.83 | 757.8 | 29.93 | 760.2 | 70.8 | 21.6 | 85 | NNE | 5.8 | 2.6 | | 3 | | W | W | 0 | 0 | D. clouds | |
| Sibsagar | 29.56 | 750.8 | 29.90 | 759.6 | 69.8 | 21.0 | 74 | NE | 4.7 | 2.1 | | 10 | | W | W | 0 | 0 | Gloomy | |
| Rangoon | | | | | | | | | | | | 10 | | W | W | 0 | 0 | D. clouds | |
| Jubbulpore | 28.59 | 726.2 | 29.98 | 761.6 | 72.6 | 22.2 | 21 | NW | 3.9 | 1.7 | | | | | | | | | |
| | | | | | | | | | | | | | | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instru'tal error and temperature. Inches. | Barometer. Corrected for instru'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.77 | 756.1 | 30.18 | 766.6 | 52.7 | 11.5 | 62 | SW | 1.3 | 0.6 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 30.08 | 763.9 | 30.19 | 766.7 | 52.2 | 11.2 | 71 | NE | 4.9 | 2.2 | ..... | ..... | 10 | W | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.98 | 761.5 | 30.17 | 766.4 | 53.4 | 11.9 | 66 | ENE | 1.3 | 0.6 | ..... | ..... | 6 | W | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.52 | 732.1 | 30.14 | 765.6 | 56.5 | 13.6 | 60 | SW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.27 | 743.5 | 30.19 | 766.7 | 55.6 | 13.1 | 63 | SSE | 2.5 | 1.1 | ..... | ..... | 8 | NE | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 28.25 | 717.6 | 30.16 | 766.1 | 55.9 | 13.3 | 66 | NW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.99 | 761.7 | 30.21 | 767.4 | 57.6 | 14.2 | 76 | E | ..... | ..... | 4 | ..... | 7 | NE | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 30.07 | 763.7 | 30.24 | 768.1 | 57.6 | 14.2 | 61 | SE | 4.9 | 2.2 | ..... | ..... | 10 | SE | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.93 | 760.2 | 30.25 | 768.3 | 59.9 | 15.5 | 58 | NE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.97 | 761.2 | 30.23 | 767.8 | 59.9 | 15.5 | 68 | W | ..... | ..... | 2 | ..... | 9 | SW | ..... | 0 | 0 | ..... | Cav. F Meucci. |
| Leghorn | 30.16 | 766.0 | 30.24 | 768.2 | 56.5 | 13.6 | 75 | SW | 1.3 | 0.6 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 30.17 | 766.4 | 30.23 | 767.7 | 50.7 | 10.4 | 72 | N | 19.2 | 8.6 | ..... | ..... | 7 | N | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.65 | 727.8 | 30.22 | 767.5 | 55.9 | 13.3 | 58 | SW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 30.14 | 765.5 | 30.25 | 768.4 | 59.0 | 15.0 | 71 | NNW | ..... | ..... | 2 | ..... | 4 | SE | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 30.09 | 764.2 | 30.26 | 768.7 | 59.0 | 15.0 | 64 | N | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U. | 30.07 | 763.7 | 30.27 | 768.9 | 63.0 | 17.2 | 57 | SSE | ..... | ..... | 1 | ..... | 4 | NE | ..... | 0.020 | 0.5 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 57.9 | 14.4 | 55 | NNE | 12.5 | 5.6 | ..... | ..... | 2 | N | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 30.03 | 762.7 | 30.22 | 767.6 | 63.5 | 17.5 | 66 | NW | ..... | ..... | 4 | ..... | 8 | W | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.36 | 745.7 | 30.25 | 768.4 | 60.3 | 15.7 | 70 | NW | 11.2 | 5.0 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.96 | 761.0 | 30.22 | 767.5 | 57.2 | 14 0 | 73 | ENE | 3.1 | 1.4 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 30.13 | 765.3 | 30.21 | 767.2 | 60.1 | 15.6 | 65 | W | ..... | ..... | 2 | ..... | 8 | SW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.72 | 755.0 | 30.28 | 769.1 | 59.5 | 15.3 | 52 | SSE | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |

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

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 29.84 | 757.9 | 29.91 | 759.7 | 37.4 | 3.0 | 57 | N | 7.7 | 3.4 | ..... | ..... | 8s | ..... | ..... | 0 | 0 | Cloudy..... | The Observatory. |
| Tokei (Yeddo) University | 29.79 | 756.7 | 29.90 | 759.3 | 37.2 | 2.9 | 52 | NNW | 7 | 3.1 | ..... | ..... | 8ks | ..... | W | 0 | 0 | Cloudy..... | Prof. P. V. Veeder |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | 25.10 | 637.6 | 29.89 | 759.2 | 64.4 | 18.0 | 31 | N | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear... | L. Castillo, A. E. |
| Guadalajara | 25.12 | 637.9 | 30.19 | 766.7 | 45.5 | 7.5 | 53 | SE | 0.9 | 0.4 | ..... | 0 | 2 | ..... | SW | 0 | 0 | Clear..... | Prof. L. Perez. |
| Guanajuato | 23.71 | 602.4 | 29.99 | 761.8 | 57.7 | 14.3 | 48 | Calm | 0 | 0 | ..... | 0 | 1 | ..... | ..... | 0 | 0 | Clear..... | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 55.0 | 12.8 | 45 | NNW | 0.9 | 0.4 | ..... | 5c | 1s | SW | SW | 0 | 0 | ¼ cloudy.... | Prof. M. Leal. |
| Mexico | 23.11 | 587.1 | 30.28 | 769.0 | 47.8 | 8.8 | 59 | Calm | 0 | 0 | ..... | 2c | 0 | ..... | ..... | 0 | 0 | Fine..... | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 49.6 | 9.8 | 51 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear... | M. V. de Leon, M. E. |
| Puebla | 23.33 | 592.6 | 30.07 | 763.8 | 46.0 | 7.8 | 68 | ENE | 2.2 | 1.0 | ..... | 8ck | 2s | S | ..... | 0 | 0 | Covered..... | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 29.93 | 760.2 | 29.94 | 760.5 | 64.4 | 18.0 | 86 | S | 0.9 | 0.4 | ..... | 3cs | 0 | ..... | ..... | Inap. | Inap. | Clear..... | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barreeta, M. D. |
| Vera-Cruz | 29.96 | 761.0 | 29.99 | 761.7 | 68.0 | 20.0 | 78 | NW | ..... | ..... | ..... | 0 | 9sk | ..... | ..... | 0 | 0 | Very clear... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 50.0 | 10.0 | 43 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.30 | 591.8 | 30.09 | 764.2 | 45.1 | 7.3 | 43 | NNE | 2.2 | 1.0 | ..... | 1c | 8ks | ..... | SW | 0 | 0 | Covered..... | P. Spina, [M. M. D. D. |
| Morelia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Tena, F. L. Param |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.79 | 756.7 | 29.79 | 756.7 | 52.0 | 11.6 | ..... | WSW | ..... | ..... | 6 | ..... | ..... | ..... | ..... | 0.138 | 3.5 | ..... | |
| Groningen | 29.65 | 753.1 | 29.71 | 754.5 | 50.4 | 10.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.409 | 10.4 | ..... | |
| Helder | 29.63 | 752.6 | 29.63 | 752.6 | 46.9 | 8.3 | ..... | SSW | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0.213 | 5.4 | ..... | |
| Hellevoetsluis | 29.77 | 756 2 | 29.77 | 756.2 | 50.4 | 10.2 | 80 | WSW | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.71 | 754.7 | 29.76 | 755.9 | 52.5 | 11.4 | 90 | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.500 | 12.7 | Dull ..... | H. v d Brink. |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

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

| STATIONS | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.29 | 744.0 | 29.35 | 745.4 | 44.6 | 7.0 | 88 | S | 29.8 | 13.3 | ..... | ..... | 10 | ..... | ..... | 0.760 | 19.3 | ..... | |
| Brönø | 29.11 | 739.5 | 29.15 | 740.5 | 42.4 | 5.8 | 82 | SSW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.37 | 746.0 | 29.52 | 749.8 | 37.6 | 3.1 | 98 | SW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | 0.161 | 4.1 | Foggy | |
| Tromsö | 29.10 | 739.0 | 29.14 | 740.1 | 28.4 | 2.0 | 72 | W | 4 | 2 | ..... | ..... | 10 | ..... | ..... | 0.583 | 14.8 | ..... | |

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

## PORTUGUESE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.03 | 762.8 | 30.23 | 767.7 | 59.7 | 15.4 | 81 | WNW | 13.7 | 6.1 | ..... | ..... | 2 | ..... | ..... | 0.197 | 5.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.42 | 747.2 | 30.43 | 773.0 | 66.0 | 18.9 | 54 | SE | 2.5 | 1.1 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos |
| Funchal, (Madeira) | 30.33 | 770.3 | 30.41 | 772.5 | 65.8 | 18.7 | 66 | SW | 6.3 | 2.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 30.09 | 764.2 | 30.44 | 773.2 | 64.4 | 18.0 | 67 | SSW | 2.5 | 1.1 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.18 | 766.6 | 30.27 | 768.8 | 66.9 | 19.4 | 67 | WNW | 8.1 | 3.6 | ..... | ..... | 6 | ..... | ..... | 0.563 | 14.3 | ..... | |

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

| Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell: Height scale 0-9 | Sea or swell: Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd't |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello, Mozambique, Mozambique | 29.75 | 755.6 | 29.75 | 755.7 | 79.2 | 26.2 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | S | 0 | ..... | Squally | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Sado, River Bolola, Senegambia | 30.05* | 763.2* | 30.06* | 763.5* | 82.4 | 28 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 1 | ..... | Blue sky | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.82 | 757.5 | 29.83 | 757.7 | 86.0 | 30.0 | ..... | WNW | ..... | ..... | 2 | ..... | 4 | ..... | Calm | ..... | ..... | Blue sky | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreina, dos Anjos, Com' |

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.47 | 748.4 | 29.91 | 759.6 | 34.3 | 1.3 | 91 | SE | 11 | 5 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.59 | 751.6 | 30.03 | 762.7 | 31.5 | — 0.3 | 52 | S | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light clouds | Astronomical Obs. |
| Dorpat | 29.67 | 753.5 | 29.92 | 759.9 | 29.8 | — 1.2 | 70 | SSW | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.82 | 757.5 | 29.84 | 757.9 | 27.7 | — 2.4 | 73 | SW | 13 | 6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.24 | 742.6 | 30.51 | 775.0 | 32.9 | 0.5 | 100 | SW | 13 | 6 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Ch. Forsten. |
| Kieff | 29.61 | 752.2 | 30.30 | 769.5 | 25.5 | — 3.6 | 56 | SSW | 7 | 3 | ..... | ..... | 1c | ..... | ..... | ..... | ..... | Light clouds | Physical Cabinet. |
| Nikolaiev | 30.34 | 770.7 | 30.41 | 772.5 | 29.7 | — 1.3 | 42 | N | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.37 | 771.5 | 30.39 | 772.0 | 33.4 | 0.8 | 68 | N | 4 | 2 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.61 | 752.2 | 30.21 | 767.3 | 19.4 | — 7.0 | 54 | S | 9 | 4 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 30.00 | 762.0 | 30.23 | 767.7 | 18.0 | — 7.8 | 67 | NW | 13 | 6 | ..... | ..... | 4s | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.54 | 750.2 | 29.56 | 750.7 | 22.6 | — 5.2 | 96 | SSW | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.55 | 725.2 | 30.02 | 762.4 | 37.9 | 3.3 | 80 | NW | 45 | 20 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.28 | 768.6 | 30.18 | 766.5 | 26.1 | — 3.3 | 63 | WNW | 11 | 5 | ..... | ..... | 8ks | ..... | ..... | Blank | Blank | ..... | Sebastianof. |
| Kasan | 29.63 | 752.5 | 29.91 | 759.8 | 18.3 | — 7.6 | 79 | W | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.82 | 732.0 | 29.80 | 756.8 | 31.8 | — 0.1 | 75 | SW | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs |
| Nukuss | 29.43 | 747.4 | 29.66 | 753.3 | 54.0 | 12.2 | 51 | ENE | 7 | 3 | ..... | ..... | 10k | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.30 | 718.9 | 30.02 | 762.4 | 51.1 | 10.6 | 45 | NNE | 2 | 1 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Barnaul | 29.97 | 761.1 | 30.54 | 775.7 | 13.5 | —10.3 | 80 | Calm | 0 | 0 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Light clouds | Michelson. |
| Yeniseisk | 30.07 | 763.7 | 30.41 | 772.4 | 27.9 | — 2.3 | 86 | WSW | 2 | 1 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Marks. |
| Krotkowo* | 29.43 | 747.5 | 29.93 | 760.2 | 18.1 | — 7.7 | 66 | N | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 30.23 | 767.7 | 30.37 | 771.3 | 40.8 | 4.9 | 17 | NW | 34 | 15 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Light snow. | Cand. Fatjanow. |
| Nertchinsk | 27.96 | 710.3 | 30.19 | 766.9 | 12.7 | —10.7 | 60 | NW | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | — 8.9 | —22.7 | ..... | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47', E. 48° 34'.

## SPANISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 30.21 | 767.3 | 30.31 | 769.9 | 60.8 | 16 | 58 | WSW | 5.1 | 2.30 | ..... | 2cs | 0 | W | ..... | 0 | 0 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.23 | 767.8 | 30.28 | 769.2 | 73.0 | 22.8 | 52 | SE | 1.5 | 0.67 | ..... | 3 | 2 | NW | ..... | 0 | 0 | Cloudy. | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.40 | 696.0 | ..... | ..... | 60.4 | 15.8 | 72 | SW | 8.3 | 3.69 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 28.19 | 716.1 | 30.41 | 772.3 | 62.6 | 17.0 | 55 | S | 3.0 | 1.38 | ..... | 1 | 0 | W | ..... | 0 | 0 | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 30.17 | 766 2 | 30.31 | 769.9 | 76.6 | 24.8 | 74 | SSW | 1.6 | 0.72 | ..... | 0 | 2 | ..... | ..... | 0 | 0 | Almost clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.41 | 746 9 | 30.30 | 769.7 | 57.6 | 13.9 | 70 | SSW | 21.7 | 9.72 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Covered. | R. Gil Villanueva, Dir. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 30.08 | 763.9 | 30.14 | 765.6 | 68.4 | 20.2 | 88 | Calm | 0 | 0 | ..... | 9pc | 0 | ENE | ..... | 0.020 | 0.5 | Cloudy | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 30.32 | 770.2 | 30.42 | 772.7 | 71.4 | 21.9 | 59 | N | 8.5 | 3.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.94 | 760.4 | 30.03 | 762.7 | 83.5 | 28.6 | 80 | SE | 3.5 | 1.56 | ..... | 4k | 2k | SE | SE | 0.010 | 0.25 | D. clouds | Leonardo de Tejeda, Chief of Engineers. |

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

## SWEDISH SERIES.



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

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Wrather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.38 | 746.3 | 29.42 | 747.3 | 25.5 | — 3.6 | ..... | SE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.34 | 745.2 | 29.39 | 746.5 | 35.2 | 1.8 | 93 | SW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | *0 | 0 | ..... | |
| Hernosand | 29.35 | 745.6 | 29.41 | 746.9 | 42.8 | 6.0 | 70 | SSW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.45 | 748.1 | 29.63 | 752.6 | 35.6 | 2.0 | 93 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0.039 | 1.0 | ..... | |
| Wisby | 29.66 | 753.3 | 29.72 | 754.8 | 36.3 | 2.4 | 89 | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.54 | 750.4 | 29.62 | 752.3 | 35.1 | 1.7 | 96 | S | 12.5 | 5.6 | ..... | ..... | 10 | ..... | ..... | 0.063 | 1.59 | Foggy ..... | Dr. Hildebrandsson. |

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

## SWISS SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.85 | 732.8 | 30.28 | 769.0 | 54.9 | 12.7 | 77 | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.315 | 8.0 | Covered ..... | The Observatory. |
| Zurich | 28.57 | 725.7 | 30.22 | 767.6 | 50.4 | 10.2 | 85 | W | ..... | ..... | 2 | ..... | 10 | ..... | SW | 0.071 | 1.8 | Covered ..... | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the correspopding departures from the normal values are: Barometer, +7.3 mm.; Thermometer, +7.0 cent.; Relative Humidity, +12 per cent.

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

## TURKISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.37 | 771.5 | 40.5 | 4.7 | 48 | NE | 15 | 6.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Valona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stéfanidès. |
| Varna | ..... | ..... | 30.23 | 767.9 | 55.9 | 13.3 | ..... | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear. ..... | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria.) Lee Obs'y | 29.99 | 761.7 | 30.11 | 764.7 | 64.4 | 18.0 | 62 | W | ..... | ..... | 2 | ..... | 8ck | ..... | ..... | 0 | 0 | D. clouds..... | Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.26 | 768.6 | 30.33 | 770.4 | 5.5 | —14.7 | 61 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 30.28 | 769.1 | 30.62 | 777.7 | 8 | —13.3 | ..... | NE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | W. R. Bigg. |
| *Chatham, N B | 30.26 | 768.6 | 30.33 | 770.4 | 2 | —16.7 | 86 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | G. A. Blair. |
| Charlottetown, P. E. Island. | 30.20 | 767.1 | 30.25 | 768.3 | 9 | —12.8 | 89 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0.100 | 2.54 | Clear ..... | H. J. Cundall, C. E. |
| Cornwall, Ontario | 30.33 | 770.4 | 30.55 | 776.0 | 5.4 | —14.8 | 79 | NE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Bright..... | James Smith, M. A |
| Dalhousie, N. B | 30.30 | 769.6 | 30.33 | 770.4 | 0.5 | —17.5 | 94 | W | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | Bright..... | H. A. Johnson. |
| Esquimault, B. C | 29.70 | 754.4 | 29.75 | 755.6 | 42.1 | 5.6 | 100 | SW | ..... | ..... | ..... | 1k | 0 | ..... | ..... | 0 | 0 | Clear..... | W. H. Bevis. |
| *Father Point, Quebec | 30.41 | 772.4 | 30.43 | 772.9 | 0 | —17.8 | 59 | W | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | J. McWilliams. |
| Fredericton, N. B | 30.27 | 768.8 | 30.34 | 770.6 | 6.6 | —14.1 | 65 | NW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Prof. Harrison. |
| *Fort Garry Manitoba | 29.17 | 740.9 | 30.05 | 763.3 | 18 | — 7.8 | 100 | E | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.05 | 1.8 | Light snow. | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 29.24 | 742.7 | 30.41 | 772.4 | 26.2 | — 3.2 | 85 | E | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy..... | James Grant. |
| *Halifax, N. S | 30.08 | 762.7 | 30.18 | 766.6 | 18 | — 7.8 | 94 | N | 14 | 6.3 | ..... | ..... | 10n | ..... | N | Inap. | Inap. | Cloudy..... | F. Allison, M. A. |
| Hamilton, Ontario | 30.10 | 764.5 | 30.50 | 774.7 | 26.2 | — 3.2 | 87 | NE | ..... | ..... | 2 | ..... | 10cs | ..... | ..... | 0 | 0 | Cloudy..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.73 | 755.1 | 29.76 | 755.9 | 24 | — 4.4 | 100 | NW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | Inap. | Inap. | Overcast..... | E. Weedon. |
| *Kingston, Ontario | 30.21 | 767.3 | 30.58 | 776.7 | 9 | —12.8 | 74 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | S. Woods, M. A. |
| Little Glace Bay, N. S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.30 | 7.6 | ..... | C. H. Rigby. |
| *Montreal, Quebec | 30.34 | 770.6 | 30.57 | 776.6 | 2 | —16.7 | 72 | N | ..... | ..... | ..... | 0 | Sm'e | ..... | ..... | Inap | Inap. | Clear..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.79 | 756.7 | 30.58 | 776.7 | 4 | —15.6 | 69 | E | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Rev. R. Mosley. |
| Peterboro, Ontario | 29.74 | 755.4 | 30.57 | 776.5 | 9.7 | —12.4 | 56 | E | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.72 | 754.9 | 30.46 | 773.7 | 25 | — 3.9 | 75 | NE | 8 | 3.6 | ..... | 10k | 0 | NW | ..... | 0 | 0 | Clear..... | H. Morgan. |
| Port Hastings, N. S | 30.13 | 765.3 | 30.18 | 766.6 | 11.9 | —11.2 | ..... | NW | 18 | 8.0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair..... | Peter Grant. |
| Port Stanley, Ontario | 29.71 | 754.6 | 30.39 | 771.9 | 29 | — 1.7 | 87 | E | 8 | 3.6 | ..... | ..... | 10ks | ..... | NW | 0 | 0 | Fine..... | M. Payne. |
| *Quebec, Quebec | 30.17 | 766.3 | 30.54 | 775.7 | — 2 | —18.9 | 84 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Cloudy..... | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 30.16 | 766 1 | 30.69 | 779.5 | — 6 | —21.1 | 89 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | W. H. McIntyre. |
| St. Andrews, N. B | 30.32 | 770.1 | 30.37 | 771.4 | 9 | —12.8 | 56 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Dr. Gove. |
| St. John, N. B | 30.11 | 764.8 | 30.29 | 769.4 | 12 | —11.1 | 80 | N | 9 | 4.0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear..... | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.67 | 753.6 | 30.44 | 773.2 | 21 | — 6.1 | 90 | SE | 5 | 2.2 | ..... | 10ks | ..... | ..... | ..... | Inap. | Inap. | Clear..... | K. Stewart. |
| Stayner, Ontario | 29.69 | 754.1 | 30.55 | 776.0 | 14 | —10.0 | 80 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Cloudy..... | R. J. Cole. |
| Stratford, Ontario | 29.66 | 753.1 | 30.43 | 772.9 | 23.4 | — 4.8 | 80 | SE | 12 | 5.4 | ..... | 2c | 4s | NW | ..... | 0 | 0 | Clear..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.05 | 763.3 | 30.08 | 764.0 | 14 | —10.0 | 71 | NW | 16 | 7.2 | ..... | 0 | 5ks | ..... | NW | 0.13 | 3.3 | Clearing..... | T. C. Hill. |
| *Toronto, Ontario | 30.12 | 765.0 | 30.51 | 775.7 | 19 | — 7.2 | 84 | NE | 7 | 3.1 | ..... | 5ck | 0 | E | ..... | Inap. | Inap. | Clear..... | Magnetic Observatory. |
| Windsor, N S | 30.10 | 764.5 | 30.20 | 767.1 | 16.0 | — 9.4 | 91 | N | 23 | 10.3 | ..... | 0 | 4ks | ..... | ..... | 0.55 | 14.0 | Fair..... | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 27.0 | — 2.8 | ..... | W | ..... | ..... | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing..... | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182ft. or 360.3 m.

UNITED STATES SERIES.

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

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 30.23 | 767.8 | 30.48 | 774.2 | 16 | — 8.9 | 66 | N | 24 | 10.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Alpena, Michigan | 29.74 | 755.4 | 30.44 | 773.2 | 24 | — 4.4 | 74 | E | 10 | 4.5 | ..... | ..... | 10s | ..... | E | Inap. | Inap. | Cloudy | |
| Atlantic City, New Jersey | 30.30 | 769.6 | 30.32 | 770.1 | 38 | 3.3 | 71 | N | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Augusta, Georgia | 30.10 | 764.5 | 30.30 | 769.6 | 37 | 2.8 | 85 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Smoky | |
| Baltimore, Maryland | 30.30 | 769.6 | 30.35 | 770.9 | 44 | 6.7 | 45 | N | 4 | 1.8 | ..... | Haze | Sm'e | Calm | Calm | 0 | 0 | Smoky | |
| Barnegat, New Jersey | 30.31 | 769.9 | 30.34 | 770.6 | 39 | 3.9 | 72 | N | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Bismarck, Dakota | 27.98 | 710.7 | 29.84 | 757.9 | 26 | — 3.3 | 88 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | N | Inap. | Inap. | Cloudy | |
| Boise City, Idaho | 27.16 | 689.8 | 30.04 | 763.0 | 35 | 1.7 | 70 | S | 2 | 0.9 | ..... | 2k | 2s | Calm | Calm | 0 | 0 | Fair | |
| Boston, Massachusetts | 30.22 | 767.6 | 30.39 | 771.9 | 26 | — 3.3 | 46 | N | 12 | 5.4 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Brackettville, Texas | 28.67 | 728.2 | 29.69 | 754.1 | 56 | 13.3 | 51 | Calm | 0 | 0 | ..... | 2c | 5s | SW | Calm | 0 | 0 | Fair | |
| Breckenridge, Minnesota | 28.79 | 731.3 | 29.80 | 756.9 | 37 | 2.8 | 90 | SE | 14 | 6.3 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Brownsville, Texas | 29.76 | 755.9 | 29.82 | 757.4 | 67 | 19.4 | 73 | SE | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 29.72 | 754.9 | 30.49 | 774.4 | 22 | — 5.6 | 72 | NE | 13 | 5.8 | ..... | 1k | 0 | NE | ..... | 0 | 0 | Clear | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Burlington, Vermont | 30.32 | 770.1 | 30.61 | 777.5 | 7 | —13.9 | 54 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cairo, Illinois | 29.73 | 755.1 | 30.13 | 765.3 | 45 | 7.2 | 61 | SE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Grant, Arizona | 25.17 | 639.3 | 29.97 | 761.2 | 36 | 2.2 | 71 | NW | ..... | ..... | ..... | ..... | 10n | ..... | Calm | 0.33 | 8.4 | Light rain | |
| Camp Verde, Arizona | 26.91 | 683.5 | 30.40 | 772.1 | 34 | 1.1 | 100 | Calm | ..... | ..... | ..... | ..... | Fog | ..... | Calm | Inap. | Inap. | Foggy | |
| Campo, California | 27.50 | 698.5 | 30.07 | 763.8 | 38 | 3.3 | 90 | Calm | 0 | 0 | ..... | 5cs | 0 | Calm | ..... | 0.27 | 6.9 | Fair | |
| Cape Hatteras, N. Carolina | 30.26 | 768.6 | 30.26 | 768.6 | 45 | 7.2 | 84 | N | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Henry, Virginia | 30.24 | 768.1 | 30.27 | 768.8 | 46 | 7.8 | 77 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 30.25 | 768.3 | 30.27 | 768.8 | 47 | 8.3 | 62 | NE | 7 | 3.1 | ..... | 5cs | 0 | W | ..... | 0 | 0 | Fair | |
| Cape May, New Jersey | 30.29 | 769.4 | 30.32 | 770.1 | 42 | 5.6 | 58 | NE | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 30.23 | 767.8 | 30.30 | 769.6 | 47 | 8.3 | 62 | N | 5 | 2.2 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 23.68 | 601.5 | 29.62 | 752.3 | 32 | 0.0 | 69 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | NW | 0.01 | 0.3 | Cloudy | |
| Chicago, Illinois | 28.44 | 747.8 | 30.15 | 765.8 | 42 | 5.6 | 66 | SE | 9 | 4.0 | ..... | 8cs | 0 | SE | ..... | 0 | 0 | Fair | |
| Cincinnati Ohio | 29.57 | 751.1 | 30.24 | 768.1 | 37 | 2.8 | 81 | SE | 1 | 0.4 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Clevelana, Ohio | 29.58 | 751.3 | 30.35 | 770.9 | 33 | 0.6 | 70 | NE | 2 | 0.9 | ..... | 2cs | Fog | Calm | Calm | 0 | 0 | Fair | |
| Concho, Texas | 27.84 | 707.1 | 29.51 | 749.5 | 45 | 7.2 | 67 | SW | 12 | 5.4 | ..... | 8k | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Corsicana, Texas | 29.32 | 744.7 | 29.78 | 756.4 | 56 | 13.3 | 94 | S | 10 | 4.5 | ..... | ..... | 10n | ..... | Calm | 0.10 | 2.5 | Light rain | |
| Davenport, Iowa | 29.44 | 747.8 | 30.09 | 764.3 | 39 | 3.9 | 73 | E | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Deadwood, Dakota | 25.12 | 738.0 | ..... | ..... | 28 | — 2.2 | 88 | NE | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Denison, Texas | 29.92 | 760.0 | 29.71 | 754.6 | 49 | 9.4 | 93 | SE | 12 | 5.4 | ..... | ..... | 10n | ..... | SE | 0.05 | 1.3 | Light rain | |
| Denver, Colorado | 24.44 | 620.8 | 29.66 | 753.4 | 34 | 1.1 | 90 | N | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.10 | 2.5 | Light snow | |
| Detroit, Michigan | 29.63 | 752.6 | 30.34 | 770.6 | 33 | 0.6 | 89 | E | 6 | 2.7 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Dodge City, Kansas | 26.93 | 684.0 | 29.17 | 740.9 | 42 | 5.6 | 83 | SE | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.12 | 3.0 | Light rain | |
| Dubuque, Iowa | 29.35 | 746.5 | 30.11 | 764.8 | 37 | 2.8 | 81 | S | 2 | 0.9 | ..... | ..... | 10ks | ..... | SE | 0 | 0 | Cloudy | |
| Duluth, Minnesota | 29.40 | 746.7 | 30.10 | 764.5 | 32 | 0.0 | 89 | NE | 12 | 5.4 | ..... | ..... | 10s | ..... | NE | 0.12 | 3.0 | Cloudy | |
| Eagle Pass, Texas | 29.03 | 737.3 | 29.76 | 755.9 | 55 | 12.8 | 93 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 30.29 | 769.4 | 30.36 | 771.1 | 10 | —12.2 | 68 | N | 23 | 10.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.64 | 752.8 | 30.40 | 772.1 | 32 | 0.0 | 79 | NE | 16 | 7.2 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| Escanaba, Michigan | 29.60 | 751.8 | 30.29 | 769.4 | 31 | — 0.6 | 79 | SE | 14 | 6.3 | ..... | ..... | 10s | ..... | SE | 0.13 | 3.3 | Cloudy | |
| Florence, Arizona | 28.42 | 721.9 | 30.02 | 762.5 | 45 | 7.2 | 60 | S | ..... | ..... | ..... | ..... | 10s | ..... | W | 0.89 | 22.6 | Cloudy | |
| Fort Bayard, New Mexico | 23.94 | 608.1 | 29.94 | 760.5 | 29 | — 1.7 | 100 | NW | 18 | 8.0 | ..... | ..... | 10n | ..... | NW | 0.38 | 9.7 | Light snow | |
| Fort Craig, New Mexico | 25.26 | 641.6 | ..... | ..... | 38 | 3.3 | 45 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.18 | 741.2 | 29.71 | 754.6 | 53 | 11.7 | 54 | SE | 22 | 9.8 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Fort Griffin, Texas | 28.36 | 720.3 | 29.61 | 752.1 | 53 | 11.7 | 48 | S | 12 | 5.4 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Fort St. Michael, Alaska | 29.47 | 748.5 | 29.51 | 749.5 | — 8 | —22.2 | 100 | N | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Sill, Indian Territory | 28.33 | 719.6 | 29.41 | 747.0 | 53 | 11.7 | 86 | S | 32 | 14.3 | ..... | ..... | 10n | ..... | SW | 0.15 | 3.8 | Light rain | |
| Galveston, Texas | 29.82 | 757.4 | 29.86 | 758.4 | 62 | 16.7 | 88 | S | 10 | 4.5 | ..... | ..... | 10s | ..... | S | Inap. | Inap. | Cloudy | |
| Grand Haven, Michigan | 29.59 | 751.6 | 30.27 | 768.8 | 33 | 0.6 | 79 | E | 16 | 7.2 | ..... | 5cs | 0 | NE | ..... | 0 | 0 | Fair | |
| Indianapolis, Indiana | 29.40 | 746.7 | 30.21 | 767.3 | 39 | 3.9 | 73 | SE | 5 | 2.2 | ..... | 8cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Indianola, Texas | 29.82 | 757.4 | 29.85 | 758.2 | 65 | 18.3 | 78 | S | 15 | 6.7 | ..... | 0 | 5ks | ..... | SE | 0 | 0 | Fair | |
| Jacksboro, Texas | 28.53 | 724.6 | 29.63 | 752.6 | 55 | 12 8 | 87 | SW | 12 | 5.4 | ..... | ..... | 10ks | ..... | SW | 0 | 0 | Cloudy | |
| Jacksonville, Florida | 30.22 | 767 6 | 30.24 | 768.1 | 52 | 11.1 | 79 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.37 | 746.0 | 30.00 | 762.0 | 38 | 3.3 | 72 | SE | 12 | 5.4 | ..... | 0 | 4s | ..... | Calm | 0 | 0 | Fair | |
| Key West, Florida | 30.12 | 765.0 | 30.15 | 765.8 | 66 | 18.9 | 90 | NE | 12 | 5.4 | ..... | 10k | 0 | NE | ..... | Inap. | Inap. | Cloudy | |
| Kittyhawk, North Carolina | 30.24 | 768.1 | 30.27 | 768.8 | 43 | 6.1 | 67 | NW | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Knoxville, Tennessee | 29.24 | 742.7 | 30.31 | 769.9 | 32 | 0.0 | 79 | Calm | 0 | 0 | ..... | 3ck | 0 | W | ..... | 0 | 0 | Fair | |
| La Crosse, Wisconsin | 29.33 | 745.0 | 30.08 | 764.0 | 41 | 5.0 | 65 | SE | 8 | 3.6 | ..... | ..... | 10s | Calm | ..... | 0 | 0 | Cloudy | |
| La Mesilla, New Mexico | 25.94 | 658.9 | 30.09 | 764.3 | 37 | 2.8 | 80 | SW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.33 | 745.0 | 29.66 | 753.4 | 58 | 14.4 | 88 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 28.95 | 735.3 | 29.80 | 756.9 | 45 | 7.2 | 92 | SE | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Los Angeles, California | 29.82 | 757.4 | 30.16 | 766.1 | 45 | 7.2 | 68 | N | 4 | 1.8 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.62 | 752.3 | 30.21 | 767.3 | 37 | 2.8 | 71 | NE | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Lynchburg, Virginia | 29.60 | 751.8 | 30.32 | 770.1 | 35 | 1.7 | 61 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Maricopa Wells, Arizona | ..... | ..... | ..... | ..... | 46 | 7 8 | 62 | N | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0.48 | 12.2 | Clear | |
| Marquette, Michigan | 29.52 | 749.8 | 30.25 | 768.3 | 31 | — 0.6 | 79 | SE | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 0.28 | 7.1 | Cloudy | |
| Mason, Texas | 28.16 | 715.3 | 29.90 | 759.4 | 53 | 11.7 | 49 | SW | 12 | 5.4 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Memphis, Tennessee | 29.78 | 756.4 | 30.10 | 764.5 | 48 | 8.9 | 54 | SE | 6 | 2.7 | ..... | ..... | 8ks;hz | ..... | SE;Calm | 0 | 0 | Cloudy | |
| Milwaukee, Wisconsin | 29.50 | 749.3 | 30.21 | 767.3 | 37 | 2.8 | 81 | SE | 8 | 3.6 | ..... | 10cs | 0 | ..... | ..... | 0 | 0 | Cloudy | |
| Mobile, Alabama | 30.11 | 764.8 | 30.16 | 766.1 | 48 | 8.9 | 93 | S | 3 | 1.3 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Montgomery, Alabama | 29.99 | 761.7 | 30.23 | 767.8 | 41.5 | 5.3 | 74 | Calm | 0 | 0 | ..... | Haze | Sm'e | Calm | Calm | 0 | 0 | Hazy | |
| Morgantown, West Virginia | 29.24 | 742.7 | 30.36 | 771.1 | 34 | 1.1 | 70 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Smoky | |
| Mt. Washington, N. H. | 23.74 | 603.0 | 30.10 | 764.5 | 4 | —15.6 | 48 | NE | 36 | 16.1 | ..... | 0 | 0 | ..... | ..... | 0.13 | 3.3 | Clear | |
| Nashville, Tennessee | 29.64 | 752.8 | 30.20 | 767.1 | 36 | 2.2 | 90 | SE | 3 | 1.3 | ..... | 8k | 0 | S | ..... | 0 | 0 | Fair | |
| New Haven, Connecticut | 30.27 | 768.8 | 30.39 | 771.9 | 32 | 0.0 | 59 | N | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New London, Connecticut | 30.32 | 770.1 | 30.37 | 771.4 | 35 | 1.7 | 39 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New Orleans, Louisiana | 30.00 | 762.0 | 30.06 | 763.5 | 59 | 15.0 | 82 | E | 9 | 4.0 | ..... | 2cs | 0 | E | ..... | 0 | 0 | Fair | |
| Newport, Rhode Island | 30.30 | 769.6 | 30.35 | 770.9 | 30 | — 1.1 | 57 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New York, New York | 30.18 | 766.6 | 30.37 | 771.4 | 35 | 1.7 | 61 | NW | 14 | 6.3 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Norfolk, Virginia | 30.24 | 768.1 | 30.30 | 769.6 | 44 | 6.7 | 60 | N | 6 | 2.7 | ..... | Haze | Sm'e | Calm | Calm | 0 | 0 | Hazy | |
| North Platte, Nebraska | 26.74 | 679.2 | 29.32 | 744.7 | 34 | 1.1 | 95 | NE | 10 | 4.5 | ..... | ..... | 10s | ..... | NE | 0.30 | 7.6 | Cloudy | |
| Olympia, Washington Ter. | 29.82 | 757.4 | 29.86 | 758.4 | 42 | 5.6 | 91 | S | 6 | 2.7 | ..... | 0 | 5s | ..... | Calm | 0.23 | 5.8 | Fair | |
| Omaha, Nebraska | 28.68 | 728.5 | 29.76 | 755.9 | 44 | 6.7 | 68 | SE | 8 | 3.6 | ..... | 5c | 5s | Calm | Calm | 0 | 0 | Cloudy | |
| Oswego, New York | 30.17 | 766.3 | 30.52 | 775.2 | 20 | — 6.7 | 70 | NE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pembina, Dakota | 29.11 | 739.4 | 29.97 | 761.2 | 25.5 | — 3.6 | 94 | E | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Philadelphia, Pennsylvania | 30.01 | 762.2 | 30.36 | 771.1 | 41 | 5.0 | 57 | N | 12 | 5.4 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Phœnix, Arizona | 28.95 | 735.3 | 30.84 | 783.3 | 41 | 5.0 | 91 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0.43 | 10.9 | Clear | |
| Pike's Peak, Colorado | 17.38 | 441.4 | 29.59 | 751.6 | 6 | —14.4 | 100 | N | 16 | 7.2 | ..... | ..... | 10n | ..... | Calm | 0.19 | 4.8 | Light snow | |
| Pioche, Nevada | 23.98 | 609.1 | 29.75 | 755.6 | 22 | — 5.6 | 86 | NW | 6 | 2.7 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.49 | 749.0 | 30.35 | 770.9 | 32 | 0.0 | 89 | NW | 1 | 0.4 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Port Huron, Michigan | 29.65 | 753.1 | 30.34 | 770.6 | 34 | 1.1 | 79 | E | 4 | 1.8 | ..... | 0 | 2ks | ..... | Calm | 0 | 0 | Clear | |
| Portland, Maine | 30.34 | 770.6 | 30.40 | 772.1 | 21 | — 6.1 | 57 | N | 16 | 7.2 | ..... | 1k | Haze | Calm | ..... | 0 | 0 | Cloudy | |
| Portland, Oregon | 29.94 | 760.5 | 30.04 | 763.0 | 44 | 6.7 | 92 | S | 4 | 1.8 | ..... | ..... | 8s | ..... | S | 0.30 | 7.6 | Cloudy | |
| Prescott, Arizona | 24 77 | 629.2 | 30.13 | 765.3 | 27 | — 2.8 | 64 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0.14 | 3.6 | Clear | |
| Punta Rassa, Florida | 30.15 | 765.8 | 30.17 | 766.3 | 62 | 16.7 | 77 | NE | 12 | 5.4 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Red Bluff, California | 29.84 | 757.9 | 30.22 | 767.6 | 47 | 8.3 | 85 | S | 6 | 2.7 | ..... | 2k | 2s | SW | Calm | 0.01 | 0.3 | Fair | |

## UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature, Inches. | BAROMETER. Corrected for instrum'tal error and temperature, Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rochester, New York | 29.84 | 757.9 | 30.51 | 774.9 | 20 | — 6.7 | 85 | NE | 11 | 4.9 | | | 10s | | E | Inap. | Inap. | Cloudy | |
| Roseburg, Oregon | 29.54 | 750.3 | 30.12 | 765.0 | 45 | 7.2 | 92 | SW | 5 | 2.2 | | | 10n | | Calm | 0.06 | 1.5 | Light rain | |
| Sacramento, California | 30.14 | 765.5 | 30.23 | 767.8 | 45 | 7.2 | 84 | SE | 4 | 1.8 | | 5k | 0 | SW | | 0 | 0 | Fair | |
| St. Louis, Missouri | 29.47 | 748.5 | 30.06 | 763.5 | 42 | 5.6 | 58 | SE | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| St. Marks, Florida | 30.20 | 767.1 | 30.22 | 767.6 | 45 | 7.2 | 92 | N | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.10 | 739.1 | 29.94 | 760.5 | 39 | 3.9 | 71 | E | 10 | 4.5 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| St. Paul's Island, Alaska | | | | | | | | | | | | | | | | | | | |
| Salt Lake City, Utah | 25.62 | 650.7 | 29.95 | 760.7 | 32 | 0.0 | 79 | S | 1 | 0.4 | | 0 | 0 | | | 0.56 | 14.2 | Clear | |
| San Antonio, Texas | 29.11 | 739.4 | 29.68 | 753.9 | 60 | 15.6 | 94 | S | 4 | 1.8 | | | 10ks | | S | 0 | 0 | Threatening | |
| San Diego, California | 30.12 | 765.0 | 30.19 | 766.8 | 49 | 9.4 | 78 | E | 6 | 2.7 | | 0 | 0 | | | 0.08 | 2.0 | Clear | |
| Sandusky, Ohio | 29.64 | 752.8 | 30.35 | 770.9 | 36 | 2.2 | 80 | E | 15 | 6.7 | | 4cs | 2s | Calm | Calm | 0 | 0 | Clear | |
| Sandy Hook, New Jersey | 30.34 | 770.6 | 30.37 | 771.4 | 37 | 2.8 | 63 | N | 20 | 8.9 | | 0 | Sm'e | | | 0 | 0 | Fair | |
| San Francisco, California | 30.16 | 766.1 | 30.23 | 767.8 | 49 | 9.4 | 85 | SW | 2 | 0.9 | | Haze | 0 | | | 0 | 0 | Clear | |
| Santa Fé, New Mexico | 22.89 | 581.4 | 29.43 | 747.5 | 28 | — 2.2 | 66 | N | 12 | 5.4 | | 0 | 0s | | | 0 | 0 | Clear | |
| Savannah, Georgia | 30.17 | 766.3 | 30.27 | 768.8 | 48 | 8.9 | 78 | N | 2 | 0.9 | | 0 | 0 | Calm | Calm | 0.25 | 6.3 | Fair | |
| Shreveport, Louisiana | 29.72 | 754.9 | 29.94 | 760.5 | 54 | 12.2 | 93 | E | 4 | 1.8 | | 0 | Smc/g | | | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.25 | 768.3 | 30.28 | 769.1 | 43 | 6.1 | 83 | N | 7 | 3.1 | | | 10s | | Calm | Inap. | Inap. | Cloudy | |
| Springfield, Massachusetts | 30.20 | 767.1 | 30.34 | 770.6 | 26 | — 3.3 | 52 | NE | 10 | 4.5 | | 1c | Fog | W | Calm | 0 | 0 | Clear | |
| Stockton, Texas | 29.77 | 680.0 | 29.77 | 756.1 | 46 | 7.8 | 40 | W | 16 | 7.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 30.38 | 770.4 | 30.39 | 771.9 | 26 | — 3.3 | 63 | NE | 24 | 10.7 | | 1k | 0 | NE | | 0 | 0 | Clear | |
| Toledo, Ohio, | 29.60 | 751.8 | 30.32 | 770.1 | 35 | 1.7 | 80 | NE | 10 | 4.5 | | | 10s | | NE | 0 | 0 | Clear | |
| Tucson, Arizona | | | | | 44 | 6.7 | 92 | S | | | | | 10s | | Calm | 0.49 | 12.4 | Cloudy | |
| Tybee Island, Georgia | 30.24 | 768.1 | 30.27 | 768.8 | 50 | 10.0 | 77 | Calm | 0 | 0 | | 0 | Haze | | Calm | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.64 | 752.8 | | | 42 | 5.6 | 83 | SW | 8 | 3.6 | | 0 | 8s | | SW | 0 | 0 | Cloudy | |
| Vicksburg, Mississippi | 29.81 | 757.2 | 30.07 | 763.8 | 52 | 11.1 | 79 | SE | 16 | 7.2 | | | 10s | | SW | 0 | 0 | Cloudy | |
| Virginia City, Montana | 24.11 | 612.4 | 29.59 | 751.6 | 24 | — 4.4 | 74 | Calm | 0 | 0 | | 0 | 0 | | | 0.07 | 1.8 | Clear | |
| Visalia, California | 29.88 | 758.9 | 30.27 | 768.8 | 37 | 2.8 | 100 | Calm | 0 | 0 | | 0 | Fog | | Calm | Inap. | Inap. | Clear | |
| Washington, D. C. | 30.25 | 768.3 | 30.37 | 771.4 | 42 | 5.6 | 58 | N | 6 | 2.7 | | 0 | Fog | | S | 0 | 0 | Clear | |
| Wickenburg, Arizona | | | | | 35 | 1.7 | 61 | NE | | | | 5c | 0 | Calm | | 0.20 | 5.1 | Fair | |
| Wilmington, N. Carolina | 30.20 | 767.1 | 30.28 | 769.1 | 41 | 5.0 | 82 | NE | 3 | 1.3 | | 0 | Fog | | Calm | 0 | 0 | Clear | |
| Winnemucca, Nevada | 29.67 | 752.0 | 30.03 | 762.7 | 31 | — 0.6 | 79 | SW | 2 | 0.9 | | 10k | 0 | SW | | 0 | 0 | Cloudy | |
| Wood's Holl, Mass | 30.28 | 769.1 | 30.34 | 770.6 | 33 | 0.6 | 61 | N | 12 | 5.4 | | 5c | 0 | N | | 0 | 0 | Fair | |
| Yankton, Dakota | 28.47 | 723.1 | 29.75 | 755.6 | 43 | 6.1 | 67 | SE | 18 | 8.0 | | | 10s | | S | Inap. | Inap. | Cloudy | |
| Yuma, Arizona | 30.07 | 763.8 | 30.24 | 768.1 | 47 | 8.3 | 62 | Calm | 0 | 0 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 29.80 | 756.9 | 29.85 | 758.2 | — 3.5 | —19.7 | 83 | NW | 5 | 2.2 | | 2c | 0 | N | | 0 | 0 | Fair | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 30.10 | 764.5 | 30.12 | 765.0 | 71 | 21.7 | 85 | SE | 1.2 | 0.5 | | 4c | 4n | Calm | SE | 0.03 | 0.8 | Foggy | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.14 | 765.5 | 30.15 | 765.8 | 79 | 26.1 | 86 | Calm | 0 | 0 | | 5c | 2s | E | | 0 | 0 | | James Gall. |
| Navassa, W. I. | 29.95 | 760.7 | 30.03 | 762.7 | 80 | 26.7 | | NE | 10 | 4.5 | | | | | | 0 | 0 | Fair | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | | | 30.06 | 763.5 | 83 | 28.3 | 79 | E | | | 3 | 5k | 7ks | E | | 0 | 0 | ½ Cloudy | C. J. Hering. |
| Batavia, Dutch Guiana, S. A. | 30.07 | 763.8 | 30.08 | 764.0 | 77.9 | 25.5 | | | | | | | | | | 0 | 0 | Cloudy | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.20 | 641.6 | | | 71.6 | 21.9 | 75 | SW | | | 1 | 2k | 4ks | | E | 0 | 0 | | Thomas Herran |
| Honolulu, Oahu, H. I. | | | | | | | | | | | | | | | | | | | Daniel Smith. |
| Makawao, Maui, H. I. | | | | | | | | | | | | | | | | | | | F. L. Clarke. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 1, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,916.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,822 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.69 in.; Wickenburg, 2.09 in.; Winnemucca, 4.86 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er. 0—10. | Clouds. Amount. Low'r. 0—10. | Clouds. Direction. Up'er. From— | Clouds. Direction. Low'r. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.17 | 766.3 | 46 | 7.8 | 46 | 7.8 | 100 | N | 6 | 2.7 | ..... | ..... | 6ks | ..... | N | 0 | 0 | ..... | ..... | Clearing... | |
| Navy Yard, Pensacola, Fla. | 30.21 | 767.3 | 56 | 13.3 | 55 | 12.8 | 93 | NE | 2 | 0.9 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Portsmouth, N.H | 30.30 | 769.6 | 61 | 16.1 | 21 | — 6.1 | 57 | NE | 6 | 2.7 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan | 29.82* | 757.4* | 49.5 | 9.7 | 38.5 | 3.6 | 49 | NNE | ..... | ..... | 2 | ..... | 3ks | ..... | SW | 0 | 0 | ..... | ..... | Fair ..... | |
| Adams. Panama | 29.97 | 761.2 | 82 | 27.8 | 81 | 27.2 | 87 | NNW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Alliance, Smyrna, Turkey | 30.26‡ | 768.6‡ | ..... | ..... | 53 | 11.7 | 25 | ENE | ..... | ..... | 0–1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Ashuelot. Shanghai, China | 30.40* | 772.1* | 46 | 7.8 | 40 | 4.4 | 64 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | D. clouds..... | |
| Canonicus, New Orleans, La. | 30.08 | 764.0 | 46 | 7.8 | 59 | 15.0 | 82 | ESE | ..... | ..... | 2 | ..... | 7 | ..... | N&W | ..... | ..... | ..... | ..... | Cloudy..... | |
| Colorado, New York, N. Y. | 30.35‡ | 770.9‡ | ..... | ..... | 34 | 1.1 | 71 | NNW | 10 | 4.5 | ..... | ..... | 2 | ..... | NNW | 0 | 0 | ..... | ..... | Hazy..... | |
| Constitution, Off Ship John Light, Delaware Bay. | 30.34‡ | 770.6‡ | ..... | ..... | 42 | 5.6 | 74 | N | ..... | ..... | 4 | ..... | 1 | ..... | Calm | ..... | ..... | Smooth | ..... | Clear..... | |
| Despatch, Constantinople, Turkey. | 30.55 | 776.0 | 74 | 23.3 | 50 | 10.0 | 72 | NE | ..... | ..... | 2 | ..... | 8 | ..... | NE | ..... | ..... | ..... | ..... | Fair ..... | |
| Enterprise, New Orleans, La. | 30.04‡ | 763.0‡ | ..... | ..... | 59 | 15.0 | 88 | E | ..... | ..... | 2 | ..... | 2 | ..... | WSW | ..... | ..... | ..... | ..... | Clear ..... | |
| Franklin, Norfolk, Va. | 30.28‡ | 769.1‡ | ..... | ..... | 46 | 7.8 | 54 | NE | 5 | 2.2 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | ..... | Blue sky..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.21 | 767.3 | 76 | 24.4 | 75 | 23.9 | 68 | NNE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |
| Marion, Piraeus, Greece | 30.25 | 768.3 | 62 | 16.7 | 58 | 14.4 | 53 | NE | ..... | ..... | 2 | ..... | 10 | ..... | NNW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Michigan, Erie, Pa. | 29.87 | 758.7 | 65 | 18.3 | 33 | 0.6 | 80 | ENE | ..... | ..... | 3 | ..... | 10 | ..... | ENE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monongahela, N. 12° 10′, E. 120° 47′ | 30.06* | 763.5* | 83 | 28.3 | 83 | 28.3 | 87 | ENE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Smooth | ..... | D. clouds..... | |
| New Hampshire, Port Royal, S. C. | 30.42 | 772.7 | 54 | 12.2 | 50 | 10.0 | 72 | NE | 1 | 0.4 | ..... | ..... | 1 | ..... | NE | 0 | 0 | ..... | ..... | Clear..... | |
| Omaha, S. 23° 30′, W. 34° 28′ | 30.03* | 762.7* | 75 | 23.9 | 77 | 25.0 | 91 | NNW | 6 | 2.7 | ..... | ..... | 6 | ..... | NNW | 2. | 51. | High | NNW | Unpleasant. | |
| Onward, Callao, Peru | 30.02† | 762.5† | ..... | ..... | 72 | 22.2 | 90 | SSE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, Belize, British Honduras. | 30.09‡ | 764.3‡ | ..... | ..... | 73 | 22.8 | 90 | WSW | ..... | ..... | 1 | ..... | 2 | ..... | E | ..... | ..... | ..... | ..... | Clear ..... | |
| Palos, Shanghai, China | 30.44* | 773.2* | 64 | 17.8 | 41 | 5.0 | 65 | WNW | ..... | ..... | 1 | ..... | 10 | ..... | N&W | ..... | ..... | ..... | ..... | Overcast..... | |
| Pensacola, Honolulu, H. I. | 30.22 | 767.6 | 73 | 22.8 | 69 | 20.6 | 80 | NE | 1 | 0.4 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear ..... | |
| Plymouth, Norfolk, Va. | 30.23‡ | 767.8‡ | ..... | ..... | 45 | 7.2 | 92 | NNE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Powhatan, St. Vincent, W. I. | 30.09‡ | 764.3‡ | ..... | ..... | 84 | 28.9 | 91 | E | 4.2 | 1.9 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Smooth | ..... | Pleasant.. | |
| Ranger, N. 22° 19′ E. 116° 29′ | 30.35* | 770.9* | ..... | ..... | 61 | 16.1 | 82 | ENE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Long | W | Blue sky..... | |
| Rio Bravo, Brownsville, Texas | ..... | ..... | ..... | ..... | 68 | 20.0 | 90 | SSE | ..... | ..... | 4–5 | ..... | 9 | ..... | SE | ..... | ..... | ..... | ..... | Overcast..... | |
| Santee, Annapolis, Md. | 30.36* | 771.1* | 44 | 6.7 | 42 | 5.6 | 58 | NE | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Saratoga, Washington, D. C. | 30.25* | 768.3* | ..... | ..... | 49 | 9.4 | ..... | SE | ..... | ..... | 1 | ..... | 2 | ..... | SE | 0 | 0 | ..... | ..... | Clear..... | |
| St. Louis, League Island, Pa | 30.26 | 768.6 | 55 | 12.8 | 41 | 5.0 | 79 | NNW | 5 | 2.2 | ..... | ..... | 5 | ..... | NNW | 0 | 0 | ..... | ..... | Fair ..... | |
| Supply, N. 41° 05′, W. 61° 37′ | 30.04 | 763.0 | 52 | 11.1 | 47 | 8.3 | 62 | N | ..... | ..... | 5 | ..... | 5 | ..... | NNE | ..... | ..... | Mod'ate | NNE | Fair..... | |
| Swatara, N. 18° 57′, W. 72° 51′ | 30.17* | 766.3* | ..... | ..... | 82 | 27.8 | 83 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Blue sky..... | |
| Tennessee, Hong-Kong, China | 30.20* | 767.1* | 72 | 22.2 | 57 | 13.9 | 87 | ENE | 3 | 1.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Misty..... | |
| Trenton, Smyrna, Turkey | 30.27‡ | 768.8‡ | ..... | ..... | 53 | 11.7 | 73 | NNE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Hazy..... | |
| Tuscarora, N. 36° 20,′ W. 122° 00′ | 30.24 | 768.1 | 58 | 14.4 | 54 | 12.2 | 100 | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Mod'ate | W | Clear..... | |
| Vandalia, Constantinople, Turkey. | 30.30‡ | 769.6‡ | ..... | ..... | 44 | 6.7 | 68 | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Wabash, Boston, Mass. | 30.38‡ | 771.6‡ | ..... | ..... | 28 | — 2.2 | ..... | NNW | 8 | 3.6 | ..... | ..... | 2 | ..... | Calm | 0 | 0 | ..... | ..... | Fair ..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

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

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio, N. 35° 35′, E. 143° 18′ | | | | | 53 | 11.7 | | NW | | | 7 | | 6 | | WSW | Rough | sw&nw | D. clouds | Capt. Searle. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Austin. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds.

**WHITE STAR LINE MARINE SERIES.**

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. W. H. Thompson |
| S. S. Celtic, N. 50° 27′, W. 22° 7′ | | | 29.69† | 754.1† | 49 | 9.4 | ?? | NW | | | 4 | | | NW | | Mod'ate | NW | Showery | Capt. B. Gleadell. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

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

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

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, N. 30° 43′, E. 129° 24′ | | | 29.85* | 758.2* | | | | NNW | | | 5 | | Light | | NW | Rough | NNW | D. clouds | Capt. John Metcalf. |
| S. S. Gaelic, N. 31° 12′, W. 153° 50′ | | | 29.87† | 758.7† | 62 | 16.7 | ?? | W | | | 6 | | k | | W | Head sea. | W | D. clouds | Capt. W. H. Kidley |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

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

**NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.**

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 47° 0′, W. 34° 39′ | S72W | | 29.91 | 759.7 | 56.0 | 13.3 | 75 | W | | | 6 | | k | | W | Short heavy | NW;W; WSW | Raining | Capt G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—CONTINUED.

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

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | Character | Direction From— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, N. 41° 40′ 12″, W. 63° 37′ 30″ | | | 30.11† | 764.8† | 44 | 6.7 | 76 | NNE | | | 6 | | 2 | | NE | Mod'ate | NNW | Clear | Captain Sargent. |
| S. S. Ohio, N. 48° 18′, W. 32° 33′ | | | 29.81 | 757.2 | 54 | 12.2 | 87 | WSW | | | 6 | | 8 | | WSW | Mod'ate | WSW | Showery | Captain Morrison. |
| S. S. Pennsylvania, Liverpool | | | 29.45 | 748.0 | 56 | 13.3 | ?? | SW | | | 5 | | 8 | | SW | | | Cloudy | Captain Harris. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. †Aneroid; unreliable, corrected for elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

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

*Aneroid; regulated to standard at Antwerp.

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

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

**MARINE SERIES. (Miscellaneous.)**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller. Providence, R. I. | | | 30.29 | 769.4 | 40 | 4.4 | 82 | N | 8 | 3.6 | | | 0 | | | | | Clear | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.35 | 745.5 | —41 | —40.6 | 88* | Calm | 0 | 0 | | 6c | 0 | SE | | | | Clear | O. T. Sherman. |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Determined by use of hair hygrometer.

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

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

Albert J. Myer

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

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 2, 1878.

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

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

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

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

### ALGERIAN SERIES.

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

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | | | 30.39 | 772.0 | 63.9 | 17.7 | | NE | | | 2 | | 1 | | | 0 | 0 | Very fair | Dr. Ollive. |
| Nemours | | | 30.27 | 768.8 | 71.2 | 21.8 | 46 | SE | | | 1 | | 1 | | | 0 | 0 | Very fair | Michel. |
| Algiers | | | 30.20 | 767.0 | 72.0 | 22.2 | 38 | WSW | | | 1 | | 0 | | | 0 | 0 | Clear | Towlliere. |
| La Calle | | | 30.23 | 767.7 | 66.9 | 19.4 | 75 | NW | | | 1 | | 1 | | | 0 | 0 | Very fair | Boulangeot. |
| Tunis | | | 30.29 | 769.4 | 68.4 | 20.2 | 54 | SE | | | 2 | | 0 | | | 0 | 0 | Clear | Jacques. |
| Sfax | | | 30.34 | 770.5 | 62.6 | 17.0 | | WNW | | | 4 | | 3 | | | 0 | 0 | Pretty fair. | Gau. |
| Saida | | | 30.30 | 769.5 | 77.0 | 25.0 | 92 | SSW | | | 1 | | 2 | | | 0 | 0 | Fair | Herbin. |
| Tebessa | | | 30.33 | 770.3 | | | | Calm | | | 0 | | 0 | | | 0 | 0 | Clear | Bourgeois. |
| Geriville | | | 30.37 | 771.5 | 55.8 | 13.2 | 90 | NW | | | 1 | | 3 | | | 0 | 0 | Pretty fair. | Lemaillot. |
| Laghouat | | | 30.37 | 771.3 | 73.4 | 23.0 | 18 | NE | | | 1 | | 0 | | | 0 | 0 | Clear | Guyot. |
| Biskra | | | 30.31 | 769.8 | | | | | | | | | | | | | | | Chanvaux. |

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

### AUSTRIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.46 | 748.3 | 30.01 | 762.2 | 57.7 | 14.3 | 59 | SW | | | 3 | | 10 | | | 0 | 0 | | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 28.95 | 735.4 | 29.71 | 754.7 | 53.2 | 11.8 | 78 | W | | | 4 | | 10 | | | 0.433 | 11.0 | | Dr. Wierzbiski. |
| Eperies | 28.93 | 734.7 | 29.83 | 757.6 | 39.2 | 4.0 | 95 | SE | | | 2 | | 10 | | | 0.014 | 0.35 | | Julius Mikolik. |
| Gratz | 28.66 | 728.0 | 29.92 | 759.9 | 52.3 | 11.3 | 73 | SE | | | 2 | | 7 | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28.52 | 724.4 | 29.96 | 761.0 | 46.8 | 8.2 | 74 | SE | | | 1 | | 10 | | | 0.098 | 2.50 | Raining | Prof. Reissenberg |
| Kremsmünster | 28.64 | 727.5 | 29.99 | 761.7 | 50.4 | 10.2 | 87 | W | | | 4 | | 10 | | | 0.236 | 6.0 | | Prof. C. Wagner |
| Lemberg | 28.67 | 728.1 | 29.67 | 753.5 | 41.9 | 5.5 | 96 | S | | | 2 | | 10 | | | 0.110 | 2.8 | | Dr. T. Stanecki. |
| Pola | 30.05 | 763.3 | 30.17 | 766.2 | 55.9 | 13.3 | 75 | S | | | 1 | | 10s | | | 0 | 0 | | I.R.Hydrographic Office |
| Szathmar | 29.44 | 747.8 | 29.91 | 759.8 | 45.7 | 7.6 | 94 | SW | | | 2 | | 10 | | | 0.626 | 15.9 | Raining | Johann Tamas, S. J. |
| Szegedin | 29.06 | 753.4 | 29.95 | 760.6 | 53.6 | 12.0 | 82 | S | | | 1 | | 10 | | | 0.008 | 0.20 | | Karl Stancel. |
| Trieste | 30.08 | 764.1 | 30.19 | 766.7 | 50.0 | 10.0 | 95 | Calm | | | 0 | | 10 | | | 0 | 0 | Foggy | P. Busin. |
| Vienna | 29.19 | 741.4 | 29.90 | 759.4 | 56.7 | 13.7 | 61 | W | | | 6 | | 10 | | | 0.472 | 12.0 | | I. R. Central Met. Obs'y. |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.49 | 723.6 | 30.00 | 762.1 | 50.2 | 10.1 | 94 | SW | | | 2 | | 10 | | | 0.160 | 3.8 | | Prof. M. Passau. |
| Brussels | 29.74 | 755.4 | 29.94 | 760.4 | 53.1 | 11.7 | 89 | W | | | 2 | | 10 | | W | 0.020 | 0.5 | | Royal Obs'ervatory. |
| Furnes | 29.06 | 761.0 | 29.98 | 761.6 | 51.4 | 10.8 | 87 | WNW | | | 1 | | 10 | | | 0 | 0 | | M. E. de Cae. |
| Maeseyck | 29.80 | 757.0 | 29.93 | 760.2 | 54.5 | 12.5 | 91 | W | | | 2 | | 8 | | | 0.075 | 1.9 | Raining | M. Pierrot. |

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

## BRITISH SERIES.

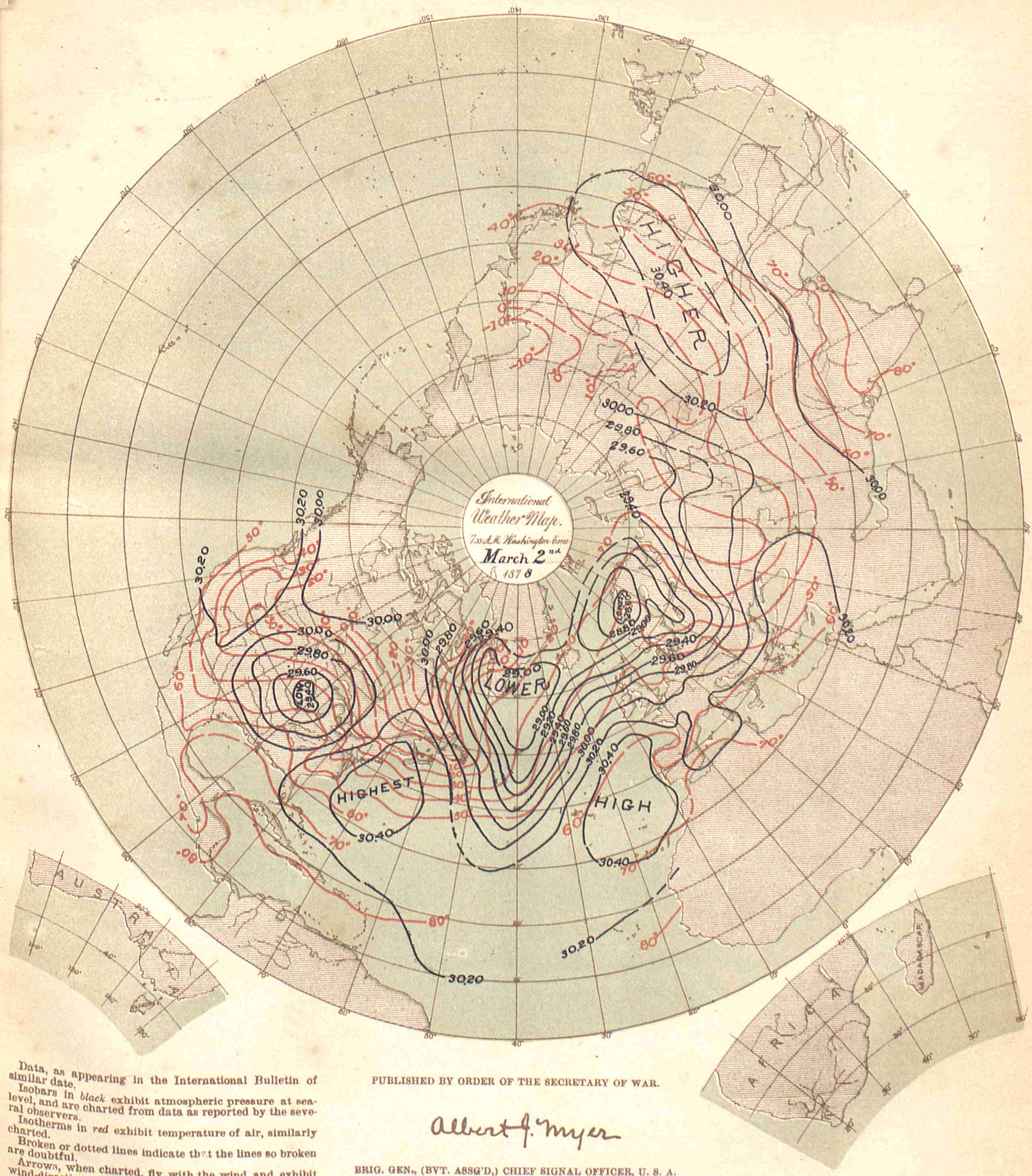
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er. 0—10. | Clouds. Amount. Low'r. 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.60 | 751.8 | 29.70 | 754.4 | 50.4 | 10.2 | ..... | WSW | 14 | 6.3 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | Blue sky..... | W. Boswell. |
| Ardrossan | 29.82 | 757.4 | 29.84 | 757.9 | 51 | 10.6 | ..... | WNW. | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.98 | 761.5 | 51.0 | 10.6 | ..... | W | 16 | 7.2 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | S. Call, for Dr. Robinson |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.98 | 761.5 | 48.3 | 9.1 | ..... | W | 25 | 11.2 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | John Hartnup. |
| Birr Castle, (Parsonstown) | 29.87 | 758.7 | 30.07 | 763.8 | 50.4 | 10.2 | ..... | W | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | J. Dreyer. |
| Bradford, Yorkshire | 29.55 | 750.6 | 29.94 | 760.5 | 51.1 | 10.6 | ..... | W | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0.45 | 11.4 | D. clouds..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 30.07 | 763.8 | 30.10 | 764.5 | 83.0 | 28.3 | ..... | NE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.97 | 761.2 | 54.0 | 12.2 | ..... | NW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | H. Todd. [H.C. |
| Cardington | ..... | ..... | 30.00 | 762.0 | 53.4 | 11.9 | ..... | NW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | John McLaren. |
| Chatham, School M. E | 29.77 | 756 1 | 29.90 | 759.4 | 49.2 | 9.6 | ..... | SW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.80 | 731.5 | 30.30 | 769.6 | 47.0 | 8.3 | ..... | W | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | Fine..... | Alexander Watt. |
| Donaghadee | 29.91 | 759.7 | 29.94 | 760.5 | 51 | 10.6 | ..... | W | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 29.95 | 760.7 | 29.98 | 761.5 | 52 | 11.1 | ..... | NNW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | ½ clouded... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.96 | 761.0 | 51.8 | 11.0 | ..... | NW | 2.4 | 1.1 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | Thomas Mackereth. |
| Falmouth, Observatory | 29.89 | 759 2 | 30.12 | 765.0 | 52.5 | 11.4 | ..... | NW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D clouds... | The Staff. |
| Fort Napier, (Natal) | 27.76 | 705.1 | 29.96 | 761.0 | 84.4 | 29.1 | ..... | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.70 | 754.4 | 29.93 | 760.2 | 89.0 | 31.7 | ..... | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's College | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.19 | 766.8 | 30.25 | 768.3 | 71.2 | 21.8 | ..... | W | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Corpl. C. Aitken, A.H.C. |
| Glasgow, Observatory | 29.61 | 752.1 | 29.82 | 757.4 | 50.0 | 10.0 | ..... | WSW | ..... | ..... | 7 | ..... | 5 | ..... | ..... | ..... | ..... | Blue sky..... | D. G. Maclean. |
| Great Yarmouth | 29.92 | 760.0 | 29.93 | 760.2 | 53 | 11.7 | ..... | NW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.82 | 757.4 | 29.99 | 761.7 | 55.5 | 13.1 | ..... | NNW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff, for G. B. Airy. |
| Guernsey | 29.86 | 758.4 | 30.09 | 764.3 | 53 | 11.7 | ..... | WNW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 30.13 | 765.3 | 54 | 12.2 | ..... | NW | ..... | ..... | 2 | ..... | 2c | ..... | ..... | 0 | 0 | Fine..... | M. P. Moyle. |
| Holyhead | 29.99 | 761.7 | 30.04 | 763.0 | 50 | 10.0 | ..... | WSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Tilston. |
| Jersey | 29.81 | 757.2 | 30.11 | 764.8 | 51.5 | 10.8 | ..... | WNW | ..... | ..... | 4 | ..... | 3 | ..... | ..... | Blank | Blank | D. clouds..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 30.00 | 762.0 | 54.9 | 12.7 | ..... | NW | 10 | 4.5 | ..... | ..... | 7k | ..... | ..... | ..... | ..... | Threatening | The Staff. |
| Kingstown | 29.99 | 761.7 | 30.01 | 762.2 | 51 | 10.6 | ..... | WNW | ..... | ..... | 5 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.99 | 761.7 | 51.1 | 10.6 | ..... | W | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 30.23 | 767.8 | 30.31 | 769.9 | 63.2 | 17.3 | ..... | SW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Sgt. Fred. Travis, A. H. |
| Nairn | 29.55 | 750.6 | 29.65 | 753.1 | 51 | 10.6 | ..... | W | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded... | W. D. Penny. [C. |
| Nassau, (Baharnas) | ..... | ..... | 30.21 | 767.3 | 71.5 | 21.9 | ..... | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | C. S. Duncombe. |
| Nottingham, Observatory | 29.79 | 756.7 | 29.98 | 761.5 | 51.3 | 10.7 | ..... | WNW | ..... | ..... | 2 | ..... | 8k | ..... | WNW | 0.054 | 1.37 | D. clouds..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.47 | 748.5 | 30.00 | 762.0 | 50.1 | 10.1 | ..... | NW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.01 | 762.2 | 54 | 12.2 | ..... | WNW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | Mr. Lucas. |
| Plymouth | 30.01 | 762.2 | 30.08 | 764.0 | 53.8 | 12 1 | ..... | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | John Merrifield. |
| Roche's Point | 30.05 | 763.5 | 30.11 | 764.8 | 51 | 10.6 | ..... | NW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded... | W. Kennedy. |
| Saint Ann's Head | 29.92 | 760.0 | 30.08 | 764.0 | 50 | 10.0 | ..... | W | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 30.53 | 775.4 | 46.2 | 7.9 | ..... | W | 43 | 19.2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Showery..... | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 30.20 | 767.1 | 49.2 | 9.6 | ..... | SW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | Blank | Blank | Blue sky..... | Sergt. W. H. Lyne. |
| Sheffield | 29.68 | 753.9 | 29.96 | 761.0 | 46.0 | 7.8 | ..... | SW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0 | 0 | D. clouds..... | W. P. Cooper. |
| Silloth Rectory | 29.88 | 758.9 | 29.91 | 759.7 | 48.4 | 9.1 | 84 | SW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | D. clouds..... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.56 | 750.8 | 29.96 | 761.0 | 49.1 | 9.5 | ..... | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 29.56 | 750.8 | 48 | 8.9 | ..... | W | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded... | John Smith. |
| Stratfield Turgiss | 29.78 | 756.4 | 30.00 | 762.0 | 53.8 | 12.1 | ..... | NW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | Rev. C. H. Griffith, F.M.S |
| Thurso | ..... | ..... | 29.55 | 750.6 | 49 | 9.4 | ..... | W | ..... | ..... | 5 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 30.14 | 765.5 | 55 | 12.8 | ..... | SW | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 30.12 | 765.0 | 52.6 | 11.4 | ..... | W | 17 | 7.6 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.72 | 754.9 | 79.0 | 26.1 | 66 | NW | ..... | ..... | 2 | ..... | 10k | ..... | ..... | 0 | 0 | Covered ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.73 | 755.1 | 29.91 | 759.8 | 84.0 | 28.9 | 66 | ESE | 18.0 | 8.0 | ..... | 0 | 4 | ..... | ESE | 0.02 | 0.5 | Fine; squally | C. Meldrum. |
| Melbourne, Observatory | 29.99 | 761.7 | 30.08 | 764.0 | 74.4 | 23.6 | 52 | NE | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

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

| MARINE SERIES. VESSELS. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|
| S. S. Algeria, N. 45° 31′ W. 44° 39′ | 15* | NW | Snowing..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon, N. 16° 47′, W. 50° 38′ | 3 | N | Blue sky..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | Capt. C. C. Prehn. |
| S. S. Peruvian, N. 53° 20′, W. 20° 50′ | 6 | WSW | D. clouds..... | [R. Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | Capt. Alex Simpson. |
| Yorkshire, N. 46° 5′ W. 22° 20′ | 3 | SW | D. clouds..... | |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.




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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL, OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL, OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.30 | 668.0 | ..... | ..... | 68.9 | 20.5 | 68 | NE | ..... | ..... | 3 | 2ck | 2s | E | ..... | 0 | 0 | ..... | Federico Maison. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.39 | 746.5 | 29.44 | 747.7 | 47.1 | 8.4 | 77 | WNW | ..... | ..... | 7 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Fanöe | 29.60 | 751.7 | 29.61 | 752.2 | 44.1 | 6.7 | 91 | WNW | ..... | ..... | 6 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | |
| Godthaab, (Greenland) | 28.93 | 734.8 | 28.97 | 735.9 | 20.1 | — 6.6 | 100 | SSE | ..... | ..... | 5 | ..... | 9 | ..... | ..... | ..... | ..... | ..... | |
| Stykkisholm, (Iceland) | 28.97 | 735.7 | 29.01 | 736.8 | 31.5 | — 0.3 | 100 | SE | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | |
| Thorshavn, (Faröe) | 29.19 | 741.3 | 29.22 | 742.2 | 44.2 | 6.8 | 78 | W | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | Snowing. |
| Vestervig | 29.38 | 746.3 | 29.55 | 750.6 | 44.6 | 7.0 | 94 | W | ..... | ..... | 5 | ..... | 4 | ..... | ..... | ..... | ..... | ..... | Raining. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 7 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.55 | 750.5 | 30.10 | 764.5 | 51.8 | 11 | 86 | NW | ..... | ..... | 1 | ..... | 5 | ..... | NW | 0.409 | 10.4 | Cloudy | Collignon, Director. |
| Amiens, Normal School | 29.89 | 759.1 | 30.00 | 761.9 | 55.4 | 13.0 | 81 | SW | ..... | ..... | 3 | ..... | 8 | ..... | W | 0.039 | 1.0 | Very cloudy | Bonvarne, Director. |
| Avignon, Normal School | 30.08 | 764.0 | 30.16 | 766.0 | 62.6 | 17 | 55 | N | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | Light mist | Mr. Giraud, Director |
| Bar-sur-Seine | 29.52 | 749.9 | 30.10 | 764.5 | 52.7 | 11.5 | 92 | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | Inap. | Inap. | Light rain | C. Saillard. |
| Beaumette Obs'y (Angers) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Albert Cheux. |
| Beauvais | ..... | ..... | ..... | ..... | 57.2 | 14 | 74 | WNW | ..... | ..... | 3 | ..... | 10 | ..... | W | 0.012 | 0.30 | Covered | Normal School. |
| Besançon | 29.26 | 743.3 | 30.15 | 765.9 | 59.9 | 15.5 | 69 | SW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0.091 | 2.3 | Cloudy | Normal School. |
| Bourg-en-Bresse | 29.28 | 743.8 | 30.21 | 767.2 | 59.4 | 15.2 | 68 | S | ..... | ..... | 4 | ..... | 1km | ..... | S | 0 | 0 | ..... | Normal School. |
| Bourges, Normal School | 29.64 | 752.8 | 30.24 | 768.0 | 52.3 | 11.3 | 71 | W | ..... | ..... | 2 | ..... | 8 | ..... | ESE | 0.28 | 7. | Very cloudy | A. Wagner, Director. |
| Brest, Naval Observatory | 29.86 | 758.5 | 30.08 | 764.1 | 52.0 | 11.1 | 86 | NW | ..... | ..... | 2 | ..... | 3k | ..... | NW | 0.089 | 2.25 | ..... | The Staff. |
| Carcassonne, Normal School | 29.82 | 757.4 | 30.24 | 768.1 | 54.5 | 12.5 | 81 | N | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Vateau, Director. |
| Caen | 30.02 | 762.4 | 30.09 | 764.3 | 55.8 | 13.2 | 79 | W | ..... | ..... | 2 | ..... | 5 | ..... | SW | 0.020 | 0.5 | Cloudy | Normal School. |
| Chartres, Normal School | 29.48 | 748.9 | 30.06 | 763.4 | 54.9 | 12.7 | 90 | W | ..... | ..... | 1 | ..... | 7 | ..... | W | 0 | 0 | ..... | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.74 | 755.3 | 30.06 | 763.5 | 53.2 | 11.8 | 90 | SW | ..... | ..... | 3 | ..... | 10km | ..... | ..... | 0 | 0 | Covered | I. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.79 | 731.2 | 30.13 | 765.4 | 59.4 | 15.2 | 58 | S | ..... | ..... | 2 | ..... | 8 | ..... | W | 0 | 0 | Very cloudy | Alluard, Director. |
| Commercy, Normal School | 29.24 | 742.8 | 30.13 | 765.4 | 51.4 | 10.8 | 80 | WSW | ..... | ..... | 6 | ..... | 10 | ..... | W | 0.098 | 2.5 | Covered | Dr. Goulet, Director. |
| Commune de Gréasque* | 29.05 | 737.8 | 30.19 | 766.8 | 66.4 | 19.1 | 43 | NW | ..... | ..... | 2 | ..... | 8 | ..... | NW | 0 | 0 | ¾ covered | M. Kina. |
| Grenoble | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| La Roche-sur-Yon, N. School | 29.92 | 760.0 | 30.14 | 765.5 | 54.3 | 12.4 | 86 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.008 | 0.2 | Covered | Mouillot, Director. |
| Le Mans, Normal School | 29.78 | 756.5 | 30.10 | 764.4 | 54.0 | 12.2 | 90 | WNW | ..... | ..... | 2 | ..... | 8 | ..... | NW | 0.049 | 1.25 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.22 | 742.2 | 30.13 | 765.4 | 59.0 | 15 | 68 | W | ..... | ..... | 2 | ..... | 10 | ..... | W | 0 | 0 | Covered | Voudez, Director. |
| Lorient, Naval Observatory | 30.05 | 763.2 | 30.15 | 765.7 | 57.2 | 14.0 | 97 | NW | ..... | ..... | 2 | ..... | 5 | ..... | NW | 0.118 | 3.0 | ½ covered | T. Carré, Director. |
| Mâcon, Normal School | 29.62 | 752.3 | 30.28 | 769.0 | 55.9 | 13.3 | 71 | Calm | ..... | ..... | 0 | ..... | 1 | ..... | NNE | 0 | 0 | Clear | M. Marchal, Director. |
| Metz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. A. Schuster, Dir. |
| Mirecourt | 29.04 | 737.7 | 30.10 | 764.4 | 51.8 | 11 | 85 | SW | ..... | ..... | 4 | ..... | 10 | ..... | N | 0 | 0 | Covered | Normal School. |
| Nismes, Normal School | 29.93 | 760.3 | 30.13 | 765.4 | 68.7 | 20.4 | 58 | NW | ..... | ..... | 2 | ..... | 2 | ..... | NW | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Orleans, Normal School | 29.67 | 753.5 | 30.05 | 763.3 | 53.6 | 12 | 95 | ..... | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Bernard, Director. |
| Paris, Observatory | 29.79 | 756.7 | 30.03 | 762.8 | 56.1 | 13.4 | 87 | SW | ..... | ..... | 1 | ..... | 10 | ..... | WSW | 0.004 | 0.10 | Rainy | National Observatory. |
| Privas | 29.11 | 739.4 | 30.19 | 766.7 | 55.4 | 13 | 59 | W | ..... | ..... | 1 | ..... | 5 | ..... | W | 0 | 0 | Cloudy | Normal School |
| Rochefort, Naval Obs'y | 30.14 | 765.5 | 30.17 | 766.3 | 53.6 | 12.0 | 98 | SW | ..... | ..... | 5 | ..... | 10 | ..... | SW | ..... | ..... | Raining | Lt. Decante, Director. |
| Rouen, Normal School | 29.94 | 760.5 | 30.03 | 762.7 | 54.0 | 12.2 | 83 | W | ..... | ..... | 4 | ..... | 10 | ..... | W | 0.036 | 0.9 | Covered | F. Lucard, Director. |
| Saint Malo (Port) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. H. Hercouet. |
| Tarbes, Normal School | 29.11 | 739.4 | 30.19 | 766.8 | 59.0 | 15 | 48 | SW | ..... | ..... | 2 | ..... | 5 | ..... | SW | 0 | 0 | Cloudy | T. Hugues, Director. |
| Villefranche | 29.53 | 750.1 | 30.25 | 768.4 | 63.5 | 17.5 | 98 | NNW | ..... | ..... | 1 | ..... | 8 | ..... | NE | 0 | 0 | Very cloudy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.97 | 761.1 | 29.99 | 761.8 | 81.0 | 27.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Lyons | ..... | ..... | 30.19 | 766.9 | 59.7 | 15.4 | ..... | ..... | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Covered | L'Abbé Marchési. |
| Marseilles, Observatory | ..... | ..... | 30.15 | 765.7 | 60.6 | 15.9 | 73 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Rainy | M. Jeys. |
| Mont-Louis | 25.99 | 694.9 | 30.31 | 769.8 | 52.7 | 11.5 | 32 | SW | 13.0 | 5.83 | ..... | ..... | 4 | ..... | SW | 0 | 0 | ..... | The Staff. |
| Nice | 30.08 | 764.1 | 30.16 | 766.1 | 62.2 | 16.8 | 73 | S | ..... | ..... | 3 | ..... | 10 | ..... | SE | 0 | 0 | Covered | Mr. Falguère. |
| Paris, Montsouris Obs'y | 29.74 | 755.5 | 30.02 | 762.5 | 55 4 | 13.0 | 91 | SW | ..... | ..... | 4 | ..... | 10 | ..... | WSW | Inap. | Inap. | Light rain | Dr. A. Niepce. |
| Perpignan | ..... | ..... | 30.14 | 765.6 | 63.1 | 17.3 | 68 | E | 5.6 | 2.50 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Marié Davy, Director. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dr. Fines. |
| Pic du Midi, (Plantade,) H. P. | 22.65 | 575.4 | ..... | ..... | 50.0 | 10.0 | ..... | W | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0.067 | 1.7 | Snowy | M. Baylac. |
| Saint Maur, (near Paris) | 29.87 | 758.0 | 30.03 | 762.8 | 54.9 | 12.7 | 92 | SSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.118 | 3.0 | Raining | Gen'l de Nansouty |
| Toulouse, Observatory | 29.49 | 749.0 | 30.22 | 767.5 | 56.3 | 13.5 | 76 | NW | ..... | ..... | 1 | ..... | 4 | ..... | ..... | 0.016 | 0.40 | Foggy | E. Renou. |
| Tours | 29.89 | 759.1 | 30.08 | 764.1 | 56.1 | 13.4 | 89 | WSW | ..... | ..... | 3 | ..... | 10 | ..... | W | 0 | 0 | ..... | The Staff. |
| Versailles, (near Paris) | ..... | ..... | 30.03 | 762.8 | 56.5 | 13.6 | 84 | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.008 | 0.21 | Covered | C. Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.46 | 773.6 | 30.48 | 774.2 | 39.2 | 4.0 | 82 | NE | 5.6 | 2.5 | ..... | ..... | 4k | ..... | ..... | 0 | 0 | Cloudy | Dr. A. Bérigny. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Marc Dechevrens, S. J. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 29.53 | 750.0 | 29.70 | 754.4 | 54.5 | 12.5 | 77 | NW | | | 4 | | 8 | | | 0.666 | 16.91 | | Prof. Arndt. |
| Breslau | 29.14 | 740.2 | 29.67 | 753.5 | 58.1 | 14.5 | 66 | W | | | 8 | | 9 | | | 0.499 | 12.68 | Raining | Royal University Obs'y |
| Carlsruhe | 29.59 | 751.5 | 30.02 | 762.4 | 52.9 | 11.6 | 92 | SW | | | 4 | | 10 | | | 0.134 | 3.4 | | Albert Senz. |
| Cassel | 29.34 | 745.3 | 29.95 | 760.7 | 54.7 | 12.6 | 76 | W | | | 6 | | 10 | W | | 0.468 | 11.88 | | Dr. H. Möhl. |
| Crefeld | 29.72 | 755.0 | 29.89 | 759.1 | 53.2 | 11.8 | 92 | NW | | | 5 | | 10 | | | 0.35 | 9. | Raining | Director Lose. |
| Emden | 29.87 | 758.8 | 29.87 | 758.7 | 48.4 | 9.1 | 82 | NW | | | 3 | | 0 | | | 0.63 | 16. | | Prof. Prestel. |
| Frankfort on the Main | 29.73 | 755.2 | 30.10 | 764.5 | 55.4 | 13 | 78 | SW | | | 2 | | 9 | | | 0.189 | 4.8 | Raining | Physical Society. |
| Friedrichshafen | 28.67 | 728.2 | 30.10 | 764.5 | 56.8 | 13.8 | 60 | NW | | | 4 | | 8 | WNW | | 0.555 | 14.1 | Raining | M. Wilhelm. |
| Hamburg | 29.66 | 753.4 | 29.73 | 755.2 | 50.7 | 10.4 | 81 | NW | | | 6 | | 3k | NW | | 0.823 | 20.9 | Clear | Captain F. Hegemann. |
| Kiel | 29.65 | 753.1 | 29.67 | 753.5 | 50.0 | 10.0 | 74 | W | | | 6 | | 5 | | | 0.514 | 13.04 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.18 | 741.2 | 29.26 | 743.2 | 43.2 | 6.2 | 81 | W | | | | | | | | 0.417 | 10.61 | Cloudy | Prof. E. Luther. |
| Köslin | | | 29.45 | 747.9 | 43.7 | 6.5 | | W | | | 5 | | 4 | | | 0.732 | 18.6 | | H. Müller. |
| Leipsic, Observatory | 29.37 | 746.1 | 29.79 | 756.7 | 57 0 | 13.9 | 76 | W | | | 5 | | 9 | W | | 0.520 | 13.2 | Sprinkling | Prof. Bruhns. |
| Memel, Naval School | 29.09 | 738.9 | 29.13 | 740.0 | 38.3 | 3.5 | 93 | SW | | | 6 | | 10ks | | | | | Foggy | Reinbrech von Skalweit. |
| Neufahrwasser | 29.30 | 744.2 | 29.32 | 744.6 | 47.8 | 8.8 | 74 | W | | | 6 | | 10 | | | 0.177 | 4.5 | | A. Lothes. |
| Posen | 29.28 | 743.7 | 29.57 | 751.1 | 49.3 | 9.6 | 100 | NW | | | 8 | | 10 | | | 0.547 | 13.91 | Covered | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.54 | 750.2 | 30.09 | 764.3 | 54.3 | 12.4 | 87 | WSW | | | 3 | | 10 | WSW | | 0.072 | 1.83 | | Dr. Schur. |
| Stuttgart | 29.07 | 738.3 | 30.01 | 762.2 | 52.9 | 11.6 | 89 | W | | | 5 | | 10 | | | 0.303 | 7.7 | Raining | Prof. Schoder. |
| Treves, (Trier) | 29.37 | 746.0 | 29.89 | 759.2 | 54.7 | 12.6 | 87 | W | | | 7 | | 10 | | | 0.081 | 2.07 | Foggy | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.49 | 723.7 | 30.00 | 762.1 | 48.9 | 9.4 | 83 | W | 11 | 5 | | | 10 | | W | 0.197 | 5.0 | Covered | Dr. Von Bebber. |
| Wustrow, Naval School | 30.44? | 773.2? | 30.48? | 774.2? | 43.0 | 6.1 | 96 | WSW | | | 2 | | 10 | | | 0.209 | 5.30 | Foggy | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Königsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.89 | 759.1 | 30.28 | 769.1 | 57.9 | 14.4 | | SW | | | 1.0 | | | | | | | Clear | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.85 | 758.1 | 29.90 | 759.4 | 71.8 | 22.1 | 65 | WSW | 34.0? | 15.2? | | | 8 | | | 0 | 0 | D. clouds | |
| Deesa | 29.43 | 747.4 | 29.90 | 759.6 | 81.7 | 27.6 | 14 | W | | | | | 3 | W | | 0 | 0 | D. clouds | |
| Bombay | 29.88 | 758.9 | 29.92 | 759.9 | 72.5 | 25.8 | 61 | WNW | 10.0 | 4.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.82 | 706.5 | 29.78 | 756.3 | 89.0 | 31.7 | 30 | NW | | | | | 0 | | | 0 | 0 | Dust-whirl | |
| Lahore | 29.10 | 739.1 | 29.86 | 758.4 | 69.1 | 20.6 | 42 | E | 0.7 | 0.3 | | | 7 | | | 0 | 0 | Cloudy | |
| Belgaum | 27.36 | 694.8 | 29.86 | 758.6 | 82.6 | 28.1 | 42 | W | 9.0 | 4.0 | | | 0 | | | 0 | 0 | Misty | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.95 | 735.4 | 29.87 | 758.7 | 69.8 | 21.0 | 44 | Calm | 3.5 | 1.6 | | | | | | 0 | 0 | | |
| Agra | 29.31 | 744.4 | 29.88 | 759.0 | 74.7 | 23.7 | 30 | W | | | | | | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.84 | 732.5 | 29.88 | 759.0 | 81.6 | 27.6 | 17 | Calm | 2.3 | 1.0 | | | | | | 0 | 0 | Blue sky | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.52 | 749.8 | 29.90 | 759.5 | 72.3 | 22.4 | 40 | NW | 3.8 | 1.7 | | | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.60 | 751.8 | 29.92 | 759.8 | 68.6 | 20.3 | 35 | Calm | 1.6 | 0.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.74 | 755.5 | 29.93 | 760.2 | 73.3 | 22.9 | 33 | W | 3.6 | 1.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.88 | 708.2 | 29.94 | 760.6 | 66.3 | 19.1 | 23 | NW | 6.9 | 3.1 | | | 0 | | | 0 | 0 | Misty | |
| Cuttack | 29.81 | 757.1 | 29.89 | 759.2 | 80.0 | 26.7 | 31 | SSE | 1.6 | 0.7 | | | 0 | | | 0 | 0 | Misty | |
| Calcutta (Alipore) | 29.91 | 759.8 | 29.94 | 760.4 | 69.3 | 20.7 | 48 | W | 2.0 | 0.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.54 | 750.3 | 29.94 | 760.5 | 68.2 | 20.1 | 35 | W | 1.3 | 0.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.84 | 757.9 | 29.93 | 760.3 | 74.8 | 23.8 | 36 | NW | 5.3 | 2.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Sibsagar | 29.61 | 752.1 | 29.96 | 760.9 | 64.5 | 18.1 | 75 | NE | 2.2 | 1.0 | | | 5 | | | 0 | 0 | D. clouds | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.54 | 725.0 | 29.93 | 760.1 | 75.0 | 23.9 | 23 | NE | 6.4 | 2.9 | | | | | | 0 | 0 | Blue sky | |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.8 meters; Bangalore, 2,969 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.72 | 754.9 | 30.13 | 765.4 | 50.2 | 10.1 | 78 | W | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 30.02 | 762.4 | 30.13 | 765.2 | 53.6 | 12.0 | 69 | NE | 4.3 | 1.9 | ..... | ..... | 10 | SW | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.95 | 760.6 | 30.14 | 765.5 | 50.0 | 10.0 | 79 | N | 1.3 | 0.6 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.81 | 731.8 | 30.13 | 765.3 | 55.4 | 13.0 | 73 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Prof. Trionfini Carlo. |
| Moncalieri | 29.24 | 742.6 | 30.15 | 765.7 | 53.4 | 11.9 | 74 | NNE | 1.8 | 0.8 | ..... | ..... | 9 | SE | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Mondovi | 28.21 | 716.6 | 30.13 | 765.3 | 52.5 | 11.4 | 72 | NW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Porto Maurizio | 29.96 | 761 0 | 30.19 | 766.7 | 55.8 | 13.2 | 85 | E | ..... | ..... | 2 | ..... | 10 | NE | ..... | 0.016 | 0.4 | ..... | Prof. D. C. Bruno. |
| Genoa | 30.03 | 762.7 | 30.20 | 767.1 | 54.1 | 12.3 | 89 | E | 4.9 | 2.2 | ..... | ..... | 10 | S | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Parma | 29.89 | 759.3 | 30.21 | 767.4 | 57.2 | 14.0 | 59 | NNE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Florence | 29.96 | 760.9 | 30.22 | 767.5 | 54.5 | 12.5 | 81 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Leghorn | 30.14 | 765.5 | 30.23 | 767.7 | 57.7 | 14.3 | 82 | SW | 7.4 | 3.3 | ..... | ..... | 10 | SW | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Pesaro | 30.12 | 765.0 | 30.17 | 766.3 | 60.4 | 15.8 | 81 | N | 0 | 0 | ..... | ..... | 10 | NW | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Urbino | 28.61 | 726.7 | 30.18 | 766.5 | 53.6 | 12.0 | 63 | SW | ..... | ..... | 6 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Grosseto | 30.13 | 765.4 | 30.25 | 768.3 | 57.6 | 14.2 | 77 | SSE | ..... | ..... | 4 | ..... | 8 | S | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Rome | 30.08 | 763.9 | 30.25 | 768.4 | 59.7 | 15.4 | 66 | SW | 4.3 | 1.9 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Naples, O. U. | 30.11 | 764.7 | 30.31 | 769.9 | 60.8 | 16.0 | 69 | SSW | ..... | ..... | 2 | ..... | 9 | NW | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrari. |
| Lecce | ..... | ..... | ..... | ..... | 61.2 | 16.2 | 61 | SW | 11.2 | 5.0 | ..... | ..... | 2 | S | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Cagliari | 29.98 | 761.6 | 30.18 | 766.5 | 59.9 | 15.5 | 78 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 29.39 | 746.4 | 30.28 | 769.1 | 63.0 | 17.2 | 72 | SE | 3.8 | 1.7 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.59 | 751.7 | 30.24 | 768.2 | 58.1 | 14.5 | 67 | E | 3.1 | 1.4 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Syracuse | 30.23 | 767.9 | 30.31 | 769.8 | 58 8 | 14.9 | 75 | SW | ..... | ..... | 1 | ..... | 3 | W | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.76 | 755.8 | 30.31 | 769.9 | 56.3 | 13.5 | 67 | NE | 0.7 | 0.3 | ..... | ..... | 9 | E | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
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| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.1 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 30.10 | 764.5 | 30.18 | 766.6 | 38.9 | 3.8 | 92 | NNW | 4.4 | 2.0 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | The Observatory. |
| Tokei (Yeddo) University | 30.06 | 763.5 | 30.16 | 766 0 | 37.5 | 3.1 | 49 | NNW | 5 | 2.2 | ..... | ..... | 3ks | ..... | ..... | 0 | 0 | Fair | Prof. P. V. Veeder. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | 25.16 | 639.3 | 29.97 | 761.2 | 64.4 | 18.0 | 50 | N | 0.9 | 0.4 | ..... | 8c | 0 | N | ..... | 0 | 0 | Cloudy | L. Castillo, A. E. |
| Guadalajara | 25.16 | 639.1 | 30.26 | 768.5 | 42.8 | 6.0 | 52 | NE | 0.9 | 0.4 | ..... | 0 | 1 | ..... | NE | 0 | 0 | Clear | Prof. L. Perez. |
| Guanajuato | 23.76 | 603.6 | 30.02 | 762.6 | 59.7 | 15.4 | 26 | W | ..... | ..... | ..... | 6 | 0 | SW | ..... | 0 | 0 | ½ cloudy | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 63.6 | 12.0 | 38 | Calm | 0 | 0 | ..... | 5ck | 1ks | SW | SW | 0 | 0 | ½ cloudy | Prof. M. Leal. |
| Mexico | 23.17 | 588.5 | 30.25 | 768.3 | 55.4 | 13.0 | 44 | Calm | 0 | 0 | ..... | 0 | 7ks | ..... | W | 0 | 0 | Light haze | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalits) | ..... | ..... | ..... | ..... | 36.9 | 2.7 | 32 | W | 0.9 | 0.4 | ..... | 2c | 0 | SW | ..... | 0 | 0 | Clear | M. Y. de Leon, M. E. |
| Puebla | 23.46 | 592.8 | 30.20 | 767.2 | 50.7 | 10.4 | 70 | NE | 4.5 | 2.0 | ..... | 6c | 3s | ..... | ..... | 0 | 0 | Very cloudy | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 29.97 | 761.3 | 29.99 | 761.6 | 67.1 | 19.5 | 91 | N | 2.0 | 0.9 | ..... | 5c | 5k | S | S | 0 | 0 | Covered | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 30.01 | 762.3 | 30.04 | 763.0 | 72.5 | 22.5 | 85 | N | 12.9 | 5.8 | ..... | 2c | 3ks | S | ..... | 0 | 0 | Foggy | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 50.5 | 10.3 | 44 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.37 | 593.5 | 30.16 | 766.1 | 50.0 | 10.0 | 44 | NNE | ..... | ..... | ..... | 2c | 0 | N | ..... | ..... | ..... | Clear | P. Spina. [M. M. D. D. |
| Morelia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Tena, F. L. Param |

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known The data are published as given.

## NETHERLANDS' SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.97 | 761.1 | 29.97 | 761.1 | 50.0 | 10.0 | ..... | W | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.579 | 14.7 | ..... | |
| Groningen | 29.79 | 756.7 | 29.85 | 758.1 | 50.4 | 10.2 | ..... | NW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.322 | 8.2 | ..... | |
| Helder | 29.84 | 758.0 | 29.84 | 758.0 | 46.6 | 8.1 | ..... | WSW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 29.94 | 760.4 | 29.94 | 760.4 | 50.7 | 10.4 | 83 | WNW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.87 | 758.7 | 29.92 | 759.9 | 54.1 | 12.3 | 73 | WNW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0.220 | 5.6 | Cloudy | H. v d Brink. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

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

| STATIONS | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.31 | 744.5 | 29.37 | 745.9 | 46.0 | 7.8 | 75 | WSW | 21.5 | 9.6 | ..... | ..... | 3 | ..... | ..... | 0.181 | 4.6 | ..... | |
| Bröno | 29.62 | 752.4 | 29.66 | 753.4 | 41.0 | 5.0 | 84 | SSW | 27 | 12 | ..... | 10 | ..... | ..... | ..... | 0.197 | 5.0 | ..... | |
| Christiania | 29.03 | 737.3 | 29.17 | 741.0 | 38.8 | 3.8 | 93 | WNW | 2 | 1 | ..... | 5 | ..... | ..... | ..... | 0.256 | 6.5 | ..... | |
| Tromsö | 28.68 | 728.5 | 28.72 | 729.6 | 30.6 | — 0.8 | 92 | NE | 7 | 3 | ..... | 10 | ..... | ..... | ..... | 0.567 | 14.4 | Snowing | |

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

## PORTUGUESE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.12 | 765.1 | 30.32 | 770.0 | 59.4 | 15.2 | 82 | WSW | 8.1 | 3.6 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.27 | 743.5 | 30.30 | 769.6 | 61.5 | 16.4 | 64 | SE | 3.1 | 1.4 | ..... | 4 | SW | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.32 | 770.0 | 30.40 | 772.2 | 66.2 | 19.0 | 65 | WSW | 4.9 | 2.2 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.98 | 761.6 | 30.34 | 770.7 | 60.3 | 15.7 | 71 | N | 8.7 | 3.9 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.32 | 770.2 | 30.40 | 772.2 | 62.6 | 17.0 | 70 | S | 16.1 | 7.2 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |

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

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell: Height scale 0–9 | Sea or swell: Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd't |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello, Mozambique, Mozambique | 29.71 | 754.6 | 29.71 | 754.7 | 82.4 | 28.0 | ..... | E | ..... | ..... | 3 | ..... | 10 | ..... | E | 1 | ..... | Squally | |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. R. R. Bastos, Com'd't. |
| Sado, River Bolola, Senegambia | 30.02* | 762.5* | 30.03* | 762.8* | 87.4 | 30.8 | ..... | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 1 | ..... | Blue sky | A. J. de Mattos, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.83 | 757.6 | 29.83 | 757.7 | 86.0 | 30.0 | ..... | WNW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky | A. N. P. Sampaio, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. Texeira da Silva, Com'd't. |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreira, dos Amas, Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.04 | 737.6 | 29.46 | 748.2 | 52.5 | 11.4 | 87 | WSW | 27 | 12 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Raining | Astronomical Obs. |
| Wilna | 28.87 | 733.3 | 29.29 | 744.0 | 37.9 | 3.3 | 92 | S | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Astronomical Obs. |
| Dorpat | 28.98 | 736.2 | 29.23 | 742.5 | 32.7 | 0.4 | 80 | SE | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.34 | 745.1 | 29.35 | 745.5 | 30.6 | — 0.8 | 73 | SSE | 20 | 9 | ..... | ..... | 8n;s | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 28.85 | 732.9 | 29.18 | 741.2 | 31.8 | — 0.1 | 94 | SW | 22 | 10 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Ch. Forsten. |
| Kieff | 29.12 | 739.7 | 29.78 | 756.5 | 34.9 | 1.6 | 80 | S | 16 | 7 | ..... | ..... | 8ks;ck | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Nikolaiev | 30.03 | 762.7 | 30.10 | 764.5 | 35.4 | 1.9 | 80 | SW | 22 | 10 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Kertch | 30.30 | 769.7 | 30.32 | 770.2 | 33.8 | 1.0 | 79 | SSW | 9 | 4 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Moscow | 29.29 | 744.0 | 29.87 | 758.8 | 21.9 | — 5.6 | 83 | S | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.96 | 761.0 | 30.18 | 766.5 | 27.5 | — 2.5 | 56 | SW | 9 | 4 | ..... | ..... | 1c | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Archangel | 29.21 | 741.9 | 29.23 | 742.4 | 32.0 | 0.0 | 96 | S | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Tiflis | 28.82 | 731.9 | 30.30 | 769.6 | 36.7 | 2.6 | 34 | NNW | 22 | 10 | ..... | ..... | 2k | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Astrakhan | 30.26 | 768.5 | 30.17 | 766.4 | 19.0 | — 7.2 | 78 | WNW | 7 | 3 | ..... | ..... | 8ks | ..... | ..... | Blank | Blank | ..... | Physical Cabinet. |
| Kasan | 29.65 | 753.2 | 29.94 | 760.5 | 18.3 | — 7.6 | 61 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Ekaterinburg | 28.90 | 734.1 | 29.89 | 759.2 | 26.4 | — 3.1 | 61 | NE | 4 | 2 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | |
| Nukuss | 29.89 | 759.2 | 30.13 | 765.4 | 29.8 | — 1.2 | 61 | WNW | 20 | 9 | ..... | ..... | 4k | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.37 | 720.6 | 30.11 | 764.8 | 45.7 | 7.6 | 94 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Barnaul | 29.59 | 751.6 | 30.16 | 766.0 | 14.2 | — 9.9 | 80 | Calm | 0 | 0 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Yeniseisk | 29.82 | 757.4 | 30.16 | 766.1 | 24.6 | — 4.1 | 85 | SW | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Marks. |
| Krotkowo* | 29.43 | 747.6 | 29.94 | 760.5 | 13.8 | —10.1 | 70 | NNW | 2 | 1 | ..... | ..... | 9ks | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 30.24 | 768.2 | 30.39 | 771.8 | 37.4 | 3.0 | 42 | SW | 13 | 6 | ..... | ..... | 2cs | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Nertchinsk | 27.83 | 706.9 | 30.02 | 762.6 | 15.6 | — 9.1 | 60 | NW | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | —11.2 | —24.0 | ..... | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 30.05 | 762.2 | 30.15 | 765.9 | 63.9 | 17.7 | 60 | SSW | 0.5 | 0.22 | ..... | 7 | 2 | W | ..... | 0 | 0 | Solar halo | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.18 | 766.5 | 30.23 | 767.9 | 63.7 | 17.6 | 73 | W | 1.4 | 0.61 | ..... | 2 | 6 | W | ..... | 0 | 0 | Almost cov. | Prof. Manuel de Naveran. |
| Burgos, Met. Obs'y | 27.28 | 692.8 | ..... | ..... | 55.4 | 13.0 | 79 | S | 8.5 | 3.78 | ..... | 0 | 8 | ..... | ..... | 0.079 | 2.0 | Almost cov. | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 28.04 | 712.2 | 30.28 | 769.2 | 57.9 | 14.4 | 63 | SE | 3.0 | 1.33 | ..... | 0 | 10 | ..... | ..... | 0 | 0 | Covered | The Staff. |
| Murcia, Met. Obs'y | 29.98 | 761.6 | 30.13 | 765.3 | 81.1 | 27.3 | 63 | SW | 1.6 | 0.72 | ..... | 4 | 5 | NNE | ..... | 0 | 0 | Almost cov. | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.50 | 749.3 | 30.25 | 768.3 | 54.9 | 12.7 | 88 | NW | 10.6 | 4.72 | ..... | ..... | 9 | ..... | ..... | 0.673 | 17.1 | Rainy | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 30.10 | 764.6 | 30.17 | 766.3 | 70.2 | 21.2 | 79 | ESE | 12.8 | 5.7 | ..... | 7ck | 0 | SW | ..... | 0 | 0 | Fair | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 30.23 | 767.7 | 30.33 | 770.2 | 64.2 | 17.9 | 79 | SSW | 3.3 | 1.5 | ..... | 4 | 6 | S | S | 0.001 | 0.0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W.I. | 30.07 | 763.7 | 30.16 | 766.0 | 77.4 | 25.2 | 95 | NE | 9.6 | 4.27 | ..... | 6kn | 4kn | NE | NE | 1.437 | 36.50 | Raining | Leonardo de Tejeda, Chief of Engineers. |

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

## SWEDISH SERIES.



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

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-10. | Clouds. Amount. Up'er 0-10. | Clouds. Amount. Low'r 0-10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 28.84 | 732.6 | 28.88 | 733.6 | 32.7 | 0.4 | ..... | SW | ..... | ..... | 6 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 28.97 | 735.8 | 29.02 | 737.1 | 33.8 | 1.0 | 100 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 28.95 | 735.3 | 29.00 | 736.6 | 41.4 | 5.2 | 75 | SSW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | Foggy ..... | |
| Stockholm | 28.87 | 733.3 | 29.05 | 737.9 | 32.7 | 0.4 | 96 | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.008 | 0.2 | ..... | |
| Wisby | 28.90 | 734.1 | 28.96 | 735.6 | 37.0 | 2.8 | 96 | NW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.091 | 2.3 | ..... | |
| Sub-Series. Upsala | 29.00 | 736.5 | 29.07 | 738.4 | 35.8 | 2.1 | 98 | NNW | 4.0 | 1.8 | ..... | ..... | 10 | ..... | ..... | 0.211 | 5.35 | Rain and fog | Dr. Hildebrandsson. |

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

## SWISS SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.71 | 729.2 | 30.12 | 765.1 | 57.9 | 14.4 | 54 | NNE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | Vapory..... | The Observatory. |
| Zurich | 28.48 | 723.3 | 30.10 | 764.4 | 60.4 | 15.8 | 49 | W | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0.008 | 0.2 | Bright..... | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +3.8 mm.; Thermometer, +8.5 cent.; Relative Humidity, —11 per cent.

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

## TURKISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.25 | 768.3 | 45.0 | 7.2 | 60 | SSW | 7 | 3.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanides. |
| Valona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Varna | ..... | ..... | 30.28 | 769.1 | 60.1 | 15.6 | ..... | SW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | A. Bertrand. |
| Sub-Series. Beirut, (Syria.) Lee Obs'y | 30.08 | 764.0 | 30.20 | 767.0 | 59.0 | 15.0 | 56 | N | ..... | ..... | 3 | ..... | 8c | ..... | ..... | 0 | 0 | D. clouds..... | Imperial Observatory. Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.27 | 768.8 | 30.34 | 770.6 | 9.5 | —12.5 | 59 | NW | 2 | 0.9 | ..... | 3clk | 0 | ..... | ..... | 0 | 0 | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.90 | 759.4 | 30.23 | 767.8 | 19 | — 7.2 | ..... | E | 1 | 0.4 | ..... | 8c | 2ks | ..... | E | 0 | 0 | Fair ..... | W. R. Bigg. |
| *Chatham, N B | 30.30 | 769.6 | 30.37 | 771.4 | 7 | —13.9 | 76 | SW | 2 | 0.9 | ..... | 8k | 2ks | W | W | 0 | 0 | Fair ..... | G. A. Blair. |
| Charlottetown, P. E. Island. | 30.27 | 768.8 | 30.32 | 770.1 | 12 | —11.1 | 66 | NW | 10 | 4.5 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Fair ..... | H. J. Cundall, C. E. |
| Cornwall, Ontario | 30.30 | 769.6 | 30.51 | 774.9 | 12.4 | —10.9 | 90 | NE | ..... | ..... | 1 | ..... | 9s | ..... | ..... | 0 | 0 | Cloudy ..... | James Smith, M. A. |
| Dalhousie, N. B | 30.34 | 770.6 | 30.37 | 771.4 | 5.0 | —15.0 | 75 | W | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | Bright..... | H. A. Johnson. |
| Esquimault, B. C | 30.18 | 766.6 | 30.23 | 767.8 | 42.1 | 5.6 | 99 | N | ..... | ..... | ..... | ..... | 10s | ..... | ..... | 0.01 | 0.3 | Cloudy ..... | W. H. Bevis. |
| *Father Point, Quebec | 30.34 | 770.6 | 30.36 | 771.1 | 5 | —15.0 | 73 | S | 4 | 1.8 | ..... | 5ck | 5s | NW | NW | 0 | 0 | Fair ..... | J. McWilliams. |
| Fredericton, N. B | 30.36 | 771.1 | 30.43 | 772.9 | 7.1 | —13.8 | 75 | W | 1 | 0.4 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy..... | Prof. Harrison. |
| *Fort Garry Manitoba | 29.66 | 758.1 | 29.93 | 760.2 | 21 | — 6.1 | 94 | N | 8 | 3.6 | ..... | 2k | 5n | N | N | 0 | 0 | Clearing..... | James Stewart. |
| Goderich, Ontario | 28.80 | 731.5 | 29.93 | 760.2 | 35 | 1.7 | 90 | E | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0.44 | 11.2 | Cloudy..... | H. J. Strang, M. A. |
| Granton, Ontario | 30.21 | 767.3 | 30.35 | 770.9 | 18 | — 7.8 | 76 | W | 11 | 4.9 | ..... | 2cs | 2ks | ..... | NW | Inap. | Inap. | Fair ..... | James Grant. |
| *Halifax, N. S | 29.68 | 753.9 | 30.07 | 763.8 | 33.7 | 0.9 | 84 | NE | ..... | ..... | 1 | 0 | 5cs | ..... | ..... | 0.03 | 0.8 | Cloudy..... | F. Allison, M. A. |
| Hamilton, Ontario | 29.87 | 758.7 | 29.90 | 759.4 | — 2 | —18.9 | 100 | NW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0.01 | 0.3 | Overcast .... | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.82 | 757.4 | 30.18 | 766.6 | 21 | — 6.1 | 93 | NE | 2 | 0.9 | ..... | 8c | 0 | Calm | ..... | 0 | 0 | Fair... ..... | E. Weedon. |
| *Kingston, Ontario | 30.16 | 766.1 | 30.20 | 767.1 | 12 | —11.1 | ..... | NW | 8 | 3.6 | ..... | 3k | 0 | NW | ..... | 0 | 0 | Fair..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.05 | 763.3 | 30.27 | 768.8 | 10 | —12.2 | 78 | NE | 6 | 2.7 | ..... | 5k | 5s | ..... | ..... | 0 | 0 | Cloudy..... | C. H. McLeod, C. E. |
| *Montreal, Quebec | 29.28 | 743.7 | 30.01 | 762.2 | 26 | — 3.3 | 87 | E | 11 | 4.9 | ..... | 5k | 5ks | W | W | 0 | 0 | Cloudy..... | Rev. R. Mosley. |
| *Parry Sound, Ontario | 29.31 | 744.5 | 30.11 | 764.8 | 23.4 | — 4.8 | 72 | NE | ..... | ..... | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Overcast.... | J. F. Jeffers, B. A. |
| Peterboro, Ontario | 29.30 | 744.2 | 30.02 | 762.5 | 32 | 0.0 | 90 | NE | 7 | 3.1 | ..... | 10k | 0 | W | ..... | 0 | 0 | Cloudy..... | H. Morgan. |
| Port Dover, Ontario | 30.21 | 767.3 | 30.26 | 768.6 | 9.1 | —12.7 | ..... | NW | 10 | 4.5 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine..... | Peter Grant. |
| Port Hastings, N. S | 29.31 | 744.5 | 29.97 | 761.2 | 39 | 3.6 | 72 | E | 24 | 10.7 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Cloudy..... | M. Payne. |
| Port Stanley, Ontario | 30.01 | 762.2 | 30.37 | 771.4 | 9 | —12.8 | 100 | Calm | ..... | ..... | 0 | ..... | 10n | ..... | S | 0 | 0 | Cloudy..... | Capt. Ashe, R. N. |
| *Quebec, Quebec | 29.68 | 753.9 | 30.18 | 766.6 | 12 | —11.1 | 61 | E | 8 | 3.6 | ..... | ..... | 8s | ..... | Calm | 0 | 0 | Cloudy..... | W. H. McIntyre. |
| *Rockliffe, Ontario | 30.24 | 768.1 | 30.39 | 771.9 | 17 | — 8.3 | 54 | NE | 2 | 0.9 | ..... | 5k | 5ks | ..... | SE | 0 | 0 | Fair... ..... | Dr. Gove. |
| St. Andrews, N. B | 30.34 | 770.6 | 30.42 | 772.7 | 15 | — 9.4 | 91 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Cloudy ..... | G. Murdock, C. E. |
| St. John, N B | 29.15 | 740.4 | 29.87 | 758.7 | 37 | 2.8 | 90 | SE | 10 | 4.5 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Overcast..... | K. Stewart. |
| *Saugeen, Ontario | 29.15 | 740.4 | 29.96 | 761.0 | 28 | — 2.2 | 89 | SE | 13 | 5.8 | ..... | ..... | 10n | ..... | S | 0 | 0 | Cloudy..... | R. J. Cole. |
| Stayner, Ontario | 28.63 | 727.2 | 29.96 | 761.0 | 32.0 | 0.0 | 81 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy..... | C. J. MacGregor, M. A. |
| Stratford, Ontario | 30.20 | 767.1 | 30.24 | 768.1 | 14 | —10.0 | 57 | W | 14 | 6.3 | ..... | 2c | 2ks | ..... | NW | 0 | 0 | Clear. ..... | T. C. Hill. |
| *Sydney, C. B | 29.65 | 753.1 | 30.05 | 763.3 | 32 | 0.0 | 89 | E | 12 | 5.4 | ..... | ..... | 10ks | ..... | E | 0 | 0 | Cloudy..... | Magnetic Observatory. |
| *Toronto, Ontario | 30.22 | 767.6 | 30.32 | 770.1 | 17.5 | — 8.1 | 92 | W | 7 | 3.1 | ..... | 4cs | ..... | ..... | ..... | 0 | 0 | Fair... ..... | Prof. John E. Oram. |
| Windsor, N. S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Sub-Series. St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 5.0 | —15.0 | ..... | NW | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.02 | 0.5 | Fair ..... | J. Montgomery. John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182ft. or 360.3 m.

UNITED STATES SERIES.

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

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 30.07 | 763.8 | 30.32 | 770.1 | 28 | — 2.2 | 77 | S | 8 | 3.6 | ..... | 8cs | Sm'e | W | ..... | 0 | 0 | Fair | |
| Alpena, Michigan | 29.08 | 738.6 | 29.74 | 755.4 | 34 | 1.1 | 90 | SE | 10 | 4.5 | ..... | 10s | ..... | ..... | SE | 0 | 0 | Cloudy | |
| Atlantic City, New Jersey | 30.37 | 771.4 | 30.39 | 771.9 | 38 | 3.3 | 90 | E | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Augusta, Georgia | 30.04 | 763.0 | 30.23 | 767.8 | 49 | 9.4 | 71 | Calm | 0 | 0 | ..... | ..... | 10ks; | sm'e ] | SW;Calm | 0 | 0 | Cloudy | |
| Baltimore, Maryland | 30.31 | 769.9 | 30.36 | 771.1 | 40 | 4.4 | 91 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Threatening | |
| Barnegat, New Jersey | 30.37 | 771.4 | 30.39 | 771.9 | 40 | 4.4 | 91 | SE | 4 | 1.8 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear | |
| Bismarck, Dakota | 28.06 | 712.7 | 29.92 | 760.0 | 26 | — 3.3 | 88 | NW | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Boise City, Idaho | 27.52 | 699.0 | 30.40 | 772.1 | 29 | — 1.7 | 78 | Calm | 0 | 0 | ..... | 1k | 0 | Calm | ..... | 0.02 | 0.5 | Clear | |
| Boston, Massachusetts | 30.24 | 768.1 | 30.41 | 772.4 | 34 | 1.1 | 66 | SW | 8 | 3.6 | ..... | 8cs | Haze | W | ..... | 0 | 0 | Fair | |
| Brackettville, Texas | 28.98 | 736.1 | 30.04 | 763.0 | 43 | 6.1 | 66 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 28.68 | 728.5 | 29.70 | 754.4 | 31 | — 0.6 | 100 | N | 16 | 7.2 | ..... | ..... | Fog | ..... | Calm | 0.08 | 2.0 | Foggy | |
| Brownsville, Texas | 30.03 | 764.3 | 30.16 | 766.1 | 60 | 15.6 | 94 | NE | 4 | 1.8 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Buffalo, New York | 29.29 | 744.0 | 30.00 | 762.0 | 41 | 5.0 | 65 | E | 1 | 0.4 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Burlington, Vermont | 30.02 | 762.5 | 30.30 | 769.6 | 24 | — 4.4 | 74 | SW | 6 | 2.7 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Cairo, Illinois | 29.23 | 742.4 | 29.61 | 752.1 | 57 | 13.9 | 63 | S | 20 | 8.9 | ..... | 0 | 2s | ..... | Calm | 0.54 | 13.7 | Fair | |
| Camp Grant, Arizona | 25.38 | 644.6 | 30.18 | 766.6 | 35 | 1.7 | 63 | E | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | 27.08 | 687.8 | 30.57 | 776.5 | 33 | 0.6 | 70 | NW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.61 | 701.3 | 30.18 | 766.6 | 41 | 5.0 | 57 | E | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.36 | 771.1 | 30.37 | 771.4 | 48 | 8.9 | 93 | NE | 7 | 3.1 | ..... | 5k | 5s | SE | Calm | 0 | 0 | Cloudy | |
| Cape Henry, Virginia | 30.32 | 770.1 | 30.35 | 770.9 | 45 | 7.2 | 92 | SE | 12 | 5.4 | ..... | 10cs | 0 | W | ..... | 0 | 0 | Cloudy | |
| Cape Lookout, N. Carolina | 30.32 | 770.1 | 30.33 | 770.4 | 57 | 13.9 | 81 | SE | 12 | 5.4 | ..... | 10cs | 0 | W | ..... | 0 | 0 | Cloudy | |
| Cape May, New Jersey | 30.35 | 770.9 | 30.38 | 771.6 | 42 | 5.6 | 83 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 30.24 | 768.1 | 30.31 | 769.9 | 56 | 13.3 | 87 | E | 2 | 0.9 | ..... | ..... | 10n | ..... | SE | Inap. | Inap. | Light rain | |
| Cheyenne, Wyoming | 24.00 | 609.6 | 29.94 | 760.5 | 25 | — 3.9 | 87 | NW | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 28.81 | 731.8 | 29.48 | 748.8 | 51 | 10.6 | 65 | S | 8 | 3.6 | ..... | 5k | 5ks | S | S | 0.47 | 11.9 | Cloudy | |
| Cincinnati, Ohio | 29.15 | 740.4 | 29.78 | 756.4 | 54 | 12.2 | 61 | S | 5 | 2.2 | ..... | ..... | 10n | ..... | SW | 0.02 | 0.5 | Light rain | |
| Cleveland, Ohio | 29.19 | 741.4 | 29.92 | 760.0 | 43 | 6.1 | 83 | SE | 13 | 5.8 | ..... | ..... | 10n | ..... | Calm | 0.11 | 2.8 | Heavy rain | |
| Concho, Texas | 28.16 | 715.3 | 29.88 | 758.9 | 40 | 4.4 | 26 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.50 | 749.3 | 29.97 | 761.2 | 49 | 9.4 | 64 | W | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0.15 | 3.8 | Clear | |
| Davenport, Iowa | 28.80 | 731.5 | 29.41 | 747.0 | 48 | 8.9 | 85 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0.26 | 6.6 | Cloudy | |
| Deadwood, Dakota | 25.36 | 644.1 | ..... | ..... | 31 | — 0.6 | 79 | S | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Denison, Texas | 29.08 | 738.6 | 29.89 | 759.2 | 47 | 8.3 | 70 | W | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0.09 | 2.3 | Clear | |
| Denver, Colorado | 24.77 | 629.2 | 29.99 | 761.7 | 32 | 0.0 | 40 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | Calm | 0.10 | 2.5 | Fair | |
| Detroit, Michigan | 29.11 | 739.4 | 29.78 | 756.4 | 44 | 6.7 | 84 | SE | 10 | 4.5 | ..... | ..... | 10n | ..... | SE | 0.15 | 3.8 | Light rain | |
| Dodge City, Kansas | 27.24 | 691.9 | 29.55 | 750.6 | 38 | 3.3 | 81 | NW | 20 | 8.9 | ..... | 0 | 5s | ..... | NW | 0.60 | 15.2 | Fair | |
| Dubuque, Iowa | 28.78 | 731.0 | 29.47 | 748.5 | 44 | 6.7 | 92 | SE | 1 | 0.4 | ..... | ..... | 10n | ..... | Calm | 0.17 | 4.3 | Light rain | |
| Duluth, Minnesota | 29.00 | 736.6 | 29.63 | 753.9 | 37 | 2.8 | 81 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Eagle Pass, Texas | 29.36 | 745.7 | 30.12 | 765.0 | 48 | 8.9 | 49 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 30.31 | 769.9 | 30.38 | 771.6 | 19 | — 7.2 | 54 | N | 6 | 2.7 | ..... | 8k | 2s | W | Calm | 0 | 0 | Cloudy | |
| Erie, Pennsylvania | 29.19 | 741.4 | 29.91 | 759.7 | 44 | 6.7 | 60 | SE | 29 | 13.0 | ..... | 10cs | Haze | SW | ..... | 0 | 0 | Cloudy | |
| Escanaba, Michigan | 29.06 | 738.1 | 29.72 | 754.9 | 33 | 0.6 | 80 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Florence, Arizona | 28.61 | 726.7 | 30.21 | 767.3 | 45 | 7.2 | 60 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | 24.22 | 615.2 | 30.22 | 767.6 | 28 | — 2.2 | 67 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.69 | 651.8 | ..... | ..... | 31 | — 0.6 | 48 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.18 | 741.2 | 29.71 | 754.6 | 46 | 7.8 | 77 | NW | 17 | 7.6 | ..... | ..... | 10s | ..... | NW | 0.06 | 1.5 | Cloudy | |
| Fort Griffin, Texas | 28.61 | 727.4 | 29.93 | 760.2 | 45 | 7.2 | 61 | NW | 12 | 5.4 | ..... | 5k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Fort St. Michael, Alaska | 29.69 | 753.4 | 29.70 | 754.4 | —14 | —25.6 | 100 | N | 23 | 10.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Sill, Indian Territory | 28.75 | 730.2 | 29.88 | 758.9 | 43 | 6.1 | 83 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | W | 0.06 | 1.5 | Cloudy | |
| Galveston, Texas | 30.01 | 762.2 | 30.05 | 763.3 | 62 | 16.7 | 94 | W | 10 | 4.5 | ..... | 2c | 0 | W | ..... | 0 | 0 | Fair | |
| Grand Haven, Michigan | 28.76 | 730.5 | 29.60 | 751.8 | 42 | 5.6 | 83 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Indianapolis, Indiana | 28.90 | 734.0 | 29.66 | 753.4 | 50 | 10.0 | 86 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0.11 | 2.5 | Cloudy | |
| Indianola, Texas | 30.09 | 764.3 | 30.12 | 765.0 | 58 | 14.4 | 100 | W | 12 | 5.4 | ..... | ..... | Fog | ..... | W | 0 | 0 | Foggy | |
| Jacksboro, Texas | 28.84 | 732.5 | 29.99 | 761.7 | 44 | 6.7 | 54 | SW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.24 | 768.1 | 30.26 | 768.6 | 59 | 15.0 | 82 | NE | 3 | 1.3 | ..... | 10k | 0 | SE | ..... | 0 | 0 | Cloudy | |
| Keokuk, Iowa | 28.72 | 729.5 | 29.31 | 744.5 | 49 | 9.4 | 100 | SE | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.62 | 15.7 | Light rain | |
| Key West, Florida | 30.13 | 765.3 | 30.16 | 766.1 | 71 | 21.7 | 71 | E | 12 | 5.4 | ..... | 5k | 5s | SE | SE | 0 | 0 | Cloudy | |
| Kittyhawk, North Carolina | 30.34 | 770.6 | 30.37 | 771.4 | 46 | 7.8 | 92 | E | 5 | 2.2 | ..... | 10cs | 0 | E | ..... | 0 | 0 | Cloudy | |
| Knoxville, Tennessee | 28.97 | 735.8 | 29.97 | 761.2 | 55 | 12.8 | 81 | SW | 1 | 0.4 | ..... | ..... | 10n | ..... | SW | Inap. | Inap. | Light rain | |
| La Crosse, Wisconsin | 28.80 | 731.5 | 29.53 | 750.0 | 40 | 4.4 | 91 | N | 3 | 1.3 | ..... | ..... | 10n | ..... | Calm | 0.35 | 8.9 | Light rain | |
| La Mesilla, New Mexico | 26.25 | 666.7 | 30.40 | 772.1 | 33 | 0.6 | 69 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.71 | 754.6 | 30.05 | 763.3 | 56 | 13.3 | 62 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 28.62 | 726.9 | 29.41 | 747.8 | 44 | 6.7 | 92 | NW | 18 | 8.0 | ..... | ..... | 10ks | ..... | NW | 1.09 | 27.7 | Cloudy | |
| Los Angeles, California | 29.92 | 760.0 | 30.27 | 768.8 | 46 | 7.8 | 77 | N | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.24 | 742.7 | 29.79 | 756.7 | 52 | 11.1 | 86 | SE | 8 | 3.6 | ..... | ..... | 10n | ..... | SW | 0.50 | 12.7 | Heavy rain | |
| Lynchburg, Virginia | 29.63 | 752.6 | 30.35 | 770.9 | 38 | 3.3 | 63 | Calm | 0 | 0 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Hazy | |
| Maricopa Wells, Arizona | ..... | ..... | ..... | ..... | 36 | 2 2 | 53 | N | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.03 | 737.3 | 29.74 | 755.4 | 38 | 3.3 | 72 | SE | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Mason, Texas | 28.42 | 721.9 | 30.20 | 767.1 | 50 | 10.0 | 32 | W | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.41 | 747.0 | 29.72 | 754.9 | 60 | 15.6 | 66 | S | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | 0.40 | 10.2 | Clear | |
| Milwaukee, Wisconsin | 28.87 | 733.3 | 29.55 | 750.6 | 40 | 4.4 | 91 | SE | 8 | 3.6 | ..... | ..... | 10s; | fg | ..... | 0.20 | 5.1 | Cloudy | |
| Mobile, Alabama | 30.02 | 762.5 | 30.07 | 763.8 | 61 | 16.1 | 97 | S | 12 | 5.4 | ..... | 5c | 5s | W | SW | 0.07 | 1.8 | Cloudy | |
| Montgomery, Alabama | 29.80 | 756.9 | 30.04 | 763.0 | 62 | 16.7 | 77 | S | 12 | 5.4 | ..... | ..... | 10n | ..... | S | Inap. | Inap. | Light rain | |
| Morgantown, West Virginia | 28.96 | 735.6 | 30.02 | 762.5 | 47 | 8.3 | 48 | S | 8 | 3.6 | ..... | 5c | Sm'e | SW | ..... | 0 | 0 | Fair | |
| Mt. Washington, N. H. | 23.80 | 604.5 | 30.16 | 766.1 | 20 | — 6.7 | 56 | NW | 42 | 18.8 | ..... | 8c | 0 | W | ..... | 0 | 0 | Fair | |
| Nashville, Tennessee | 29.30 | 744.2 | 29.83 | 757.7 | 54 | 12.2 | 100 | SW | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.93 | 23.6 | Heavy rain | |
| New Haven, Connecticut | 30.28 | 769.1 | 30.40 | 772.1 | 38 | 3.3 | 72 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| New London, Connecticut | 30.37 | 771.4 | 30.43 | 772.9 | 35 | 1.7 | 70 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| New Orleans, Louisiana | 29.91 | 760.5 | 30.04 | 763.0 | 65 | 18.3 | 89 | SW | 11 | 4.9 | ..... | 0 | 8ks | ..... | SW | Inap. | Inap. | Threatening | |
| Newport, Rhode Island | 30.38 | 771.6 | 30.43 | 772.9 | 34 | 1.1 | 61 | SW | 8 | 3.6 | ..... | ..... | 10ks | ..... | SW | 0 | 0 | Threatening | |
| New York, New York | 30.24 | 768.1 | 30.42 | 772.7 | 34 | 1.1 | 79 | SE | 2 | 0.9 | ..... | 10c | Sm'e | Calm | Calm | 0 | 0 | Cloudy | |
| Norfolk, Virginia | 30.30 | 769.6 | 30.36 | 771.1 | 45 | 7.2 | 84 | SE | 7 | 3.1 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| North Platte, Nebraska | 26.92 | 683.8 | 29.53 | 750.0 | 33 | 0.6 | 75 | NW | 24 | 10.7 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | |
| Olympia, Washington Ter. | 30.18 | 766.6 | 30.22 | 767.6 | 39 | 3.9 | 91 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Omaha, Nebraska | 28.40 | 721.3 | 29.46 | 748.3 | 41 | 5.0 | 100 | NW | 18 | 8.0 | ..... | ..... | 10n | ..... | NW | 0.54 | 13.7 | Light rain | |
| Oswego, New York | 29.82 | 757.4 | 30.15 | 765.8 | 39 | 3.9 | 55 | S | 12 | 5.4 | ..... | 8c | 2s | NW | NW | 0 | 0 | Cloudy | |
| Pembina, Dakota | 28.99 | 736.3 | 29.86 | 758.4 | 24 | — 4.4 | 100 | NW | 14 | 6.3 | ..... | ..... | 10n | ..... | NW | 0.24 | 6.1 | Light snow | |
| Philadelphia, Pennsylvania | 30.36 | 771.1 | 30.42 | 772.7 | 34 | 1.1 | 61 | E | 1 | 0.4 | ..... | 1c | Fog | Calm | Calm | 0 | 0 | Clear | |
| Phœnix, Arizona | 29.02 | 737.1 | 30.90 | 784.8 | 42 | 5.6 | 83 | E | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.43 | 442.7 | 29.74 | 755.4 | — 9 | —22.8 | 56 | N | 34 | 15.2 | ..... | ..... | 10s | ..... | N | 0.18 | 4.6 | Cloudy | |
| Pioche, Nevada | 24.26 | 616.2 | 30.02 | 762.5 | 27 | — 2.8 | 76 | Calm | 0 | 0 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.19 | 741.4 | 30.01 | 762.2 | 44 | 6.7 | 60 | SE | 4 | 1.8 | ..... | 10c | Fog | W | ..... | 0 | 0 | Cloudy | |
| Port Huron, Michigan | 29.14 | 740.1 | 29.80 | 756.9 | 40 | 4.4 | 82 | SE | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light rain | |
| Portland, Maine | 30.30 | 769.6 | 30.35 | 770.9 | 25 | — 3.9 | 75 | SW | 10 | 4.5 | ..... | 8k | Haze | NW | ..... | 0 | 0 | Cloudy | |
| Portland, Oregon | 30.20 | 767.1 | 30.31 | 769.9 | 43 | 6.1 | 91 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Prescott, Arizona | 24.99 | 634.7 | 30.35 | 770.9 | 26 | — 3.3 | 40 | SW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Punta Rassa, Florida | 30.19 | 766.8 | 30.21 | 767.3 | 66 | 18.9 | 78 | E | 9 | 4.0 | ..... | 10k | 0 | NE | ..... | 0 | 0 | Cloudy | |
| Red Bluff, California | 30.00 | 762.0 | 30.38 | 771.6 | 46 | 7.8 | 81 | N | 4 | 1.8 | ..... | 1k | 0 | ..... | ..... | 0 | 0 | Clear | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rochester, New York | 29.43 | 747.5 | 30.06 | 763.5 | 38 | 3.3 | 91 | SE | 9 | 4.0 | ..... | 8cs | 0 | Calm | ..... | Inap. | Inap. | Fair | |
| Roseburg, Oregon | 29.68 | 753.9 | 30.27 | 768.8 | 43 | 6.1 | 96 | Calm | 0 | 0 | ..... | Haze | 5s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Sacramento, California | 30.27 | 768.8 | 30.35 | 770.9 | 47 | 8.3 | 92 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.95 | 760.3 | 29.50 | 749.3 | 52 | 11.1 | 79 | S | 13 | 5.8 | ..... | 0 | 5s | ..... | Calm | 0.78 | 19.8 | Fair | |
| St. Marks, Florida | 30.18 | 766.6 | 30.10 | 766.8 | 61 | 16.1 | 83 | SE | 16 | 7.2 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| St. Paul, Minnesota | 28.78 | 729.7 | 29.55 | 750.6 | 40 | 4.4 | 86 | NE | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.04 | 1.0 | Light rain | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.90 | 657.8 | 30.23 | 767.8 | 40 | 4.4 | 56 | NW | 2 | 0.9 | ..... | 2k | 5s | Calm | Calm | 0.01 | 0.3 | Fair | |
| San Antonio, Texas | 29.39 | 746.5 | 29.99 | 761.7 | 51 | 10.6 | 72 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| San Diego, California | 30.22 | 767.6 | 30.29 | 769.4 | 48 | 8.9 | 93 | NE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandusky, Ohio | 29.16 | 740.7 | 29.83 | 757.7 | 47 | 8.3 | 77 | S | 20 | 8.9 | ..... | ..... | 10n | ..... | S | 0.30 | 7.6 | Light rain | |
| Sandy Hook, New Jersey | 30.39 | 771.9 | 30.41 | 772.4 | 36 | 2.2 | 80 | S | 3 | 1.3 | ..... | 10c | Haze | W | ..... | 0 | 0 | Cloudy | |
| San Francisco, California | 30.26 | 768.6 | 30.33 | 770.4 | 51 | 10.6 | 93 | SE | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Santa Fé, New Mexico | 23.29 | 591.6 | 29.83 | 757.7 | 23 | — 5.0 | 60 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 30.16 | 766.1 | 30.25 | 768.3 | 57 | 13.9 | 81 | SE | 4 | 1.8 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Shreveport, Louisiana | 29.70 | 754.4 | 29.92 | 760.0 | 57 | 13.9 | 63 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.32 | 8.1 | Clear | |
| Smithville, North Carolina | 30.27 | 768.8 | 30.31 | 769.9 | 57 | 13.9 | 87 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Springfield, Massachusetts | 30.18 | 766.6 | 30.32 | 770.1 | 31 | — 0.6 | 79 | S | 6 | 2.7 | ..... | ..... | 10ks | ..... | SW | 0 | 0 | Cloudy | |
| Stockton, Texas | 27.16 | 689.8 | 30.16 | 766.1 | 38 | 3.3 | 80 | W | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 30.34 | 770.6 | 30.40 | 772.1 | 32 | 0.0 | 79 | SW | 24 | 10.7 | ..... | 2cs;k | 0 | W;SW | ..... | 0 | 0 | Fair | |
| Toledo, Ohio | 29.06 | 738.1 | 29.73 | 755.1 | 45 | 7.2 | 84 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | SE | 0.10 | 2.5 | Cloudy | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 36 | 2.2 | 90 | S | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tybee Island, Georgia | 30.22 | 767.6 | 30.25 | 768.3 | 57 | 13.9 | 87 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Umatilla, Oregon | 30.03 | 762.7 | ..... | ..... | 29 | — 1.7 | 78 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.67 | 753.6 | 29.93 | 760.2 | 63 | 17.2 | 89 | SW | 16 | 7.2 | ..... | 0 | 2s | ..... | SW | 0.01 | 0.3 | Fair | |
| Virginia City, Montana | 24.42 | 620.3 | 29.90 | 759.4 | 17 | — 8.3 | 83 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | |
| Visalia, California | 30.00 | 762.0 | 30.30 | 771.9 | 43 | 6.1 | 92 | E | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C | 30.25 | 768.3 | 30.37 | 771.4 | 39.5 | 4.2 | 95 | SE | 7 | 3.1 | ..... | ..... | 10n | ..... | E | Inap. | Inap. | Light rain | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 33 | 0.6 | 51 | N | ..... | ..... | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 30.22 | 767.6 | 30.30 | 769.6 | 57 | 13.9 | 81 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Winnemucca, Nevada | 29.91 | 668.1 | 30.27 | 768.8 | 29 | — 1.7 | 78 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wood's Holl, Mass | 30.39 | 771.9 | 30.45 | 773.4 | 35 | 1.7 | 70 | SW | 12 | 5.4 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Yankton, Dakota | 28.39 | 721.1 | 29.70 | 754.4 | 33 | 0.6 | 89 | NW | 24 | 10.7 | ..... | ..... | 10n | ..... | Calm | 0.08 | 2.0 | Light rain | |
| Yuma, Arizona | 30.14 | 765.5 | 30.31 | 769.9 | 47 | 8.3 | 69 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A | 30.02 | 762.5 | 30.07 | 763.8 | —15.5 | —26.4 | 71 | N | 10 | 4.5 | ..... | 2ck | 1s | NW | ..... | 0.04 | 1.0 | Fair | J. Fortescue, W. Wood |
| Havana, Cuba, W. I | 30.11 | 764.8 | 30.13 | 765.3 | 70 | 21.1 | 84 | SE | 4.8 | 2.1 | ..... | 4k | 0 | SW | ..... | 0 | 0 | Fair | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | 30.19 | 766.8 | 30.20 | 767.1 | 78 | 25.6 | 86 | N | 2 | 0.9 | ..... | 2c | 2s | Calm | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I | 30.00 | 762.0 | 30.08 | 764.0 | 81 | 27.2 | ..... | NE | 10 | 4.5 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | F. M. Everett. |
| Paramaribo, D. Guiana, S. A | ..... | ..... | 30.11 | 764.8 | 82 | 27.8 | 83 | E | ..... | ..... | 3 | ..... | 8ks | ..... | ..... | 0 | 0 | ½ cloudy | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | 30.08 | 764.0 | 30.09 | 764.2 | 78.4 | 25.8 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | Dr. H. Groot. |
| Medellin, Colombia, S. A | 25.29 | 642.4 | ..... | ..... | 66.2 | 19.0 | 77 | Calm | ..... | ..... | 0 | 10cs | 0 | ..... | ..... | 0 | 0 | ..... | Thomas Herran |
| Honolulu, Oahu, H. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Daniel Smith. |
| Makawao, Maui, H. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. L. Clarke. |

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 770 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,627.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m. Tucson, 2,645 (?) ft., or 776.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,276 ft.. or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington 6.86 in.; Pike's Peak, 12.21 in ; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.64 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Yirginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er. —10. | Clouds. Amount. Low'r. 0—10. | Clouds. Direction. Up'er. From— | Clouds. Direction. Low'r. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.29 | 769.4 | 48 | 8.9 | 46 | 7.8 | 100 | ESE | 5 | 2.2 | .... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Navy Yard, Pensacola, Fla. | 30.14 | 765.5 | 63 | 17.2 | 63 | 17.2 | 94 | SSE | 7 | 3.1 | .... | ..... | 10 | ..... | ..... | 0.24 | 6.1 | ..... | ..... | Light rain | |
| Navy Yard, Portsmouth, N.H. | 30.43 | 772.9 | 66 | 18.9 | 27 | — 2.8 | 88 | SW | 4 | 1.8 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | Misty | |
| Naval Hospital, Yokohama, Japan | 30.04* | 763.0* | 48 | 8.9 | 39 | 3.9 | 46 | N | ..... | ..... | 5 | ..... | 8ks | ..... | NW | 0 | 0 | ..... | ..... | Cloudy | |
| Adams, Panama | 30.02 | 762.5 | 83 | 28.3 | 83 | 28.3 | 83 | NNW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy | |
| Alliance, Smyrna, Turkey | 30.25‡ | 768.3‡ | ..... | ..... | 55 | 12.8 | 62 | W | ..... | ..... | 1 | ..... | 1 | ..... | W | ..... | ..... | ..... | ..... | Clear | |
| Ashuelot, Shanghai, China | 30.46* | 773.7* | 50 | 10.0 | 46 | 7.8 | 40 | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Blue sky | |
| Canonicus, New Orleans, La. | 30.03 | 762.7 | 49 | 9.4 | 65 | 18.3 | 89 | SW | ..... | ..... | 3 | ..... | 8 | ..... | N&E | ..... | ..... | ..... | ..... | Cloudy | |
| Colorado, New York, N. Y. | 30.39‡ | 771.9‡ | ..... | ..... | 35 | 1.7 | 80 | SW | 3 | 1.3 | ..... | ..... | 8 | ..... | WSW | 0 | 0 | ..... | ..... | Foggy | |
| Constitution, Off Delaware Breakwater. | 30.37‡ | 771.4‡ | ..... | ..... | 42 | 5.6 | 91 | SE | ..... | ..... | 3 | ..... | 2 | ..... | Calm | ..... | ..... | Smooth | ..... | Clear | |
| Despatch, Constantinople, Turkey. | 30.34 | 770.6 | 60 | 15.6 | 55 | 12.8 | 68 | SSW | ..... | ..... | 4 | ..... | 1 | ..... | SW | ..... | ..... | ..... | ..... | Clear | |
| Enterprise, New Orleans, La. | 30.06‡ | 763.5‡ | ..... | ..... | 65 | 18.3 | 94 | SSW | ..... | ..... | 1 | ..... | 8 | ..... | SW | ..... | ..... | ..... | ..... | Misty | |
| Franklin, Norfolk, Va. | 30.46‡ | 773.7‡ | ..... | ..... | 54 | 12.2 | 93 | SSE | 10 | 4.5 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | ..... | Hailing | |
| Guard, Porto Grande, Cape Verde Islands. | 30.15 | 765.8 | 76 | 24.4 | 76 | 24.4 | 64 | NNE | ..... | ..... | 3–4 | ..... | 0 | ..... | ..... | ..... | ..... | Mod'ate Ground | NW | Clear | |
| Marion, Piraeus, Greece | 30.28 | 769.1 | 59 | 15.0 | 59 | 15.0 | 82 | SSW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Michigan, Erie, Pa. | 29.42 | 747.3 | 62 | 16.7 | 44 | 6.7 | 60 | SE | ..... | ..... | 6 | ..... | 5 | ..... | SE | ..... | ..... | ..... | ..... | Cloudy | |
| Monongahela, Manila, Philippine Islands. | 30.14* | 765.5* | 81 | 27.2 | 81 | 27.2 | 91 | SSE | ..... | ..... | 3–5 | ..... | 3 | ..... | ..... | ..... | ..... | Smooth | ..... | D. clouds | |
| New Hampshire, Port Royal, S. C. | 30.44 | 773.2 | 59 | 15.0 | 58 | 14.4 | 88 | SSW | 5 | 2.2 | ..... | ..... | 8 | ..... | S | 0 | 0 | ..... | ..... | Overcast | |
| Omaha, S. 22° 45′, W. 33° 40′ | 30.05* | 763.3* | 82 | 27.8 | 81 | 27.2 | 87 | NNW | 3 | 1.3 | ..... | ..... | 7 | ..... | N | 2.02 | 51.3 | Slight | N | Showery | |
| Onward, Callao, Peru | 30.04† | 763.0† | ..... | ..... | 72 | 22.2 | 90 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty | |
| Ossipee, Belize, British Honduras. | 30.08‡ | 764.0‡ | ..... | ..... | 80 | 26.7 | 91 | E | ..... | ..... | 4 | ..... | 8 | ..... | E | ..... | ..... | ..... | ..... | Cloudy | |
| Palos, Shanghai, China | 30.54* | 775.7* | 65 | 18.3 | 39 | 3.9 | 82 | ENE | ..... | ..... | 2 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Clear | |
| Pensacola, Honolulu, H. I. | 30.31 | 769.9 | 73 | 22.8 | 69 | 20.6 | 80 | NE | 5 | 2.2 | ..... | ..... | 5 | ..... | NE | 0.01 | 0.3 | ..... | ..... | Fair | |
| Plymouth, Norfolk, Va. | 30.31‡ | 769.9‡ | ..... | ..... | 47 | 8.3 | 100 | SE | ..... | ..... | 1 | ..... | 10 | ..... | SW | ..... | ..... | ..... | ..... | Hazy | |
| Powhatan, St. Vincent, W. I. | 30.06‡ | 763.5‡ | ..... | ..... | 84 | 28.9 | 96 | E | 3.0 | 1.3 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Smooth | ..... | Pleasant | |
| Ranger, N. 21° 46′ E. 117° 14′ | 30.30* | 769.6* | ..... | ..... | 62.5 | 16.9 | ?? | ENE | ..... | ..... | 3–4 | ..... | 10 | ..... | E | ..... | ..... | Mod'ate | W | Overcast | |
| Rio Bravo, Brownsville, Texas | ..... | ..... | ..... | ..... | 58 | 14.4 | 100 | NNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Foggy | |
| Santee, Annapolis, Md. | 30.44* | 773.2* | 64 | 17.8 | 40 | 4.4 | 100 | E | ..... | ..... | 1 | ..... | 10 | ..... | E | 0 | 0 | ..... | ..... | Overcast | |
| Saratoga, Washington, D. C. | 30.34* | 770.6* | ..... | ..... | 38 | 3.3 | 90 | ENE | ..... | ..... | 1 | ..... | 2 | ..... | Calm | 0 | 0 | ..... | ..... | Clear | |
| St. Louis, League Island, Pa | 30.28 | 769.1 | 52 | 11.1 | 37 | 2.8 | 100 | NE | 2 | 0.9 | ..... | ..... | 5 | ..... | NW | 0 | 0 | ..... | ..... | Fair | |
| Supply, N. 41° 21′, W. 58° 32′ | 30.25 | 768.3 | 34 | 1.1 | 36 | 2.2 | 70 | N | ..... | ..... | 6 | ..... | 8 | ..... | NW | ..... | ..... | Mod'ate | NW | Fair | |
| Swatara, Port-au-Prince, Hayti | 30.21* | 767 3* | ..... | ..... | 81 | 27.2 | 78 | E | ..... | ..... | 2 | ..... | 2 | ..... | E | ..... | ..... | ..... | ..... | D. clouds | |
| Tennessee, S. 21° 10′ 15″, E. 114° 26′ 00″. | 30.14* | 765.5* | 68 | 20.0 | 65 | 18.3 | 78 | E | 5 | 2.2 | ..... | ..... | 10 | ..... | E | 0 | 0 | Mod'ate | E | Drizzling | |
| Trenton, Smyrna, Turkey | 30.26‡ | 768.6‡ | ..... | ..... | 58 | 14.4 | 58 | WNW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Hazy | |
| Tuscarora, N. 34° 20′, W. 120° 15′ | 30.30 | 769 6 | 59 | 15.0 | 56 | 13.3 | 100 | ENE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear | |
| Vandalia, Constantinople, Turkey. | 30.18‡ | 766.6‡ | ..... | ..... | 51 | 10.6 | 65 | S | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Wabash, Boston, Mass. | 30.41‡ | 772.4‡ | ..... | ..... | 30 | — 1.1 | 68 | SW | 11 | 4.9 | ..... | ..... | 5 | ..... | Calm | 0 | 0 | ..... | ..... | Hazy | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

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

| NAMES OF VESSELS. | TRUE COURSE TOWARD— | HOURLY RATE IN KNOTS. | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | SEA-SWELL. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | CHARACTER. | DIRECTION FROM— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, N. 34° 54′, E. 139° 54′ | | | | | 45 | 7.2 | | NNE | | | 6 | | 6 | | WNW | Rough | NW | D. clouds | Capt. Maury. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds.

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

Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, N. 34° 54′, E. 139° 54′ | | | | | 45 | 7.2 | | NNE | | | 6 | | 6 | | WNW | Rough | NW | D. clouds | Capt. Maury. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds.

## WHITE STAR LINE MARINE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic, N. 51° 13′, W. 14° 26′ | | | 30.22* | 767.6* | | | | NNW | | | 5 | | 3 | | NW | Mod'ate | NW | Clear | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. W. H. Thompson |
| S. S. Celtic, N. 51° 12′, W. 13° 57′ | | | 30.22† | 767.6† | 53 | 11.7 | 80 | W | | | 8 | | | | SW | Mod'ate | W | D. clouds | Capt. B. Gleadell. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Republic, amount of cloudiness by the scale 0 to 4. *Aneroid; corrected for elevation; instrumental error not known. †Aneroid.

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

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, N. 28° 43′, E. 125° 25′ | | | 30.23* | 767.8* | | | | NNW | | | 4 | | Light | | SW | Smooth | | D. clouds | Capt. John Metcalf. |
| S. S. Gaelic, N. 31° 00′, W. 157° 50′ | | | 30.07† | 763.8† | 58 | 14.4 | ?? | WNW | | | 6 | | k | | W | Head sea. | NW | D. clouds | Capt. W. H. Kidley |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

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

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jueger. |
| S. S. Ohio, N. 45° 55′, W. 39° 1′ | S70W | | 29.12 | 739.6 | 44.5 | 6.9 | 92 | NW | | | 6 | | Haze | | | Heavy | W; NW | Raining | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—CONTINUED.

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

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | Character | Direction From— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, N. 40° 07′ 21″, W. 70° 33′ | | | 30.43† | 772.9† | 40 | 4.4 | 73 | NW | | | 1 | | 2 | | W | Mod'ate | NNW | Clear | Captain Sargent. |
| S. S. Ohio, N. 50° 01′, W. 24° 50′ | | | 29.98 | 761.5 | 55.5 | 13.1 | 90 | SSW | | | 6 | | 10 | | SSW | Mod'ate | SW | Hazy | Captain Morrison. |
| S. S. Pennsylvania, Liverpool | | | 30.00 | 762.0 | 53 | 11.7 | ?? | W | | | 4 | | 4 | | NW | | | Partly clear | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. †Aneroid; unreliable, corrected for elevation, instrumental error not known.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RED STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
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| **ALLAN LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of A. Schumacher, & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Scandinavian | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

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

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MARINE SERIES.** (Miscellaneous.) | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller Providence, R. I. | | | 30.35 | 770.9 | 30 | — 1.1 | 78 | WSW | 3 | 1.3 | | | 5k | | WSW | | | Cloudy | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.69 | 754 1 | —38 | —38.9 | 88* | W | 1 | 0.4 | | 0 | 0 | | | | | Clear | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Determined by use of hair hygrometer.

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

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

Albert J. Myer

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

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 3, 1878.

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

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

### ALGERIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.32 | 770.1 | 63.3 | 17.4 | ..... | NE | ..... | ..... | 6 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair..... | Dr. Ollive. |
| Nemours | ..... | ..... | 30.24 | 768.2 | 67.3 | 19.6 | 63 | NNW | ..... | ..... | 1 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy..... | Michel. |
| Algiers | ..... | ..... | 30.24 | 768.0 | 64.8 | 18.2 | 71 | NNE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered..... | Towillere. |
| La Calle | ..... | ..... | 30.26 | 768.7 | 68.4 | 20.2 | 85 | WNW | ..... | ..... | 1 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy..... | Boulangeot. |
| Tunis | ..... | ..... | 30.26 | 768.3 | 67.3 | 19.6 | 60 | W | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair .. ..... | Jacques. |
| Sfax | ..... | ..... | 30.32 | 770.0 | 66.2 | 19.0 | ..... | WSW | ..... | ..... | 5 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair.. | Gau. |
| Saida | ..... | ..... | 30.25 | 768.4 | 72.1 | 22.3 | 95 | SSE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy..... | Herbin. |
| Tebessa | ..... | ..... | 30.30 | 769.7 | ..... | ..... | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Clear..... | Bourgeois. |
| Geriville | ..... | ..... | 30.31 | 769.8 | 54.3 | 12.4 | 84 | NW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair.. | Lemaillot. |
| Laghouat | ..... | ..... | 30.33 | 770.3 | 69.8 | 21.0 | 14 | E | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear..... | Guyot. |
| Biskra | ..... | ..... | 30.28 | 769.0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

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

### AUSTRIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.60 | 751.9 | 30.11 | 764.7 | 61.9 | 16.6 | 54 | SW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.25 | 742.9 | 30.02 | 762.6 | 47.5 | 8.6 | 60 | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.213 | 5.4 | ..... | Dr. Wierzbiski. |
| Eperies | 29.09 | 738.8 | 29.98 | 761.4 | 48.0 | 8.9 | 57 | N | ..... | ..... | 3 | ..... | 8s | ..... | ..... | 0.150 | 3.80 | ..... | Julius Mikolik. |
| Gratz | 28.86 | 733.1 | 30.10 | 764.6 | 61.2 | 16.2 | 36 | NW | ..... | ..... | 5 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.55 | 725.1 | 29.97 | 761.2 | 52.9 | 11.6 | 60 | NW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.90 | 734.0 | 30.26 | 768.6 | 50.0 | 10.0 | 79 | WNW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0.146 | 3.7 | ..... | Prof. C. Wagner |
| Lemberg | 28.81 | 731.7 | 29.80 | 757.0 | 44.8 | 7.1 | 73 | NW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0.063 | 1.6 | ..... | Dr. T. Stanecki. |
| Pola | 30.13 | 765.2 | 30.24 | 768.1 | 57.6 | 14.2 | 76 | SSE | ..... | ..... | 1 | ..... | 9cks | ..... | ..... | 0.020 | 0.5 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.56 | 750.8 | 30.03 | 762.7 | 50.0 | 10.0 | 60 | NW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.80 | 756.8 | 30.08 | 763.9 | 57.6 | 14.2 | 63 | S | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Karl Stancel. |
| Trieste | 30.17 | 766.3 | 30.27 | 768.9 | 63.2 | 11.8 | 88 | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | P. Busin. |
| Vienna | 29.45 | 748.0 | 30.17 | 766.3 | 55.9 | 13.3 | 59 | NNW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0.067 | 1.7 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.92 | 734.5 | 30.47 | 773.9 | 46.9 | 8.3 | 64 | NW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. M. Passau. |
| Brussels | 30.22 | 767.6 | 30.43 | 772.8 | 52.5 | 11.4 | 59 | WNW | ..... | ..... | 2 | 1 | 6 | NW | WNW | Inap. | Inap | ..... | Royal Observatory. |
| Furnes | 30.45 | 773.5 | 30.48 | 774.1 | 54.5 | 12.5 | 64 | W | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | M. E. de Cae. |
| Maeseyck | 30.27 | 768.9 | 30.40 | 772.1 | 53.6 | 12.0 | 75 | WSW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

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

## BRITISH SERIES.

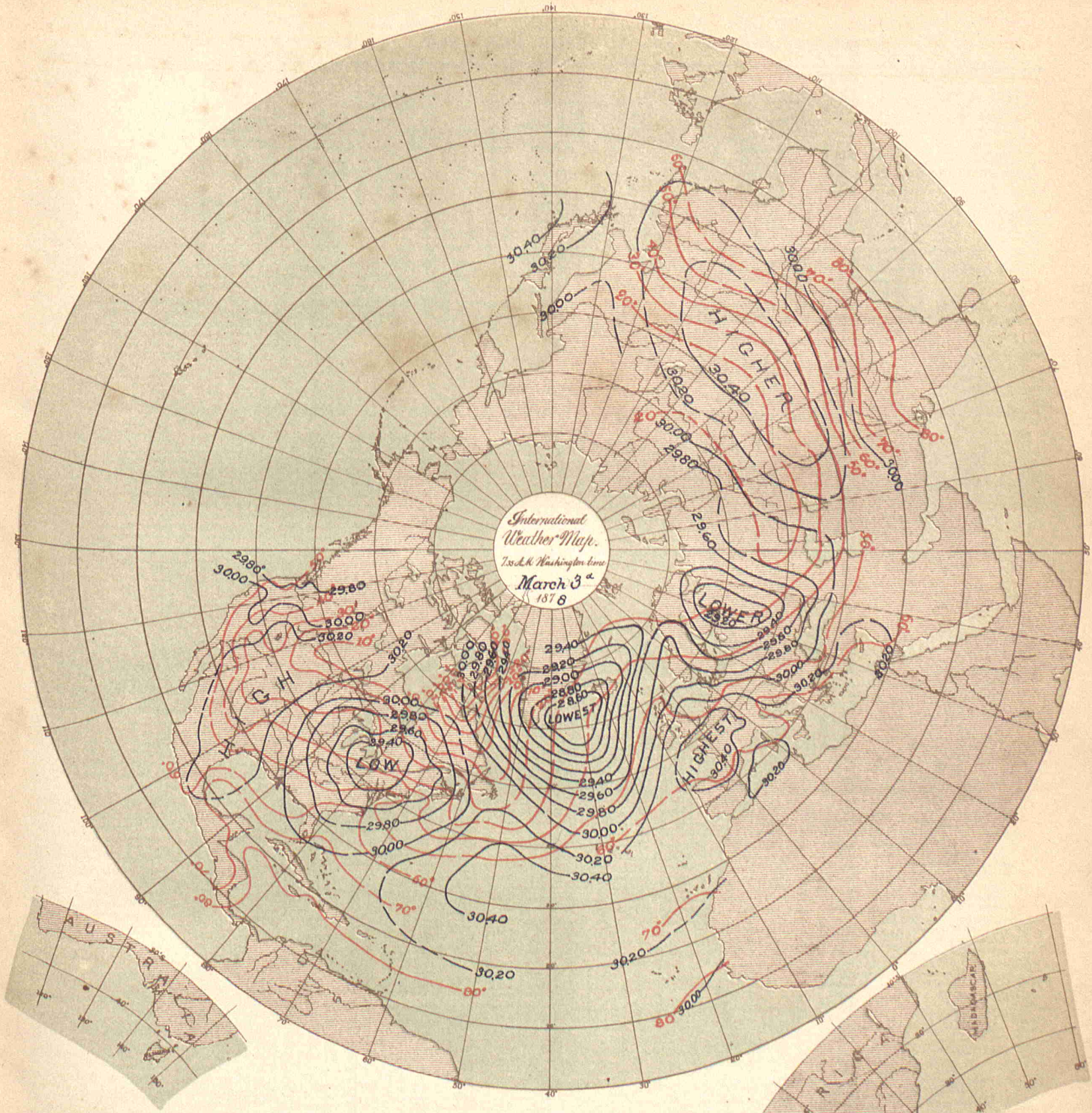
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.02 | 762.5 | 30.12 | 765.0 | 48.0 | 8.9 | ..... | SSW | 11 | 4.9 | ..... | ..... | 9 | ..... | ..... | Inap. | Inap. | Misty..... | W. Boswell. |
| Ardrossan | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.24 | 768.1 | 46.9 | 8.3 | ..... | S | 15 | 6.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Squally..... | S. Call, for Dr. Robinson |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.35 | 770.9 | 51.4 | 10.8 | ..... | WSW | 15 | 6.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Hartnup. |
| Birr Castle, (Parsonstown) | 30.07 | 763.8 | 30 27 | 768.8 | 54.1 | 12.3 | ..... | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds..... | J. Dreyer. |
| Bradford, Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.01 | 0.3 | ..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 30.05 | 763.3 | 30.08 | 764.0 | 81.0 | 27.2 | ..... | NE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 30.40 | 772.1 | 57.0 | 13.9 | ..... | SW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | H. Todd. [H.C. |
| Cardington | ..... | ..... | 30.41 | 772.4 | 54.0 | 12.2 | ..... | W | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | John McLaren. |
| Chatham, School M. E | 30.29 | 769.4 | 30.43 | 772.9 | 49.2 | 9.6 | ..... | SW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.98 | 736.1 | 30.50 | 774.7 | 44.0 | 6.7 | ..... | W | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | Fine..... | Alexander Watt. |
| Donaghadee | 30.20 | 767.1 | 30.22 | 767.6 | 50 | 10.0 | ..... | SW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | J. Mac Gowan. |
| Dover | 30.41 | 772.4 | 30.44 | 773 2 | 49 | 9.4 | ..... | WSW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | ¾ clouded... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 30.34 | 770.6 | 51.5 | 10.8 | ..... | SW | 2.8 | 1.3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | Thomas Mackereth. |
| Falmouth, Observatory | 30.26 | 765.6 | 30.50 | 774.7 | 52.9 | 11.6 | ..... | SW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | The Staff. |
| Fort Napier, (Natal) | 27.73 | 704.3 | 29.93 | 760.2 | 86.0 | 30.0 | ..... | E | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds.... | Pvt. G. Saimon, A. H. C. |
| Free Town, (Sierra Leone) | 29.68 | 753.9 | 29.90 | 759.4 | 89.0 | 31.7 | ..... | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | |
| Galway, Queen's College | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.13 | 765.3 | 30.18 | 766.6 | 62.2 | 16.8 | ..... | W | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | Corpl. C. Aitken, A.H.C. |
| Glasgow, Observatory | 29.98 | 761.5 | 30.18 | 766.6 | 57.0 | 13.9 | ..... | SW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | Blue sky..... | D. G. Maclean. |
| Great Yarmouth | 30.35 | 770.9 | 30.36 | 771.1 | 54 | 12.2 | ..... | W | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 30.25 | 768.3 | 30.42 | 772.7 | 55.3 | 12.9 | ..... | W | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | Hazy..... | The Staff, for G. B. Airy. |
| Guernsey | 30.30 | 769.6 | 30.52 | 775.2 | 52.5 | 11.4 | ..... | WSW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 30.49 | 774.4 | 55 | 12.8 | ..... | SW | ..... | ..... | 1 | ..... | 2k | ..... | ..... | 0 | 0 | Fine..... | M. P. Moyle. |
| Holyhead | 30.28 | 769.1 | 30.33 | 770.4 | 50 | 10.0 | ..... | SW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | John Tilston. |
| Jersey | 30.25 | 768.3 | 30.55 | 776.0 | 49.8 | 9.9 | ..... | WSW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky.... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 30.43 | 772.9 | 54.5 | 12.5 | ..... | W | 14 | 6.3 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | Hazy..... | The Staff. |
| Kingstown | 30.28 | 769.1 | 30.30 | 769.6 | 54 | 12.2 | ..... | WSW | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 30.38 | 771.6 | 55.0 | 12.8 | ..... | SW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds.... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 30.22 | 767.6 | 30.30 | 769.6 | 63.2 | 17.3 | ..... | SW | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | Sgt. Fred. Travis, A. H. |
| Nairn | 29.94 | 760.5 | 30.03 | 762.7 | 52 | 11.1 | ..... | WSW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded... | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 30.02 | 762.5 | 75.2 | 24.0 | ..... | SE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | C. S. Duncombe. |
| Nottingham, Observatory | 30.18 | 766.6 | 30.37 | 771.4 | 59.6 | 15.3 | ..... | WNW | ..... | ..... | 3 | ..... | 4c;ck;k | ..... | NNW;NW | 0 | 0 | D. clouds.... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.85 | 758.2 | 30.37 | 771.4 | 56.3 | 13.5 | ..... | WSW | ..... | ..... | 3–4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast .... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.42 | 772.7 | 54 | 12.2 | ..... | W | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | Mr. Lucas. |
| Plymouth | 30.40 | 772.1 | 30.48 | 774.2 | 50.0 | 10.0 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Merrifield. |
| Roche's Point | 30.32 | 770.1 | 30.36 | 771.1 | 51 | 10.6 | ..... | SW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | Cloudy..... | W. Kennedy. |
| Saint Ann's Head | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | John C. Walker. |
| Sandwick Manse, (Orkneys.) | ..... | ..... | 30.01 | 762.2 | 49.5 | 9.7 | ..... | SW | 14 | 6.3 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 30.08 | 764.0 | 49.2 | 9.6 | ..... | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | Blank | Blank | Misty..... | Sergt. W. H. Lyne. |
| Sheffield | 30.09 | 764.3 | 30.38 | 771.6 | 54.8 | 12.7 | ..... | SW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0 | 0 | Overcast..... | W. F. Cooper. |
| Silloth Rectory | 30.23 | 767.8 | 30.26 | 768.6 | 51.7 | 10.9 | 79 | SW | ..... | ..... | 5 | ..... | 6 | ..... | ..... | 0 | 0 | D. clouds.... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.95 | 760.7 | 30.35 | 770.9 | 48.0 | 8.9 | ..... | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Rev. S. J. Perry. |
| Stornoway, Lews C. (Hebr.) | ..... | ..... | 29.88 | 758.9 | 50 | 10.0 | ..... | SW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Smith. |
| Stratfield Turgiss | 30.22 | 767.6 | 30.44 | 773.2 | 55.4 | 13.0 | ..... | SW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. C. H. Griffith, F.M.S. |
| Thurso | ..... | ..... | 29.97 | 761.2 | 55 | 12.8 | ..... | SW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 30.47 | 773.9 | 58 | 14.4 | ..... | SW | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 30.26 | 768.6 | 53.5 | 11.9 | ..... | SSW | 37 | 16.5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.12 | 765.0 | 72.0 | 22.2 | 78 | SE | ..... | ..... | 3 | ..... | 10kn | ..... | ..... | ..... | ..... | Raining..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.69 | 754.1 | 29.87 | 758.7 | 83.6 | 28.7 | 63 | ESE | 16.0 | 7.2 | ..... | 1 | 4 | ..... | ESE | 0.11 | 2.8 | Fine; squally | C. Meldrum. |
| Melbourne, Observatory | 30.05 | 763.3 | 30.14 | 765.5 | 70.0 | 21.1 | 64 | WNW | 7 | 3.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Fine..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

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

| Marine Series. Vessels. | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Algeria, N. 43° 51′ W. 48° 40′ | 15* | W | 30.24 | 768.1 | 28.0 | — 2.2 | ..... | W | ..... | ..... | 5 | ..... | 9 | ..... | ..... | D. clouds..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon, N. 16° 40′, W. 16° 15′ | 5 | NE | 30.19 | 766.8 | 79 | 26.1 | ..... | NNE | ..... | ..... | 6 | ..... | 5 | ..... | ..... | D. clouds..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. C. Prehn. |
| S. S. Peruvian, N. 55° 0′, W. 11° 35′ | 7 | SSW | 29.91 | 759.7 | 53 | 11.7 | ..... | SSW | ..... | ..... | 6 | ..... | 8 | ..... | ..... | D. clouds .... | Capt. W. H. Smith, R. N. [R. |
| Royal Alice | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Alex Simpson |
| Yorkshire, N. 45° 30′ W. 25° 25′ | 7 | W | 29.87 | 758.7 | 50 | 10.0 | ..... | W | ..... | ..... | 6 | ..... | 8 | ..... | ..... | Raining..... | |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.




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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.27 | 667.2 | | | 68.9 | 20.5 | 86 | NE | | | 1 | p | 1d | | E | 0 | 0 | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.85 | 758.3 | 29.90 | 759.5 | 47.3 | 8.5 | 62 | NW | | | 6 | | 7 | | | | | | |
| Fanöe | 30.09 | 764.2 | 30.11 | 764.7 | 44.1 | 6.7 | 91 | W | | | 6 | | 10 | | | | | | |
| Godthaab, (Greenland) | 28.90 | 734.0 | 28.94 | 735.1 | 18.0 | — 7.8 | 92 | N | | | 2 | | 7 | | | | | | |
| Stykkisholm, (Iceland) | 28.54 | 725.0 | 28.59 | 726.1 | 39.7 | 4.3 | 97 | SE | | | 7 | | 10 | | | | | | Raining. |
| Thorshavn, (Faröe) | 29.05 | 753.2 | 29.09 | 754.1 | 48.4 | 9.1 | 91 | SW | | | 5 | | 10 | | | | | | Raining. |
| Vestervig | 29.86 | 758.4 | 30.03 | 762.7 | 43.2 | 6.2 | 79 | W | | | 4 | | 4 | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.98 | 761.5 | 30.03 | 775.5 | 51.8 | 11 | 61 | SW | | | 1 | | 0 | | | 0 | 0 | Clear | Collignon, Director. |
| Amiens, Normal School | 30.37 | 771.4 | 30.48 | 774.2 | 58.6 | 14.8 | 55 | W | | | 2 | | 2 | | W | 0 | 0 | Slightly cl'dy | Bonvarne, Director. |
| Avignon, Normal School | 30.20 | 767.0 | 30.28 | 769.0 | 64.4 | 18 | 53 | NNW | | | 8 | | 0 | | | 0 | 0 | Clear. | Mr. Giraud, Director |
| Bar-sur-Seine | 29.89 | 759.3 | 30.47 | 773.0 | 54.3 | 12.4 | 54 | NE | | | 2 | | 2cn | | E | 0.087 | 2.2 | Slightly cl'dy | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 53.4 | 11.9 | 52 | NW | | | 2 | | 5 | | NW | 0 | 0 | Cloudy | Normal School. |
| Besançon | 29.52 | 749.7 | 30.38 | 771.6 | 56.1 | 13.4 | 84 | NE | | | 2 | | 8 | | N | 0.098 | 2.5 | Very cloudy | Normal School. |
| Bourg-en-Bresse | 29.35 | 745.5 | 30.28 | 769.1 | 55.2 | 12.9 | 77 | N | | | 4 | | 5km | | N | 0.016 | 0.4 | Cloudy | Normal School. |
| Bourges, Normal School | 29.75 | 755.6 | 30.35 | 770.8 | 54.7 | 12.6 | 93 | E | | | 2 | | 8 | | S | 0 | 0 | Very cloudy | A. Wagner, Director. |
| Brest, Naval Observatory | 30.24 | 768.0 | 30.46 | 773.6 | 54.5 | 12.5 | 80 | SW | | | 1 | | 4 | | SW | 0.010 | 0.25 | Misty | The Staff. |
| Carcassonne, Normal School | 30.02 | 762.5 | 30.44 | 773.1 | 56.8 | 13.8 | 80 | W | | | 2 | | 2 | | NW | 0 | 0 | Slightly cl'dy | Vateau, Director. |
| Caen | 30.23 | 767.7 | 30.30 | 769.6 | 55.4 | 13 | 62 | W | | | 8 | | 2 | | N | 0 | 0 | Slightly cl'dy | Normal School. |
| Chartres, Normal School | 29.90 | 759.5 | 30.48 | 774.1 | 54.9 | 12.7 | 95 | N | | | 2 | | 6 | | SW | 0.20 | 5. | | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 30.16 | 766.0 | 30.48 | 774.2 | 49.1 | 9.5 | 89 | Calm | | | 0 | | 5k | | | 0.244 | 6.2 | Cloudy | I. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 29.06 | 738.1 | 30.44 | 773.1 | 54.9 | 12.4 | 72 | NE | | | 2 | | 10 | | N | 0.091 | 2.3 | Covered | Alluard, Director. |
| Commercy, Normal School | 29.60 | 751.7 | 30.50 | 774.6 | 48.9 | 9.4 | 71 | NW | | | 2 | | 2 | | NW | 0.031 | 0.8 | Slightly cl'dy | Dr. Goulet, Director. |
| Commune de Gréasque* | 29.17 | 741.0 | 30.32 | 770.0 | 60.3 | 15.7 | 64 | SW | | | 2 | | 5 | | SW | 0 | 0 | ½ covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 30.37 | 771.4 | 30.59 | 777.0 | 54.3 | 12.4 | 68 | W | | | 1 | | 0 | | | 0.217 | 5.5 | Clear | Mouillot, Director. |
| Le Mans, Normal School | 30.20 | 767.0 | 30.51 | 775.0 | 51.6 | 11 | 58 | NNE | | | 2 | | 2 | | NE | 0.232 | 5.9 | Slightly cl'dy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.46 | 748.2 | 30.38 | 771.7 | 56.8 | 13.8 | 77 | NE | | | 6 | | 5 | | N | 0.096 | 2.45 | Cloudy | Voudez, Director. |
| Lorient, Naval Observatory | 30.45 | 773.5 | 30.55 | 776.0 | 55.0 | 12.8 | 70 | N | | | 2 | | 5 | | S | 0 | 0 | ½ Covered | T. Carré, Director. |
| Mâcon, Normal School | 29.63 | 752.7 | 30.29 | 769.4 | 54.7 | 12.6 | 74 | SW | | | 2 | | 10 | | | 0 | 0 | Covered | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | 29.37 | 746.0 | 30.43 | 773.0 | 50.0 | 10 | 71 | NW | | | 2 | | 2 | | SW | 0 | 0 | Slightly cl'dy | Normal School. |
| Nismes, Normal School | 30.09 | 764.3 | 30.30 | 769.5 | 66.9 | 19.4 | 42 | N | | | 4 | | 0 | | | 0 | 0 | Clear | Boyer, Director. |
| Orleans, Normal School | 30.13 | 765.2 | 30.51 | 775.0 | 53.2 | 11.8 | 71 | NW | | | 2 | | 5 | | NW | 0.24 | 6. | Cloudy | Bernard, Director. |
| Paris, Observatory | 30.25 | 768.3 | 30.49 | 774.5 | 53.6 | 12.0 | 57 | NW | | | 1 | | 10 | | | 0.028 | 0.71 | Covered | National Observatory. |
| Privas | 29.32 | 744.7 | 30.40 | 772.2 | 56.3 | 13.5 | 50 | N | | | 2 | | 5 | | N | 0 | 0 | Cloudy | Normal School |
| Rochefort, Naval Obs'y | 30.48 | 774.3 | 30.52 | 775.1 | 57.9 | 14.4 | 72 | NNE | | | 1 | | 0 | | | 0 | 0 | Clear | Lt. Decante, Director. |
| Rouen, Normal School | 30.43 | 772.8 | 30.51 | 775.0 | 56.8 | 13.8 | 47 | WNW | | | 2 | | 5 | | NW | 0 | 0 | Cloudy | F. Lucard, Director. |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | M. H. Hercouet. |
| Tarbes, Normal School | 29.31 | 744.5 | 30.40 | 772.1 | 59.0 | 15 | 68 | W | | | 2 | | 5 | | W | 0 | 0 | Cloudy | T. Hugues, Director. |
| Villefranche | 29.64 | 750.4 | 30.26 | 768.7 | 55.6 | 13.1 | 90 | SE | | | 1 | | 2 | | NE | 0.047 | 1.2 | Slightly cl'dy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.93 | 760.1 | 29.95 | 760.8 | 80.6 | 27 | | | | | | | | | | 0.75 | 19. | | L'Abbé Marchési. |
| Lyons | | | 30.44 | 773.1 | 55.9 | 13.3 | | | | | | | | | | 0.008 | 0.2 | Light rain | M. Joys. |
| Marseilles, Observatory | | | 30.24 | 768.1 | 53.4 | 11.9 | 70 | SW | | | 0–1 | | 7 | | | 0 | 0 | Very cloudy | The Staff. |
| Mont-Louis | 25.18 | 638.2 | 30.44 | 773.2 | 42.3 | 5.7 | 61 | NW | 18.6 | 8.33 | | | 1 | | NW | 0.051 | 1.3 | | Mr. Falguère. |
| Nice | 30.17 | 766.4 | 30.25 | 768.4 | 62.6 | 17.0 | 69 | E | | | 3 | | 1 | | E | 0 | 0 | Clear | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 30.21 | 767.2 | 30.48 | 774.2 | 53.6 | 12.0 | 60 | SW | | | 1 | | 9 | | W | 0.024 | 0.6 | | Marié Davy, Director. |
| Perpignan | | | 30.37 | 771.4 | 63.3 | 17.4 | 55 | N | 22.4 | 10.00 | | | 1 | | NW | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.78 | 577.4 | | | 37.4 | 3.0 | | N | | | 1 | | 3 | | | 0.071 | 1.8 | Fair | Com'l de Nansouty |
| Saint Maur, (near Paris) | 30.33 | 770.3 | 30.49 | 774.5 | 52.3 | 11.3 | 64 | Calm | | | 0 | | 10 | | | 0 | 0 | | E. Renou. |
| Toulouse, Observatory | 29.75 | 755.7 | 30.48 | 774.3 | 54.7 | 12.6 | 76 | NNW | | | 2 | | 9 | | | 0 | 0 | | The Staff. |
| Tours | 30.28 | 769.2 | 30.48 | 774.2 | 54.7 | 12.6 | 66 | NNE | | | 1 | | 7 | | NNW | 0.146 | 3.7 | | C. Marquet. |
| Versailles, (near Paris) | | | 30.49 | 774.5 | 55.4 | 13.0 | 59 | N | | | 1 | | 8 | | | 0.022 | 0.55 | Light clouds | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.34 | 770.6 | 30.36 | 771.2 | 39.2 | 4.0 | 92 | E | 9.4 | 4.2 | | | 9n | | | 0.094 | 2.4 | Covered | Marc Dechevrens, S. J. |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 305 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

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

| STATIONS. | Barometer. Corrected for instru'm'tal error and temperature. Inches. | Barometer. Corrected for instru'm'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.94 | 760.5 | 30.11 | 764.8 | 51.1 | 10.6 | 68 | W | | | 2 | | 7 | | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 29.52 | 749.9 | 30.06 | 763.4 | 50.2 | 10.1 | 57 | WNW | | | 3 | | 10 | | | 0.047 | 1.20 | | Prof. Arndt. |
| Breslau | 29.97 | 761.1 | 30.40 | 772.2 | 52.2 | 11.2 | 61 | NE | | | 1 | | 5 | | | 0.287 | 7.3 | | Royal University Obs'y |
| Carlsruhe | 29.78 | 756.4 | 30.39 | 772.0 | 51.1 | 10.6 | 68 | WNW | | | 7 | | 7 | W | | 0 | 0 | | Albert Señz. |
| Cassel | 30.20 | 767.0 | 30.36 | 771.2 | 53.8 | 12.1 | 63 | W | | | 3 | | 8k | | | 0.12 | 3. | | Dr. H. Möhl. |
| Crefeld | 30.30 | 769.5 | 30.33 | 770.4 | 48.2 | 9.0 | 83 | W | | | 3 | | 10 | | | 0 | 0 | | Director Lose. |
| Emden | 30.08 | 763.9 | 30.45 | 773.4 | 51.8 | 11 | 55 | W | | | 2 | | 8 | | | 0.322 | 8.2 | | Prof. Prestel. |
| Frankfort on the Main | 28.95 | 735.3 | 30.41 | 772.4 | 51.8 | 11.0 | 85 | S | | | 3 | | 7 | SW | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 30.11 | 764.9 | 30.19 | 766.7 | 49.1 | 9.5 | 74 | W | | | 5 | | 7km | | | 0.008 | 0.2 | Fair | M. Wilhelm. |
| Hamburg | 30.11 | 764.8 | 30.13 | 765.2 | 48.0 | 8.9 | 73 | W | | | 6 | | 10 | | | 0 | 0 | | Captain F. Hegemann. |
| Kiel | 29.54 | 750.3 | 29.62 | 752.3 | 40.6 | 4.8 | 74 | NW | | | | | | | | 0.001 | 0.02 | Cloudy | Prof. G. Karsten. |
| Königsberg, (Prussia) | | | 29.84 | 757.8 | 41.7 | 5.4 | | NW | | | 6 | | 4 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | 29.84 | 758.0 | 30.27 | 768.9 | 50.0 | 10.0 | 70 | WNW | | | 4 | | 9 | WNW | | 0.165 | 4.2 | | H. Müller. |
| Leipsic, Observatory | 29.43 | 747.4 | 29.47 | 748.6 | 38.5 | 3.6 | 82 | NW | | | 6 | | 10cs | | | | | | Prof. Bruhns. |
| Memel, Naval School | 29.67 | 753.5 | 29.68 | 753.9 | 45.1 | 7.3 | 65 | NW | | | 7 | | 9 | | | 0 | 0 | Stormy | Reinbrech von Skalweit. |
| Neufahrwasser | 29.71 | 754.6 | 30.01 | 762.2 | 46.4 | 8.0 | 71 | NW | | | 9 | | 10 | | | 0.004 | 0.09 | Cloudy | A. Lothes. |
| Posen | 29.89 | 759.2 | 30.45 | 773.4 | 53.2 | 11.8 | 57 | NNW | | | 3 | | 4 | | | 0.119 | 3.02 | | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.43 | 747.4 | 30.39 | 771.8 | 50.9 | 10.5 | 57 | N | | | 2 | | 4 | W | | 0 | 0 | | Dr. Schur. |
| Stuttgart | 29.82 | 757.3 | 30.34 | 770.7 | 50.2 | 10.1 | 56 | W | | | 5 | | 8 | | | 0 | 0 | Foggy | Prof. Schoder. |
| Treves, (Trier) | 28.84 | 732.6 | 30.39 | 771.9 | 47.1 | 8.4 | 65 | NW | 11 | 5 | | | 8ck | | W | 0.079 | 2.0 | Squally | Prof. Flesch. |
| Weissenburg, (Bavaria) | 30.06 | 763.5 | 30.10 | 764.5 | 43.0 | 6.1 | 81 | WNW | | | 6 | | 10 | | | 0 | 0 | Covered | Dr. Von Bebber. |
| Wustrow, Naval School | | | | | | | | | | | | | | | | | | | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.82 | 757.4 | 30.21 | 767.3 | 61.9 | 16.6 | | S | | | 2.5 | | | | | | | Dusty | Dr. J. F. J. Schmidt. |

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

## INDIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.83 | 757.6 | 29.88 | 759.1 | 77.4 | 25.2 | 65 | WSW | 20.07 | 8.9? | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.43 | 747.6 | 29.91 | 759.7 | 83.7 | 28.7 | 30 | Calm | | | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.90 | 759.4 | 29.94 | 760.4 | 75.7 | 24.3 | 71 | WNW | 13.0 | 5.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.80 | 706.1 | 29.76 | 755.9 | 89.0 | 31.7 | 31 | NW | | | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 29.17 | 740.9 | 29.93 | 760.2 | 71.3 | 21.8 | 46 | NE | 3.2 | 1.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.38 | 695.5 | 29.00 | 759.5 | 81.3 | 27.4 | 43 | Calm | 0 | 0 | | | 0 | | | 0 | 0 | Misty | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.98 | 736.1 | 29.90 | 759.4 | 70.4 | 21.3 | 52 | Calm | 2.0 | 0.9 | | | | | | 0 | 0 | | |
| Agra | 29.29 | 743.9 | 29.86 | 758.3 | 78.2 | 25.7 | 25 | S | | | | | | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.78 | 731.1 | 29.81 | 757.1 | 90.6 | 32.5 | 20 | Calm | 2.8 | 1.2 | | | | | | 0 | 0 | Blue sky | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.49 | 749.0 | 29.87 | 758.6 | 73.3 | 22 9 | 49 | SW | 1.7 | 0.8 | | | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.52 | 749.7 | 29.83 | 757.7 | 74.9 | 23.8 | 33 | Calm | 0.9 | 0.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.67 | 753.6 | 29.86 | 758.3 | 78.3 | 25.7 | 24 | W | 1.5 | 0.7 | | | 2 | W | W | 0 | 0 | | |
| Hazaribagh | 27.82 | 706.7 | 29.89 | 759.1 | 65.3 | 18.5 | 35 | WNW | 4.6 | 2.1 | | | 0 | | | 0 | 0 | Misty | |
| Cuttack | 29.84 | 757.8 | 29.92 | 759.9 | 83.0 | 28.3 | 40 | SSE | 2.0 | 0.9 | | | 0 | | | 0 | 0 | Misty | |
| Calcutta (Alipore) | 29.87 | 758.8 | 29.90 | 759.3 | 76.0 | 24.4 | 49 | S | 5.0 | 2.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.49 | 749.1 | 29.90 | 759.3 | 69.2 | 20.7 | 34 | W | 1.6 | 0.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.86 | 758.3 | 29.95 | 760.7 | 72.8 | 22.7 | 44 | W | 7.2 | 3.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Sibsagar | 29.57 | 751.0 | 29.91 | 759.8 | 68.8 | 20.4 | 87 | SW | 2.3 | 1.0 | | | 8 | SW | SW | 0 | 0 | D. clouds | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.47 | 723.2 | 29.84 | 758.0 | 79.6 | 26.1 | 28 | NW | 4.2 | 1.9 | | | | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.8 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

## ITALIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.82 | 757.3 | 30.33 | 767.8 | 57.4 | 14.1 | 67 | S | 1.8 | 0.8 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 30.11 | 764.7 | 30.22 | 767.5 | 56.7 | 13.7 | 59 | SSW | 4.9 | 2.2 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 30.02 | 762.6 | 30.22 | 767.5 | 59.9 | 15.5 | 50 | NW | 3.8 | 1.7 | ..... | ..... | 2 | W | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.90 | 734.1 | 30.22 | 767.6 | 58.6 | 14.8 | 68 | SW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.35 | 745.5 | 30.26 | 768.5 | 60.1 | 15.6 | 68 | NNE | 1.3 | 0.6 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 28.33 | 719.6 | 30.24 | 768.2 | 56.3 | 13.5 | 54 | NNW | ..... | ..... | 2 | ..... | 1 | W | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 30.06 | 763.5 | 30.28 | 769.2 | 58.1 | 14.5 | 75 | E | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 30.12 | 765.1 | 30.30 | 769.5 | 58.1 | 14.5 | 76 | S | 2.5 | 1.1 | ..... | ..... | 4 | S | ..... | 0.047 | 1.2 | ..... | Prof. G. M. Garibaldi. |
| Parma | 30.02 | 762.4 | 30.34 | 770.5 | 64.4 | 18.0 | 51 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 30.00 | 761.9 | 30.26 | 769.5 | 59.0 | 15.0 | 70 | NE | ..... | ..... | 2 | ..... | 6 | NE | ..... | 0 | 0 | ..... | Cav. F Meucci. |
| Leghorn | 30.19 | 766.7 | 30.27 | 768.9 | 58.5 | 14.7 | 72 | S | 1.3 | 0.6 | ..... | ..... | 8 | WSW | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 30.23 | 767.9 | 30.28 | 769.2 | 53.1 | 11.7 | 81 | N | 0 | 0 | ..... | ..... | 10 | NW | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.69 | 728.7 | 30.26 | 768.6 | 53.6 | 12.0 | 73 | SW | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 30.17 | 766.4 | 30.29 | 769.3 | 58.3 | 14.6 | 81 | WSW | ..... | ..... | 2 | ..... | 8 | S | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 30.08 | 764.0 | 30.26 | 768.5 | 59.2 | 15.1 | 70 | NE | 0 | 0 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U | 30.11 | 764.7 | 30.31 | 769.9 | 58.6 | 14.8 | 80 | S | ..... | ..... | 1 | ..... | 10 | SW | ..... | 0.031 | 0.8 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 59.5 | 15.3 | 60 | NW | 4.3 | 1.9 | ..... | ..... | 9 | N | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.98 | 761.4 | 30.17 | 766.3 | 60.8 | 16.0 | 75 | S | ..... | ..... | 2 | ..... | 5 | S | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.37 | 745.9 | 30.26 | 768.6 | 64.8 | 18.2 | 71 | NW | 2.5 | 1.1 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.95 | 760 6 | 30.20 | 767.1 | 59.5 | 15.3 | 66 | E | 1.3 | 0.6 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 30.12 | 765.1 | 30.20 | 767.0 | 62.2 | 16.8 | 73 | SE | ..... | ..... | 1 | ..... | 5 | SW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.78 | 756 5 | 30.34 | 770.6 | 55.4 | 13.0 | 83 | SW | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0.012 | 0.3 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 879.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.3 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 30.35 | 770.9 | 30.42 | 772.6 | 35.2 | 1.8 | 59 | NW | 6.8 | 3.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear ..... | The Observatory. |
| Tokei (Yeddo) University | 30.30 | 769.6 | 30.41 | 772.4 | 35.2 | 1.8 | 58 | NNW | 8 | 3.6 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear ..... | Prof. P. V. Veede. |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | 25.19 | 639.7 | 29.99 | 761.7 | 63 5 | 17.5 | 43 | N | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Foggy ..... | L. Castillo, A. E. |
| Guadalajara | 25.12 | 638.0 | 30.18 | 766.5 | 47.3 | 8.5 | 52 | W | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Foggy ..... | Prof. L. Peres. |
| Guanajuato | 23.77 | 603.8 | 30.02 | 762.7 | 61.3 | 16.3 | 53 | E | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear... | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 53.8 | 12.1 | 34 | N | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Foggy ..... | Prof. M. Leal. |
| Mexico | 23.19 | 589.0 | 30.25 | 768.3 | 57.6 | 14.2 | 59 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine..... | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 50.7 | 10.4 | 42 | E | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | M. V. de Leon, M. E. |
| Puebla | 23.46 | 595.7 | 30.23 | 767.9 | 46.6 | 8.1 | 75 | NE | 0.9 | 0.4 | ..... | 0 | 1cs | ..... | ..... | 0 | 0 | Clear..... | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velasquez. |
| Tlacotalpam | 30.18 | 766.5 | 30.19 | 766.8 | 68.0 | 20.0 | 84 | N | 2.0 | 0.9 | ..... | 7ck | 3n | N | N | 0 | 0 | Threatening | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 30.17 | 766.3 | 30.20 | 767.0 | 73.4 | 23.0 | 78 | N | 15.6 | 7.0 | ..... | 2c | 3sk | ..... | ..... | 0 | 0 | Foggy..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 48.2 | 9.0 | 40 | NW | 0.9 | 0.4 | ..... | 5ck | 0 | ..... | ..... | 0 | 0 | ½ cloudy.... | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.37 | 593.6 | 30.17 | 766.1 | 46.8 | 8.2 | 46 | NE | 2.2 | 1.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | P. Spina. [M. M. D. D. |
| Morelia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Tena, F. L. Param. |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,660 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,284.5 m., or 7,488.3 ft.; Orizaba, 1,323 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.44 | 773.2 | 30.44 | 773.2 | 50.0 | 10.0 | ..... | W | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.083 | 2.1 | ..... | |
| Groningen | 30.26 | 768.5 | 30.31 | 769.9 | ..... | ..... | ..... | NW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 30.33 | 770.4 | 30.33 | 770.4 | 46.8 | 8.2 | ..... | WSW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 30.40 | 772 2 | 30.40 | 772.2 | 50.7 | 10.4 | 79 | W | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 30.34 | 770.7 | 30.39 | 771.9 | 55.6 | 13.1 | 65 | W | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Light cloudy | H. v d Brink. |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

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

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.91 | 759.7 | 29.97 | 761.1 | 45.0 | 7.2 | 69 | NNW | 8.5 | 3.8 | | | 2 | | | 0.016 | 0.4 | | |
| Brönö | 29.88 | 758.9 | 29.92 | 759.9 | 36.3 | 2.4 | 57 | Calm | 0 | 0 | | | 5 | | | 0 | 0 | | |
| Christiania | 29.65 | 753.0 | 29.80 | 756.8 | 48.0 | 8.9 | 50 | NW | 20 | 9 | | | 1 | | | 0 | 0 | | |
| Tromsö | 29.51 | 749.6 | 29.56 | 750.7 | 28.8 | — 1.8 | 88 | Calm | 0 | 0 | | | 10 | | | 0.315 | 8.0 | Snowing | |

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

## PORTUGUESE SERIES.

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

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.93 | 760.2 | 30.12 | 765.1 | 62.8 | 17.1 | 90 | SW | 18.6 | 8.3 | | | 6 | | | 0 | 0 | | Dr. J. A. Sampaio. |
| Campo Major | 29.25 | 742.9 | 30.26 | 768.7 | 62.6 | 17.0 | 48 | NNE | 18.6 | 8.3 | | | 2 | | | 0.079 | 2.0 | | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.27 | 768.8 | 30.35 | 771.0 | 64.4 | 18.0 | 71 | SE | 8.0 | 3.6 | | | 2 | | | 0 | 0 | | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.97 | 761.1 | 30.32 | 770.2 | 64.6 | 18.1 | 40 | NE | 17.4 | 7.8 | | | 0 | | | 0 | 0 | | The Staff. |
| Ponta Delgada, (Azores) | 30.16 | 766.0 | 30.24 | 768.2 | 63.3 | 17.4 | 90 | S | 15.4 | 6.9 | | | 10 | | | 0.028 | 0.7 | | |

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

| Naval Series. Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | | | | | | | | | | | | | | | | | | | R. A. T. Pinha, Com'd't. |
| D. Fernando | | | | | | | | | | | | | | | | | | | A. M. de Sande, Com'd't |
| India | | | | | | | | | | | | | | | | | | | A. D. Pedroso, Com'd't. |
| Mindello, Mozambique, Mozambique | 29.71 | 754.7 | 29.72 | 754.8 | 86.0 | 30.0 | | ESE | | | 2 | | 9 | | ESE | 1 | | Blue sky | J. F. R. R. Bastos, Com'd't. A. J. de Mattos, Com'd't. |
| Quanza | | | | | | | | | | | | | | | | | | | |
| Sado, River Bolola, Senegambia | 29.98 | 761.5* | 29.99* | 761.8* | 87.8 | 31.0 | | Calm | | | 0 | | 0 | | | 1 | | Blue sky | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.80 | 756.9 | 29.81 | 757.1 | 86.0 | 30.0 | | NW | | | 2 | | 2 | | | | | Blue sky | F. Texeira da Silva, Com'd't. F. J. Ferreira, dos Anjos, Com'd't |
| Tejo | | | | | | | | | | | | | | | | | | | |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

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

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.32 | 744.8 | 29.76 | 755.8 | 43.9 | 6.6 | 73 | W | 31 | 14 | | | 10ks | | | | | | Astronomical Obs. |
| Wilna | 28.94 | 735.1 | 29.37 | 745.9 | 36.5 | 2.5 | 94 | W | 4 | 2 | | | 10 | | | | | Raining | Astronomical Obs. |
| Dorpat | 28.97 | 735.7 | 29.21 | 741.9 | 34 0 | 1.1 | 99 | WNW | 7 | 3 | | | 10n | | | | | | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.09 | 738.9 | 29.11 | 739.3 | 31.6 | — 0.2 | 90 | NW | 9 | 4 | | | 10n | | | | | Snowing | Central Physical Obs. |
| Knopio | 28.86 | 733.0 | 29.19 | 741.3 | 29.5 | — 1.4 | 100 | N | 40 | 18 | | | 10 | | | Blank | Blank | | Ch. Forsten. |
| Kieff | 28.87 | 733.3 | 29.51 | 749.6 | 42.1 | 5.6 | 75 | WNW | 13 | 6 | | | 5ks;ks | | | | | | Physical Cabinet. |
| Nikolaiev | 29.67 | 753.5 | 29.74 | 755.3 | 46.6 | 8.1 | 71 | NW | 18 | 8 | | | 10n | | | | | | Kurdakof. |
| Kertch | 29.78 | 756.3 | 29.80 | 756.8 | 48.6 | 9.2 | 92 | WSW | 9 | 4 | | | 5 | | | | | | Lagorio. |
| Moscow | 28.72 | 729.5 | 29.29 | 743.9 | 25.9 | — 3.4 | 87 | S | 27 | 12 | | | 10s | | | | | Snowing | Meteorological Obs. |
| Lugan | 29.27 | 743.4 | 29.48 | 748.7 | 36.0 | 2.2 | 89 | SW | 22 | 10 | | | 10 | | | Blank | Blank | | Meteorological Obs. |
| Archangel | 29.22 | 742.2 | 29.24 | 742.7 | 28.0 | — 2.2 | 96 | SSE | 13 | 6 | | | 10 | | | | | | Ogorodnikof. |
| Tiflis | 28.61 | 726.8 | 30.06 | 763.4 | 48.7 | 9.3 | 13 | NW | 9 | 4 | | | 4k | | | | | | Physical Observatory |
| Astrakhan | 29.99 | 761.8 | 29.91 | 759.7 | 28.4 | — 2.0 | 76 | WNW | 4 | 2 | | | 10ks | | | Blank | Blank | | Sebastianof. |
| Kasan | 29.51 | 749.6 | 29.80 | 756.8 | 21.2 | — 6.0 | 68 | Calm | 0 | 0 | | | 10 | | | | | | Physical Cabinet. |
| Orenburg | | | | | | | | | | | | | | | | | | | Tschernischef. |
| Ekaterinburg | 28.85 | 732.7 | 29.84 | 757.8 | 26.4 | — 3.1 | 68 | Calm | 0 | 0 | | | 8c;cs | | | | | Light clouds | Meteorological Obs. |
| Nukuss | 29.93 | 760.3 | 30.18 | 766.5 | 34.5 | 1.4 | 56 | SSW | 18 | 8 | | | 10n | | | | | | |
| Kasaly | | | | | | | | | | | | | | | | | | | Bobrof. |
| Tashkend | 28.62 | 726.9 | 30.43 | 772.9 | 31.3 | — 0.4 | 92 | NW | 4 | 2 | | | 10n | | | | | Snowing | Michelson. |
| Barnaul | 29.71 | 754.5 | 30.28 | 769.0 | 15.4 | — 9.2 | 78 | Calm | 0 | 0 | | | 5 | | | | | Light clouds | Meteorological Obs. |
| Yeniseisk | 29.80 | 756.9 | 30.14 | 765.6 | 21.6 | — 5.8 | 82 | Calm | 0 | 0 | | | 0 | | | | | | Marks. |
| Irkutsk | | | | | | | | | | | | | | | | | | | Usolzef. |
| Krotkowo* | 29.35 | 745.6 | 29.86 | 758.5 | 12.7 | —10.7 | 71 | S | 9 | 4 | | | 0 | | | | | | Cand. Fatjanow. |
| Peking, (China) | 30.23 | 767.9 | 30.37 | 771.5 | 41.9 | 5.5 | 38 | Calm | 0 | 0 | | | 3cs | | | | | | Physical Observatory. |
| Nertchinsk | 27.95 | 709.9 | 30.13 | 765.3 | 19.2 | — 7.1 | 55 | NW | 2 | 1 | | | 4 | | | | | | Meteorological Obs. |
| Vladivostock | | | | | | | | | | | | | | | | | | | |
| Nikolaievsk, on the Amoor | | | | | | | | | | | | | 0 | | | | | | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

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

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 30.14 | 765.6 | 30.25 | 768.3 | 62.6 | 17 | 71 | ESE | 0.7 | 0.31 | | 0 | 0 | | | 0 | 0 | Light mist | Antonio Ravé, Directo. |
| Bilbao, Met. Obs'y | 30.43 | 772.9 | 30.49 | 774.4 | 59.2 | 15.1 | 83 | NW | 1.7 | 0.78 | | 3 | 7 | E | | 0.382 | 9.7 | Covered | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.41 | 696.3 | | | 51.4 | 10.8 | 75 | N | 7.9 | 3.52 | | 0 | 7 | | | 0 | 0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 28.05 | 712.4 | 30.28 | 769.1 | 61.2 | 16.2 | 43 | E | 16.4 | 7.33 | | 0 | 8 | | | 0 | 0 | Almost cov. | The Staff. |
| Murcia, Met. Obs'y | 30.06 | 763.4 | 30.21 | 767.2 | 65.8 | 18.8 | 68 | ENE | 8.9 | 3.97 | | 3 | 5 | WSW | | 0.031 | 0.80 | Almost cov. | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.48 | 748.9 | 30.39 | 771.8 | 59.2 | 15.1 | 64 | NE | 7.0 | 3.14 | | 1 | 0 | NE | | 0.020 | 0.5 | Clear | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.96 | 761.0 | 30.03 | 762.7 | 73.2 | 22.9 | 91 | Calm | 0 | 0 | | 5c | 0 | WSW | | 0 | 0 | Fair | Benito Vines, S. J. |
| San Fernando, Naval Obs'y | 30.14 | 765.7 | 30.25 | 768.2 | 59.7 | 15.4 | 73 | WNW | 16.7 | 7.4 | | 0 | 3 | | W | 0.095 | 2.4 | | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 30.04 | 762.9 | 30.13 | 765.2 | 77.0 | 25.0 | 84 | SE | 5.0 | 2.23 | | 4kn | 3kn | SE | SE | 0 | 0 | Cloudy | Leonardo de Tejeda, Chief of Engineers. |

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

## SWEDISH SERIES.

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

| STATIONS. | Barometer. Corrected for instru-m'tal error and temperature. Inches. | Barometer. Corrected for instru-m'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.45 | 748.1 | 29.49 | 749.1 | 27.7 | — 2.4 | ..... | N | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.58 | 751.3 | 29.63 | 752.6 | 32.4 | 0.2 | 43 | N | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.64 | 752.8 | 29.69 | 754.1 | 35.2 | 1.8 | 37 | N | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.36 | 745 7 | 29.54 | 750.2 | 34.9 | 1.6 | 96 | N | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.244 | 6.2 | Raining | |
| Wisby | 29.41 | 746.9 | 29.47 | 748.4 | 40.3 | 4.6 | 92 | NW | ..... | ..... | 7 | ..... | 7 | ..... | ..... | 0.248 | 6.3 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.52 | 749.9 | 29.60 | 751.8 | 32.7 | 0.4 | 86 | N | 20.1 | 9.0 | ..... | ..... | 10 | ..... | N | 0.010 | 0.25 | ..... | Dr. Hildebrandsson. |

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

## SWISS SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.93 | 734.7 | 30.35 | 770.9 | 55.0 | 12.8 | 60 | N | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| Zurich | 28.74 | 730.1 | 30.40 | 772.1 | 49.3 | 9.6 | 85 | SE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0.047 | 1.2 | Cloudy | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +0.3 mm.; Thermometer, +0.8 cent.; Relative Humidity, —5 per cent.

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

## TURKISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.12 | 765.0 | 49.1 | 9.5 | 72 | SW | 7 | 3.0 | ..... | ..... | 10 | ..... | SW | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 30.27 | 768.9 | 61.0 | 16.1 | ..... | W | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | B. Stefanides. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | Imperial Observatory. |
| Beirut, (Syria,) Lee Obs'y | 30.09 | 764.3 | 30.21 | 767.4 | 58.8 | 14.9 | 57 | NNW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.08 | 738.6 | 29.39 | 746.5 | 35 | 1.7 | ..... | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0.14 | 3.6 | Light rain | W. R. Bigg. |
| *Chatham, N B | ..... | ..... | 29.66 | 753.4 | 25 | — 3.9 | 100 | NE | 2 | 0.9 | ..... | ..... | 10n | ..... | NE | 0.16 | 4.1 | Light snow | G. A. Blair. |
| Charlottetown, P. E. Island | 29.71 | 754.6 | 29.75 | 755.6 | 31 | — 0.6 | 97 | SE | 16 | 7.2 | ..... | ..... | 10n | ..... | Calm | 0.250 | 6.35 | Sleeting | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.17 | 740.9 | 30.37 | 771.4 | 30.9 | — 0.6 | 98 | NE | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0.048 | 1.22 | Drizzling | James Smith, M. A. |
| Dalhousie, N. B | 29.54 | 750.3 | ..... | ..... | ..... | ..... | ..... | E | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.20 | 5.1 | Snowing | H. A. Johnson. |
| Esquimault, B. C | 29.76 | 755.9 | 29.81 | 757.2 | 46.8 | 7.9 | 92 | N | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Cloudy | W. H. Bevis. |
| *Father Point, Quebec | 29.61 | 749.5 | 29.58 | 751.3 | 21 | — 6.1 | 86 | E | 17 | 7.6 | ..... | ..... | 10n | ..... | SW | 0.01 | 0.3 | Threatening | J. McWilliams. |
| Fredericton, N. B | 29.55 | 750.6 | 29.62 | 752.3 | 33.2 | 0.7 | 97 | E | 2 | 0.9 | ..... | ..... | 10n | ..... | ..... | 0.31 | 7.9 | Raining | Prof. Harrison. |
| *Fort Garry Manitoba | 29.29 | 744.0 | 30.18 | 766.6 | 17 | — 8.3 | 92 | N | 7 | 3.1 | ..... | 5ck | 2ks | N | N | 0 | 0 | Fair | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.19 | 716.0 | 29.26 | 743.7 | 41 | 5.0 | 100 | S | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0.09 | 2.3 | Cloudy | James Grant. |
| *Halifax, N. S | 29.08 | 738.9 | 29.82 | 757.4 | 33 | 0.6 | 98 | SE | 8 | 3.6 | ..... | ..... | 10n | ..... | ..... | 0.234 | 5.94 | Heavy rain | F. Allison, M. A. |
| Hamilton, Ontario | 28.96 | 735.6 | 29.33 | 745.0 | 41.7 | 5.4 | 99 | SW | ..... | ..... | 1 | 5cs | 0 | ..... | ..... | 0 | 0 | Cloudy | Geo. Dickson, M. A. |
| Heart's Content, N. F | 30.04 | 763.0 | 30.07 | 763.8 | 15 | — 9.4 | 100 | NW | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | E. Weedon. |
| *Kingston, Ontario | 29.00 | 736.6 | 29.34 | 745.2 | 40 | 4.4 | 96 | SW | 1 | 0.4 | ..... | ..... | Fog | ..... | SW | 0.29 | 7.4 | Foggy | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.74 | 755.4 | 29.78 | 756.4 | 30 | — 1.1 | ..... | S | 8 | 3.6 | ..... | 0f | 0f | ..... | ..... | 0.10 | 2.5 | Snowing | C. H. Rigby. |
| *Montreal, Quebec | 29.21 | 741.9 | 29.42 | 747.3 | 28 | — 2.2 | 94 | NE | 6 | 2.7 | ..... | 10n | ..... | ..... | ..... | 0.09 | 2.3 | Light rain | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 28.58 | 725.9 | 29.28 | 743.7 | 36 | 2.2 | 99 | N | 2 | 0.9 | ..... | 10n | ..... | ..... | ..... | 0.47 | 11.9 | Light rain | Rev. R. Mosley. |
| Peterboro, Ontario | 28.50 | 725.4 | 29.32 | 744.7 | 38.7 | 3.7 | 99 | Calm | ..... | ..... | ..... | 10n | ..... | ..... | ..... | 0.46 | 11.7 | Dense fog | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 28.65 | 727.7 | 29.34 | 745.2 | 39 | 3.9 | 84 | SW | 8 | 3.6 | ..... | 10ks | ..... | ..... | SW | 0.28 | 7.1 | Cloudy | H. Morgan. |
| Port Hastings, N. S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Peter Grant. |
| Port Stanley, Ontario | 28.70 | 729.0 | 29.34 | 745.2 | 39 | 3.9 | 91 | W | 12 | 5.4 | ..... | 10n | ..... | ..... | SW | 0.33 | 8.4 | Light rain | M. Payne. |
| *Quebec, Quebec | 29.20 | 741.7 | 29.53 | 750.0 | 23 | — 5.0 | 100 | NE | ..... | ..... | 7 | 10n | ..... | ..... | NE | 0 | 0 | Threatening | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 28.88 | 733.5 | 29.35 | 745.5 | 32 | 0.0 | 95 | Calm | 0 | 0 | ..... | 10n | ..... | ..... | Calm | 0.19 | 4.8 | Light rain | W. H. McIntyre. |
| St. Andrews, N. B | 29.52 | 740.8 | 29.57 | 751.1 | 39 | 3.9 | 95 | SW | 1 | 0.4 | ..... | 10n | ..... | ..... | ..... | 0.22 | 5.6 | Foggy | Dr. Gove. |
| St. John, N. B | 29.49 | 749.0 | 29.66 | 753.4 | 35 | 1.7 | 80 | SE | 3 | 1.3 | ..... | 10n | ..... | ..... | ..... | 1.170 | 29.72 | Raining | G. Murdock, C. E. |
| *Saugeen, Ontario | 28.57 | 725.7 | 29.29 | 744.0 | 37 | 2.8 | 95 | Calm | 0 | 0 | ..... | 10s | ..... | ..... | ..... | 0.65 | 16.5 | Heavy rain | K. Stewart. |
| Stayner, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.15 | 3.8 | ..... | R. J. Cole. |
| Stratford, Ontario | 28.01 | 711.4 | 29.20 | 744.0 | 40.0 | 4.4 | 90 | SW | 5 | 2.2 | ..... | 10 | ..... | ..... | ..... | 0.318 | 8.07 | Rain & fog | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.98 | 761.5 | 30.01 | 762.2 | 23 | — 5.0 | 86 | SE | 6 | 2.7 | ..... | 10n | ..... | ..... | ..... | Inap. | Inap. | Light snow | T. C. Hill. |
| *Toronto, Ontario | 28.94 | 735.1 | 29.32 | 744.7 | 38 | 3.3 | 100 | SW | 5 | 2.2 | ..... | 8cs | 2s | W | W | 0.32 | 8.1 | Foggy | Magnetic Observatory. |
| Windsor, N S | 29.54 | 750.3 | 29.63 | 752.6 | 37.0 | 2.8 | 100 | SE | 20 | 8.9 | ..... | 10n | ..... | ..... | ..... | 0.52 | 13.2 | Raining | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 15.0 | — 9.4 | ..... | NW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182ft. or 360.3 m.

UNITED STATES SERIES.

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

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

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0–10 | CLOUDS. Amount. Up'er 0–10 | CLOUDS. Amount. Low'r 0–10 | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.20 | 741.7 | 29.42 | 747.3 | 43 | 6.1 | 96 | SW | 3 | 1.3 | ..... | ..... | Fog | ..... | Calm | 0.04 | 1.0 | Foggy | |
| Alpena, Michigan | 28.64 | 727.4 | 29.28 | 743.7 | 33 | 0.6 | 100 | NW | 10 | 4.5 | ..... | ..... | 10n | ..... | NW | 0.13 | 3.3 | Sleeting | |
| Atlantic City, New Jersey | 29.52 | 749.8 | 29.54 | 750.3 | 46 | 7.8 | 100 | SW | 16 | 7.2 | ..... | ..... | Fog | ..... | ..... | 0.23 | 5.8 | Foggy | |
| Augusta, Georgia | 29.53 | 750.0 | 29.71 | 754.6 | 61 | 16.1 | 82 | SW | 8 | 3.6 | ..... | 0 | 5ks;sm' | ..... | SW;Calm | 0 | 0 | Fair | |
| Baltimore, Maryland | 29.46 | 748.3 | 29.51 | 749.5 | 54 | 12.2 | 93 | W | 3 | 1.3 | ..... | ..... | 10n | ..... | W | 0.68 | 17.3 | Light rain | |
| Barnegat, New Jersey | 29.48 | 748.8 | 29.51 | 749.5 | 46 | 7.8 | 100 | SW | 21 | 9.4 | ..... | ..... | Fog | ..... | Calm | 0.30 | 7.6 | Foggy | |
| Bismarck, Dakota | 28.34 | 719.8 | 30.20 | 767.1 | 25 | — 3.9 | 75 | N | 16 | 7.2 | ..... | ..... | 10s | ..... | N | Inap. | Inap. | Cloudy | |
| Boise City, Idaho | 27.35 | 694.7 | 30.23 | 767.8 | 32 | 0.0 | 79 | W | 2 | 0.9 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Boston, Massachusetts | 29.38 | 746.2 | 29.53 | 750.0 | 50.5 | 10.3 | 90 | S | 14 | 6.3 | ..... | ..... | 10s | ..... | SW | 0.68 | 17.3 | Cloudy | |
| Brackettville, Texas | 29.13 | 739.9 | 30.20 | 767.1 | 44 | 6.7 | 80 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 28.99 | 736.3 | 30.04 | 763.0 | 24 | — 4.4 | 87 | N | 28 | 12.5 | ..... | ..... | 10s | ..... | N | Inap. | Inap. | Cloudy | |
| Brownsville, Texas | 30.23 | 767.8 | 30.30 | 769.6 | 55 | 12.8 | 68 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 28.60 | 726.4 | 29.27 | 743.4 | 47 | 8.3 | 85 | SW | 7 | 3.1 | ..... | ..... | 10s | ..... | SW | 0.50 | 12.7 | Cloudy | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Burlington, Vermont | 29.17 | 740.9 | 29.42 | 747.3 | 44 | 6.7 | 92 | S | 11 | 4.9 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Cairo, Illinois | 29.35 | 745.5 | 29.74 | 755.4 | 46 | 7.8 | 77 | W | 15 | 6.7 | ..... | ..... | 10n | ..... | NW | Inap. | Inap. | Light rain | |
| Camp Grant, Arizona | 25.40 | 645.2 | 30.19 | 766.8 | 40 | 4.4 | 48 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | 27.01 | 686.0 | 30.50 | 774.7 | 36 | 2.2 | 61 | NW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.51 | 698.7 | 30.08 | 764.0 | 41 | 5.0 | 57 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 29.71 | 754.6 | 29.72 | 754.9 | 56 | 13.3 | 94 | S | 24 | 10.7 | ..... | ..... | 10s | ..... | SW | 0.20 | 5.1 | Light rain | |
| Cape Henry, Virginia | 29.56 | 750.8 | 29.58 | 751.3 | 61 | 16.1 | 94 | SW | 14 | 6.3 | ..... | 2k | 8s | SW | SW | 0.18 | 4.6 | Cloudy | |
| Cape Lookout, N. Carolina | 29.70 | 754.4 | 29.72 | 754.9 | 61 | 16.1 | 94 | SW | 22 | 9.8 | ..... | ..... | 10s | ..... | SW | 0.19 | 4.8 | Threatening | |
| Cape May, New Jersey | 29.48 | 748.8 | 29.51 | 749.5 | 48 | 8.9 | 100 | S | 30 | 13.4 | ..... | ..... | Fog | ..... | S | 0.05 | 1.3 | Foggy | |
| Charleston, South Carolina | 29.71 | 754.6 | 29.78 | 756.4 | 60 | 15.6 | 94 | SW | 16 | 7.2 | ..... | ..... | 10s | ..... | SW | 0.19 | 4.8 | Cloudy | |
| Cheyenne, Wyoming | 24.15 | 613.4 | 30.09 | 764.3 | 25 | — 3.9 | 87 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 28.75 | 730.2 | 29.43 | 747.5 | 36 | 2.2 | 90 | NW | 14 | 6.3 | ..... | ..... | 10n | ..... | NW | 0.41 | 10.4 | Light rain | |
| Cincinnati Ohio | 28.80 | 731.5 | 29.42 | 747.3 | 47 | 8.3 | 73 | W | 14 | 6.3 | ..... | ..... | 10ks | ..... | W | 0.42 | 10.7 | Threatening | |
| Clevelana, Ohio | 28.63 | 727.2 | 29.32 | 744.7 | 47 | 8.3 | 85 | S | 12 | 5.4 | ..... | ..... | 10n | ..... | S | 0.19 | 4.8 | Light rain | |
| Concho, Texas | 28.27 | 718.0 | 30.02 | 762.5 | 35 | 1.7 | 52 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.71 | 754.6 | 30.19 | 766.8 | 45 | 7.2 | 61 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Davenport, Iowa | 29.00 | 736.6 | 29.63 | 752.6 | 41 | 5.0 | 82 | NW | 13 | 5.8 | ..... | ..... | 10n | ..... | NW | 0.35 | 8.9 | Light rain | |
| Deadwood, Dakota | 25.55 | 649 0 | ..... | ..... | 31 | — 0.6 | 69 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Denison, Texas | 29.33 | 745.0 | 30.16 | 766.1 | 44 | 6.7 | 60 | NW | 12 | 5.4 | ..... | 1cs | 0 | NW | ..... | 0 | 0 | Clear | |
| Denver, Colorado | 24.51 | 632.7 | 30.15 | 765.3 | 40 | 4.4 | 14 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Detroit, Michigan | 28.61 | 726 7 | 29.26 | 743.2 | 42 | 5.6 | 91 | SW | 4 | 1.8 | ..... | ..... | 10s | ..... | SW | 0.25 | 6.3 | Cloudy | |
| Dodge City, Kansas | 27.51 | 698.7 | 29.89 | 759.2 | 33 | 0.6 | 79 | NW | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 28.93 | 734.8 | 29.62 | 752.3 | 29 | 3.9 | 91 | N | 10 | 4.5 | ..... | ..... | 10n | ..... | N | 0.19 | 4.8 | Light rain | |
| Duluth, Minnesota | 29.11 | 739.4 | 29.80 | 756.9 | 32 | 0.0 | 79 | N | 7 | 3.1 | ..... | ..... | 10s | ..... | N | Inap. | Inap. | Cloudy | |
| Eagle Pass, Texas | 29.50 | 749.3 | 30.18 | 766.6 | 42 | 5.6 | 83 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 29.51 | 749.5 | 29.58 | 751.3 | 40 | 4.4 | 100 | SW | 16 | 7.2 | ..... | ..... | 10n;fg | ..... | ..... | 0.40 | 10.2 | Light rain | |
| Erie, Pennsylvania | 28.60 | 726.4 | 29.28 | 743.7 | 50 | 10.0 | 79 | S | 1 | 0.4 | ..... | ..... | 10s | ..... | SW | 0.07 | 1.8 | Cloudy | |
| Escanaba, Michigan | 28.90 | 734.0 | 29.56 | 750.8 | 32 | 0.0 | 79 | NW | 28 | 12.5 | ..... | ..... | 10s | ..... | NW | 0.07 | 1.8 | Cloudy | |
| Florence, Arizona | 28.48 | 723.4 | 30.08 | 764.0 | 45 | 7.2 | 60 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | 24.29 | 617.0 | 30.29 | 769.4 | 29 | — 1.7 | 59 | N | 15 | 6.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.78 | 654.8 | ..... | ..... | 26 | — 3.3 | 51 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.47 | 748.5 | 30.02 | 762.5 | 41 | 5.0 | 74 | N | 23 | 10.3 | ..... | ..... | 10s | ..... | N | Inap. | Inap. | Cloudy | |
| Fort Griffin, Texas | 28.96 | 735 6 | 30.29 | 769.4 | 40 | 4.4 | 48 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.27 | 743.4 | 29.31 | 744.5 | —10 | —23.3 | 100 | E | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Sill, Indian Territory | 28.95 | 735.3 | 30.10 | 764.5 | 42 | 5.6 | 58 | NW | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Galveston, Texas | 30.15 | 765.8 | 30.20 | 767.1 | 53 | 11.7 | 53 | NW | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 28.73 | 729.7 | 29.37 | 746.0 | 36 | 2.2 | 90 | N | 14 | 6.3 | ..... | ..... | 10n | ..... | Calm | 0.84 | 21.3 | Light snow | |
| Indianapolis, Indiana | 28.66 | 728.0 | 29.42 | 747.3 | 43 | 6.1 | 83 | W | 7 | 3.1 | ..... | ..... | 10s | ..... | W | 0.28 | 7.1 | Threatening | |
| Indianola, Texas | 30.25 | 768.3 | 30.28 | 769.1 | 55 | 12.8 | 56 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksboro, Texas | 29.09 | 738.9 | 30.26 | 768.6 | 44 | 6.7 | 45 | W | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 29.80 | 756.9 | 29.83 | 757.7 | 65 | 18.3 | 89 | S | 12 | 5.4 | ..... | 8k | 0 | SW | ..... | Inap. | Inap. | Cloudy | |
| Keokuk, Iowa | 29.05 | 737.9 | 29.68 | 753.9 | 37 | 2.8 | 90 | NW | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.55 | 14.0 | Light rain | |
| Key West, Florida | 29.97 | 761.2 | 30.00 | 762.0 | 74 | 23.3 | 85 | S | 12 | 5.4 | ..... | 5c | 2s | SW | Calm | 0.21 | 5.3 | Fair | |
| Kittyhawk, North Carolina | 29.65 | 753.1 | 29.67 | 753.6 | 59 | 15.0 | 100 | SW | 22 | 9.8 | ..... | ..... | 10n | ..... | SW | 0.24 | 6.1 | Light rain | |
| Knoxville, Tennessee | 28.65 | 727.7 | 29.63 | 752.6 | 49 | 9.4 | 64 | SW | 10 | 4.5 | ..... | ..... | 10ks | ..... | SW | 0.51 | 13.0 | Cloudy | |
| La Crosse, Wisconsin | 28.93 | 734.8 | 29.67 | 753.6 | 35 | 1.7 | 90 | N | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.22 | 5.6 | Light snow | |
| La Mesilla, New Mexico | 26.25 | 666.7 | 30.40 | 772.1 | 34 | 1.1 | 70 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.89 | 759.2 | 30.24 | 768.1 | 46 | 7 8 | 69 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 29.04 | 737.6 | 29.90 | 759.4 | 36 | 2.2 | 80 | NW | 16 | 7.2 | ..... | ..... | 10ks | ..... | NW | 0.03 | 0.8 | Cloudy | |
| Los Angeles, California | 29.72 | 754.9 | 30.06 | 763.5 | 50 | 10.0 | 65 | N | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Louisville, Kentucky | 28.95 | 735.3 | 29.50 | 749.3 | 45 | 7.2 | 84 | SW | 12 | 5.4 | ..... | ..... | 10n | ..... | SW | 0.73 | 18.5 | Light rain | |
| Lynchburg, Virginia | 28.89 | 733.8 | 29.54 | 750.3 | 53 | 11.7 | 86 | SW | 2 | 0.9 | ..... | 0 | 8ks | ..... | Calm | 0.55 | 14.0 | Cloudy | |
| Maricopa Wells, Arizona | ..... | ..... | ..... | ..... | 38 | 3.3 | 63 | N | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 28.93 | 734.8 | 29.62 | 752.3 | 31 | — 0.6 | 79 | NW | 20 | 8.9 | ..... | ..... | 10s | ..... | NW | 0.23 | 5.8 | Cloudy | |
| Mason, Texas | 28.63 | 727.6 | 30.46 | 773.7 | 45 | 7.2 | 48 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.51 | 749.5 | 29.83 | 757.7 | 48 | 8.9 | 64 | NW | 12 | 5.4 | ..... | ..... | 10s | ..... | NW | 0.05 | 1.3 | Cloudy | |
| Milwaukee, Wisconsin | 28.78 | 731.0 | 29.46 | 748.3 | 36 | 2.2 | 90 | N | 21 | 9.4 | ..... | ..... | 10s | ..... | N | 0.62 | 15.7 | Cloudy | |
| Mobile, Alabama | 29.89 | 759.2 | 29.94 | 760.5 | 55 | 12.8 | 50 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Montgomery, Alabama | 29.60 | 751.8 | 29.84 | 757.9 | 55 | 12.2 | 57 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.30 | 7.6 | Clear | |
| Morgantown, West Virginia | 28.39 | 721.1 | 29.40 | 746.7 | 48 | 8.9 | 85 | SW | 13 | 5.8 | ..... | ..... | 10n | ..... | SW | 0.61 | 15.5 | Light rain | |
| Mt. Washington, N. H. | 23.30 | 591.8 | 29.66 | 753.4 | 32 | 0.0 | 100 | W | 36 | 16.1 | ..... | ..... | Fog | ..... | W | 0.35 | 8.9 | Foggy | |
| Nashville, Tennessee | 29.16 | 740.7 | 29.69 | 754.1 | 47 | 8.3 | 85 | W | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0.26 | 6.6 | Cloudy | |
| New Haven, Connecticut | 29.40 | 746.7 | 29.51 | 749.5 | 51 | 10.6 | 93 | SW | 10 | 4.5 | ..... | ..... | 10n;fg | ..... | ..... | 0.55 | 14.0 | Light rain | |
| New London, Connecticut | 29.51 | 749.5 | 29.56 | 750.8 | 49 | 9.4 | 100 | SW | 18 | 8.0 | ..... | ..... | Fog | ..... | Calm | 0.21 | 5.3 | Foggy | |
| New Orleans, Louisiana | 29.95 | 760.7 | 30.01 | 762.2 | 55 | 12.8 | 45 | W | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Newport, Rhode Island | 29.52 | 749.8 | 29.57 | 751.1 | 46 | 7.8 | 100 | S | 8 | 3.6 | ..... | ..... | 10n | ..... | ..... | 0.49 | 12.4 | Light rain | |
| New York, New York | 29.30 | 744.2 | 29.47 | 748.5 | 60 | 10.0 | 93 | SE | 12 | 5.4 | ..... | ..... | 10n;fg | ..... | S | 0.19 | 4.8 | Light rain | |
| Norfolk, Virginia | 29.56 | 750.8 | 29.61 | 752.1 | 60 | 15.6 | 94 | SW | 17 | 7.6 | ..... | 2k | 5ks | Calm | SW | 0.17 | 4.3 | Cloudy | |
| North Platte, Nebraska | 27.20 | 690 9 | 29.86 | 758 4 | 29 | — 1.7 | 78 | NW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 29.75 | 755.6 | 29.79 | 756.7 | 40 | 4.4 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Omaha, Nebraska | 28.80 | 731.5 | 29.91 | 759.7 | 33 | 0.6 | 89 | NW | 12 | 5.4 | ..... | ..... | 10s | ..... | NW | 0.11 | 2.8 | Cloudy | |
| Oswego, New York | 29.04 | 737.6 | 29.35 | 745.5 | 48 | 8.9 | 85 | S | 3 | 1.3 | ..... | 2c | 8s | SW | SW | 0.39 | 9.9 | Fair | |
| Pembina, Dakota | 29.26 | 743.2 | 30.14 | 765.5 | 21 | — 6.1 | 86 | NW | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Philadelphia, Pennsylvania | 29.34 | 745.2 | 29.44 | 747.8 | 56 | 13.3 | 100 | S | 20 | 8.9 | ..... | ..... | 10n | ..... | SW | 0.08 | 2.0 | Light rain | |
| Phœnix, Arizona | 28.99 | 736.3 | 30.86 | 783.8 | 46 | 7.8 | 69 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.71 | 449.8 | 29.92 | 760.0 | — 2 | —18.9 | 67 | NE | 52 | 23.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pioche, Nevada | 24.25 | 615.9 | 30.02 | 762.5 | 29 | — 1.7 | 66 | S | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 28.57 | 725.7 | 29.35 | 745.5 | 49 | 9.4 | 85 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | W | 0.36 | 9.1 | Cloudy | |
| Port Huron, Michigan | 28.60 | 726.4 | 29.24 | 742.7 | 42 | 5.6 | 91 | SW | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.65 | 16.5 | Light rain | |
| Portland, Maine | 29.50 | 749.3 | 29.65 | 750.6 | 39 | 3.9 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | ..... | 0.44 | 11.2 | Dense fog | |
| Portland, Oregon | 29.73 | 755.1 | 29.83 | 757.7 | 53 | 11.7 | 42 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Prescott, Arizona | 24.96 | 634.0 | 30.32 | 770.1 | 27 | — 2.8 | 53 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Punta Rassa, Florida | 29.95 | 760.7 | 29.96 | 761.0 | 69 | 20.6 | 84 | SW | 16 | 7.2 | ..... | ..... | 10ks | ..... | SE | 0.05 | 1.3 | Cloudy | |
| Red Bluff, California | 29.66 | 753.4 | 30.02 | 762.5 | 49 | 9.4 | 85 | E | 1 | 0.4 | ..... | 5k | 0 | S | ..... | 0 | 0 | Fair | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rochester, New York | 28.73 | 729.7 | 29.32 | 744.7 | 47 | 8.3 | 92 | SW | 6 | 2.7 | ..... | ..... | 10s | ..... | W | 0.44 | 11.2 | Cloudy | |
| Roseburg, Oregon | 29.19 | 741.4 | 29.76 | 755.9 | 42 | 5.6 | 96 | Calm | 0 | 0 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Sacramento, California | 29.93 | 760.2 | 30.01 | 762.2 | 51 | 10.6 | 83 | SE | 4 | 1.8 | ..... | 1k | 0 | SW | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.11 | 739.4 | 29.69 | 754.1 | 41 | 5.0 | 74 | W | 24 | 10.7 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| St. Marks, Florida | 29.87 | 758.7 | 29.89 | 759.2 | 54 | 12.2 | 86 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.17 | 4.3 | Clear | |
| St. Paul, Minnesota | 28.91 | 734.3 | 29.75 | 755.6 | 32 | 0.0 | 74 | NW | 12 | 5.4 | ..... | ..... | 10s | ..... | NW | 0.18 | 4.6 | Cloudy | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.93 | 658.6 | 30.26 | 768.6 | 33 | 0.6 | 51 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Antonio, Texas | 29.58 | 751.3 | 30.19 | 766.8 | 47 | 8.3 | 55 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Diego, California | 30.03 | 762.7 | 30.10 | 764.5 | 51 | 10.6 | 72 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandusky, Ohio | 28.66 | 728.0 | 29.31 | 744.5 | 45 | 7.2 | 92 | SW | 10 | 4.5 | ..... | ..... | 10n | ..... | SW | 0.13 | 3.3 | Light rain | |
| Sandy Hook, New Jersey | 29.46 | 748.3 | 29.48 | 748.8 | 53 | 11.7 | 93 | S | 19 | 8.5 | ..... | ..... | 10ks | ..... | SW | 0.18 | 4.6 | Cloudy | |
| San Francisco, California | 29.95 | 760.7 | 30.01 | 762.2 | 54 | 12.2 | 74 | S | 12 | 5.4 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear | |
| Santa Fé, New Mexico | 23.44 | 595.4 | 29.98 | 761.5 | 22 | — 5.6 | 65 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 29.68 | 753.9 | 29.77 | 756.1 | 64 | 17.8 | 89 | SW | 6 | 2.7 | ..... | 0 | 8s | ..... | SW | 0.05 | 1.3 | Clearing | |
| Shreveport, Louisiana | 29.83 | 757.7 | 30.05 | 763.3 | 49 | 9.4 | 50 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 29.70 | 754.4 | 29.78 | 755.1 | 59 | 15.0 | 94 | SW | 20 | 8.9 | ..... | ..... | 10n | ..... | SW | 0.08 | 2.0 | Light rain | |
| Springfield, Massachusetts | 29.26 | 743.2 | 29.38 | 746.2 | 48 | 8.9 | 100 | S | 7 | 3.1 | ..... | ..... | 10n | ..... | S | 0.46 | 11.7 | Light rain | |
| Stockton, Texas | 27.28 | 692.9 | 30.28 | 769.1 | 32 | 0.0 | 32 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.49 | 749.0 | 29.55 | 750.6 | 43 | 6.1 | 92 | S | 12 | 5.4 | ..... | ..... | 10s | ..... | W | 0.50 | 12.7 | Cloudy | |
| Toledo, Ohio | 28.61 | 726.7 | 29.26 | 743.2 | 45 | 7.2 | 92 | SW | 12 | 5.4 | ..... | ..... | 10n | ..... | SW | 0.08 | 2.0 | Light rain | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 35 | 1.7 | 52 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tybee Island, Georgia | 29.73 | 755.1 | 29.76 | 755.9 | 59 | 15.0 | 94 | S | 12 | 5.4 | ..... | 5k | Fog | W | Calm | 0.25 | 6.3 | Fair | |
| Umatilla, Oregon | 29.61 | 752.1 | ..... | ..... | 43 | 6.1 | 75 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Vicksburg, Mississippi | 29.68 | 753.9 | 29.94 | 760.5 | 53 | 11.7 | 48 | NW | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Virginia City, Montana | 24.44 | 620.8 | 29.92 | 760.0 | 20 | — 6.7 | 70 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Visalia, California | 29.74 | 755.4 | 30.12 | 765.0 | 45 | 7.2 | 92 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C | 29.42 | 747.3 | 29.53 | 750.0 | 55 | 12.8 | 97 | S | 10 | 4.5 | ..... | ..... | 10n | ..... | W | 0.60 | 15.2 | Light rain | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 37 | 2.8 | 71 | W | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 29.62 | 752.3 | 29.69 | 754.1 | 62 | 16.7 | 94 | SW | 24 | 10.7 | ..... | ..... | 10s | ..... | SW | 0.03 | 0.8 | Cloudy | |
| Winnemucca, Nevada | 25.70 | 652.8 | 30.06 | 763.5 | 38 | 3.3 | 54 | N | 12 | 5.4 | ..... | 5k | 0 | SW | ..... | 0 | 0 | Fair | |
| Wood's Holl, Mass | 29.56 | 750.8 | 29.61 | 752.1 | 47 | 8.3 | 100 | S | 20 | 8.9 | ..... | ..... | 10n | ..... | Calm | 0.86 | 21.8 | Heavy rain | |
| Yankton, Dakota | 28.70 | 729.0 | 30.04 | 763.0 | 29 | — 1.7 | 83 | NW | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | |
| Yuma, Arizona | 29.99 | 761.7 | 30.16 | 766.1 | 51 | 10.6 | 53 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 30.04 | 763.0 | 30.10 | 764.5 | 1.5 | —16.9 | 86 | NW | 10 | 4.5 | ..... | 3c | 2s | NW | ..... | 0 | 0 | Cloudy | J. Fortescue, W. Wood |
| Havana, Cuba, W. I. | 29.98 | 761.5 | 30.00 | 762.0 | 75 | 23.9 | 95 | SW | 2.4 | 1.1 | ..... | 8c | 0 | SW | ..... | 0 | 0 | Fair | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.18 | 766.6 | 30.19 | 766.8 | 79 | 26.1 | 86 | Calm | 0 | 0 | ..... | 2c. | 2s | SE | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.91 | 759.7 | 29.99 | 761.7 | 81.5 | 27.5 | ..... | NE | 10 | 4.5 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | ..... | ..... | 30.10 | 764.5 | 82 | 27.8 | 75 | E | ..... | ..... | 2 | 5k | 7ks | E | ..... | 0 | 0 | ½ cloudy | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | 30.08 | 763.9 | 30.08 | 764.1 | 84.2 | 29 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.25 | 641.3 | ..... | ..... | 70.0 | 21.1 | 76 | Calm | ..... | ..... | 0 | 0 | 1ks | ..... | ..... | 0 | 0 | ..... | Thomas Herran |
| Honolulu, Oahu, H. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Daniel Smith. |
| Makawao, Maui, H. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. L. Clarke. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medillin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.6 m.; Concho, 1, 750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.6 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.6 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,916.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,646 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.. Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington 6.36 in.; Pike's Peak, 12.21 in; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.99 | 761.7 | 51 | 10.6 | 50 | 10.0 | 93 | E | 3 | 1.3 | ..... | ..... | 6k | ..... | SE | 0 | 0 | ..... | ..... | Threatening | |
| Navy Yard, Pensacola, Fla. | 30.09 | 764.3 | 61 | 16.1 | 60 | 15.6 | 94 | WSW | 3 | 1.3 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Navy Yard, Portsmouth, N.H | 29.59 | 751.6 | 56 | 13.3 | 39 | 3.9 | 82 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.8 | 20. | ..... | ..... | Dense fog | |
| Naval Hospital, Yokohama, Japan | 30.30* | 769.6* | 48 | 8.9 | 38 | 3.3 | 45 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Adams. Panama | 29.98 | 761.5 | 85 | 29.4 | 84 | 28.9 | 87 | N | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy | |
| Alliance, Smyrna, Turkey | 30.20‡ | 767.1‡ | ..... | ..... | 62 | 16.7 | 61 | SSE | ..... | ..... | 2–3 | ..... | 7 | ..... | S | ..... | ..... | ..... | ..... | Cloudy | |
| Ashuelot. Shanghai, China | 30.38* | 771.6* | 46 | 7.8 | 41 | 5.0 | 91 | SE | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Raining | |
| Canonicus, New Orleans, La | 29.99 | 761.7 | 44 | 6.7 | 55 | 12.8 | 93 | W | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Colorado, New York, N. Y. | 29.46‡ | 748.3‡ | ..... | ..... | 49 | 9.4 | 100 | S | 11 | 4.9 | ..... | ..... | 10 | ..... | SSW | 0.19 | 4.8 | ..... | ..... | Foggy | |
| Constitution, Off Delaware Breakwater. | 29.52‡ | 749.8‡ | ..... | ..... | 54 | 12.2 | 93 | SSW | ..... | ..... | 7 | ..... | 9 | ..... | SW | ..... | ..... | Mod'ate | S | Cloudy | |
| Despatch, Constantinople, Turkey. | 30.28 | 769.1 | 80 | 26.7 | 50 | 10.0 | 79 | WSW | ..... | ..... | 2 | ..... | 8 | ..... | SW | ..... | ..... | ..... | ..... | Cloudy | |
| Enterprise, New Orleans, La | 30.00‡ | 762.0‡ | ..... | ..... | 56 | 13.3 | 62 | W | ..... | ..... | 2–3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Franklin, Norfolk, Va | 29.62‡ | 752.3‡ | ..... | ..... | 64 | 17.8 | 78 | SSW | 4 | 1.8 | ..... | ..... | 8 | ..... | ..... | 2. | 51. | ..... | ..... | D. clouds | |
| Guard, Porto Grande, Cape Verde Islands. | 30.08 | 764.0 | 76 | 24.4 | 75 | 23.9 | 64 | NNE | ..... | ..... | 2–3 | ..... | 0 | ..... | ..... | ..... | ..... | Mod'ate Ground Swell | NW | Clear | |
| Marion, Piraeus, Greece | 30.20 | 767.1 | 61 | 16.1 | 62 | 16.7 | 61 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Michigan, Erie, Pa | 28.88 | 733.5 | 70 | 21.1 | 49 | 9.4 | 64 | SSW | ..... | ..... | 3 | ..... | 10 | ..... | SW | ..... | ..... | ..... | ..... | Cloudy | |
| Monongahela, Manila, Philippine Islands. | 30.15* | 765.8* | 82 | 27.8 | 82 | 27.8 | 83 | N&E | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | Smooth | ..... | D. clouds | |
| New Hampshire, Port Royal, S. C. | 29.96 | 761.0 | 62 | 16.7 | 60 | 15.6 | 94 | SW | 5 | 2.2 | ..... | ..... | 5 | ..... | WSW | 0.1 | 3. | ..... | ..... | Clear | |
| Omaha, S. 22° 20′, W. 32° 05′ | 30.07* | 763.8* | 82 | 27.8 | 81 | 27.2 | 78 | NNE | 4 | 1.8 | ..... | ..... | 10 | ..... | N | 4.65 | 118.1 | Slight | N | Showery | |
| Onward, Callao, Peru | 30.04† | 763.0† | ..... | ..... | 73 | 22.8 | 90 | ESE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Long | W | Misty | |
| Ossipee, N. 17° 53′, W. 86° 23′ | 30.07‡ | 763.8‡ | ..... | ..... | 81 | 27.2 | 91 | ESE | ..... | ..... | 2 | ..... | 2 | ..... | ESE | ..... | ..... | Long | E | Misty | |
| Palos, Shanghai, China | 30.42* | 772.7* | 65 | 18.3 | 40 | 4.4 | 91 | ESE | ..... | ..... | 1 | ..... | 6 | ..... | S&E | ..... | ..... | ..... | ..... | Cloudy | |
| Pensacola, Honolulu, H. I. | 30.33 | 770.4 | 72 | 22.2 | 70 | 21.1 | 75 | NE | 2 | 0.9 | ..... | ..... | 8 | ..... | NE | 0 | 0 | ..... | ..... | Fair | |
| Plymouth. Norfolk, Va | 29.69‡ | 754.1‡ | ..... | ..... | 64 | 17.8 | 83 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | SW | ..... | ..... | ..... | ..... | Cloudy | |
| Powhatan, St. Vincent, W. I. | 30.14‡ | 765.5‡ | ..... | ..... | 84 | 28.9 | 96 | ENE | 3.6 | 1.6 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Smooth | ..... | Pleasant | |
| Ranger, N. 21° 46′ E. 118° 54′ | 30.20* | 767.1* | ..... | ..... | 69 | 20.6 | 90 | ENE | ..... | ..... | 2–3 | ..... | 8 | ..... | ENE | ..... | ..... | Mod'ate | W | Showery | |
| Rio Bravo, Brownsville, Texas | ..... | ..... | ..... | ..... | 54 | 12.2 | 93 | W | ..... | ..... | 2 | ..... | 1 | ..... | W | ..... | ..... | ..... | ..... | Clear | |
| Santee, Annapolis, Md | 29.64* | 752.8* | 73 | 22.8 | 53 | 11.7 | 93 | W | ..... | ..... | 2 | ..... | 10 | ..... | W | 0.14 | 3.6 | ..... | ..... | Light rain | |
| Saratoga, Washington, D. C. | 29.54* | 750.3* | ..... | ..... | 56 | 13.3 | ?? | SSW | ..... | ..... | 3 | ..... | 9 | ..... | S&W | Heavy | Heavy | ..... | ..... | Overcast | |
| St. Louis, League Island, Pa | 29.55 | 750.6 | 69 | 20.6 | 55 | 12.8 | 100 | S | 18 | 8.0 | ..... | ..... | 10 | ..... | SW | 0.1 | 3. | ..... | ..... | Raining | |
| Supply, N. 42° 10′, W. 55° 17′ | 30.32 | 770.1 | 47 | 8.3 | 38 | 3.3 | 81 | SSE | ..... | ..... | 2 | ..... | 5 | ..... | SE | ..... | ..... | Smooth | ..... | Fair | |
| Swatara, Port-au-Prince, Hayti | 30.19* | 766.8* | ..... | ..... | 80 | 26.7 | 78 | NNE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Blue sky | |
| Tennessee, N. 18° 57′, E. 114° 18′ | 30.08* | 764.0* | 76 | 24.4 | 76 | 24.4 | 91 | E | 4 | 1.8 | ..... | ..... | 2 | ..... | E | 0.10 | 2.5 | Mod'ate | E | D. clouds | |
| Trenton, Smyrna, Turkey | 30.22‡ | 767.6‡ | ..... | ..... | 60 | 15.6 | 55 | SSE | ..... | ..... | 2 | ..... | 8 | ..... | SE | 0 | 0 | Smooth | ..... | Hazy | |
| Tuscarora, N. 33° 39,′ W. 118° 20′ | 30.22 | 767.6 | 61 | 16.1 | 58 | 14.4 | ?? | NNW | ..... | ..... | 0–1 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear | |
| Vandalia, Constantinople, Turkey. | 30.03‡ | 762.7‡ | ..... | ..... | 51 | 10.6 | 79 | SW | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Cloudy | |
| Wabash, Boston, Mass | 29.56‡ | 750.8‡ | ..... | ..... | 51 | 10.6 | 86 | SW | 12 | 5.4 | ..... | ..... | 10 | ..... | Calm | 0.51 | 13.0 | ..... | ..... | Clearing | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

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

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | Character. | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | |
| S. S. City of Panama, N. 40°, W. 124° 30′ | | | 29.93† | 760.2† | | | | SE | | | 6 | | 10 | | SE | Rough | SE | Stormy | Capt. Seabury. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, Yokohama, Japan | | | | | 36 | 2.2 | | NNE | | | 6 | | | | | | | Blue sky | Capt. Maury. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic, N. 50° 40′, W. 22° 33′ | | | 29.58* | 751.3* | | | | WNW | | | 6 | | 10 | | NW | Heavy | W | Cloudy | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. W. H. Thompson |
| S. S. Celtic, [Channel Off Tuskar Light House, St. George's | | | 30.44† | 773.2† | 53 | 11.7 | 61 | SW | | | 3 | | 10 | SSW | | Smooth | NW | D. clouds | Capt. B. Gleadell. |
| S. S. Germanic, N. 40° 41′, W. 68° 18′ | | | 29.63† | 752.6† | 49 | 9.4 | 50 | SSE | | | 4 | | 10 | | | Light | S | Overcast | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. *Aneroid; corrected for elevation; instrumental error not known. †Aneroid.

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

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, N. 26° 33′, E. 121° 30′ | | | 30.41* | 772.4* | | | | NW | | | 4 | | Heavy | | NW | Smooth | | Misty | Capt. John Metcalf. |
| S. S. Gaelic, N. 31° 00′, W. 162° 00′ | | | 30.27† | 768.8† | 60 | 15.6 | ?? | W | | | 4 | | ks | | W | Heavy | NW | D. clouds | Capt. W. H. Kidley |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

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

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 44° 41′, W. 41° 57′ | S63W | | 30.04 | 763.0 | 32.2 | 0.1 | ?? | WNW | | | 7 | | ks | | NW | Heavy | NW | Snow-squalls | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—CONTINUED.

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

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | Character | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, Off Cape May, N. J | | | 29.51† | 749.5† | 49 | 9.4 | 100 | SW | | | 3 | | Fog | | | Light | SW | Dense fog | Captain Sargent. |
| S. S. Ohio, N. 50° 56′, W. 16° 29′ | | | 30.01 | 762.2 | 54.5 | 12.5 | 90 | S | | | 6 | | 10 | | S | Rough | S | Hazy | Captain Morrison. |
| S. S. Pennsylvania, Liverpool | | | 30.36 | 771.1 | 53 | 11.7 | ?? | W | | | 3 | | 8 | | WNW | | | Overcast | Captain Harris. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. †Aneroid; unreliable, corrected for elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

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

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

**ALLAN LINE MARINE SERIES.**

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

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

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

**MARINE SERIES.** (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Providence, R. I. | | | 29.53 | 750.0 | 49 | 9.4 | 100 | SW | 14 | 6.3 | | | 10n | | SW | | | Rain and fog | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 19′, W. 67° 19′ | | | 29.52 | 749 8 | —40 | —40.0 | 86* | Calm | 0 | 0 | | 8c | 0 | S | | | | Clear | O. T. Sherman. |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Determined by use of hair hygrometer.

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

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

Albert J. Myer

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

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 4, 1878.

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

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:20 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

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

## ALGERIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | | | 30.25 | 768.3 | 62.1 | 16.7 | | NE | | | 6 | | 0 | | | 0 | 0 | Clear | Dr. Ollive. |
| Nemours | | | 30.33 | 770.4 | 64.4 | 18.0 | 67 | E | | | 1 | | 6 | | | 0 | 0 | Cloudy | Michel. |
| Algiers | | | 30.35 | 770.9 | 60.4 | 15.8 | 78 | ENE | | | 3 | | 9 | | | 0 | 0 | Covered | Towilliere. |
| La Calle | | | 30.40 | 772.2 | 66.6 | 19.2 | 63 | NNE | | | 3 | | 5 | | | 0 | 0 | Cloudy | Boulangeot. |
| Tunis | | | 30.39 | 771.8 | 65.7 | 18.7 | 60 | N | | | 6 | | 5 | | | 0 | 0 | Cloudy | Jacques. |
| Sfax | | | 30.37 | 771.5 | 64.4 | 18.0 | | NNE | | | 4 | | 5 | | | 0 | 0 | Cloudy | Gau. |
| Saida | | | 30.27 | 768.9 | 77.4 | 25.2 | 90 | NNE | | | 1 | | 2 | | | 0 | 0 | Fair | Herbin. |
| Tebessa | | | 30.39 | 772.0 | | | | Calm | | | 0 | | 0 | | | 0 | 0 | Clear | Bourgeois. |
| Geriville | | | 30.34 | 770.6 | 54.0 | 12.2 | 87 | NW | | | 7 | | 4 | | | 0 | 0 | Cloudy | Lemaillot. |
| Laghouat | | | 30.38 | 771.7 | 68.0 | 20.0 | 40 | E | | | 1 | | 3 | | | 0 | 0 | Pretty fair | Guyot. |
| Biskra | | | 30.36 | 771.1 | | | | | | | | | | | | | | | Chanvaux. |

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

## AUSTRIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.92 | 760.0 | 30.48 | 774.2 | 55.6 | 13.1 | 51 | SW | | | 2 | | 3 | | | 0 | 0 | | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.68 | 753.8 | 30.48 | 774.2 | 39.9 | 4.4 | 59 | WNW | | | 3 | | 2 | | | 0.020 | 0.5 | | Dr. Wierzbiski. |
| Eperies | 29.39 | 746.4 | 30.30 | 769.5 | 41.0 | 5.0 | 49 | N | | | 6 | | 1cs | | | 0 | 0 | | Julius Mikolik. |
| Gratz | 29.22 | 742.1 | 30.48 | 774.3 | 52.9 | 11.6 | 39 | WNW | | | 5 | | 5 | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28.65 | 727.8 | 30.12 | 765.1 | 40.3 | 4.6 | 61 | N | | | 5 | | 5 | | | 0.043 | 1.10 | | Prof. Reissenberg |
| Kremsmünster | 29.19 | 741.4 | 30.07 | 776.5 | 47.5 | 8.6 | 73 | NW | | | 2 | | 7 | | | 0 | 0 | | Prof. C. Wagner |
| Lemberg | 29.12 | 739.6 | 30.15 | 765.7 | 37.0 | 2.8 | 52 | NW | | | 4 | | 3 | | | 0 | 0 | | Dr. T. Stanecki. |
| Pola | 30.30 | 769.6 | 30.41 | 772.4 | 62.6 | 17.0 | 43 | SSW | | | 1 | | 0 | | | 0 | 0 | | I.R.Hydrographic Office |
| Szathmar | 29.76 | 756.0 | 30.24 | 768.2 | 42.1 | 5.6 | 74 | NW | | | 6 | | 2 | | | 0 | 0 | | Johann Tamas, S. J. |
| Szegedin | 30.00 | 762.1 | 30.29 | 769.4 | 50.4 | 10.2 | 64 | N | | | 4 | | 4 | | | 0 | 0 | | Karl Stancel. |
| Trieste | 30.34 | 770.7 | 30.45 | 773.3 | 52.3 | 11.3 | 66 | Calm | | | 0 | | 0 | | | 0 | 0 | Fair | P. Busin. |
| Vienna | 29.77 | 756.2 | 30.50 | 774.8 | 51.8 | 11.0 | 43 | N | | | 4 | | 2 | | | 0.016 | 0.4 | | I. R. Central Met. Obs'y. |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

## BELGIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 29.08 | 738.6 | 30.62 | 777.7 | 50.7 | 10.4 | 65 | W | | | 1 | | 7 | | | 0 | 0 | Solar halo | Prof. M. Passau. |
| Brussels | 30.41 | 772.3 | 30.61 | 777.6 | 45.8 | 7.4 | 86 | WSW | | | 2 | | 10 | | | 0 | 0 | Foggy | Royal Observatory. |
| Furnes | 30.59 | 776.9 | 30.61 | 777.5 | 49.5 | 9.7 | 78 | SSW | | | 2 | | 10 | | | 0 | 0 | | M. E. de Cae. |
| Maeseyck | 30.48 | 774.2 | 30.61 | 777.4 | 49.1 | 9.5 | 95 | SW | | | 1 | | | | | 0 | 0 | | M. Pierrot. |

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

## BRITISH SERIES.

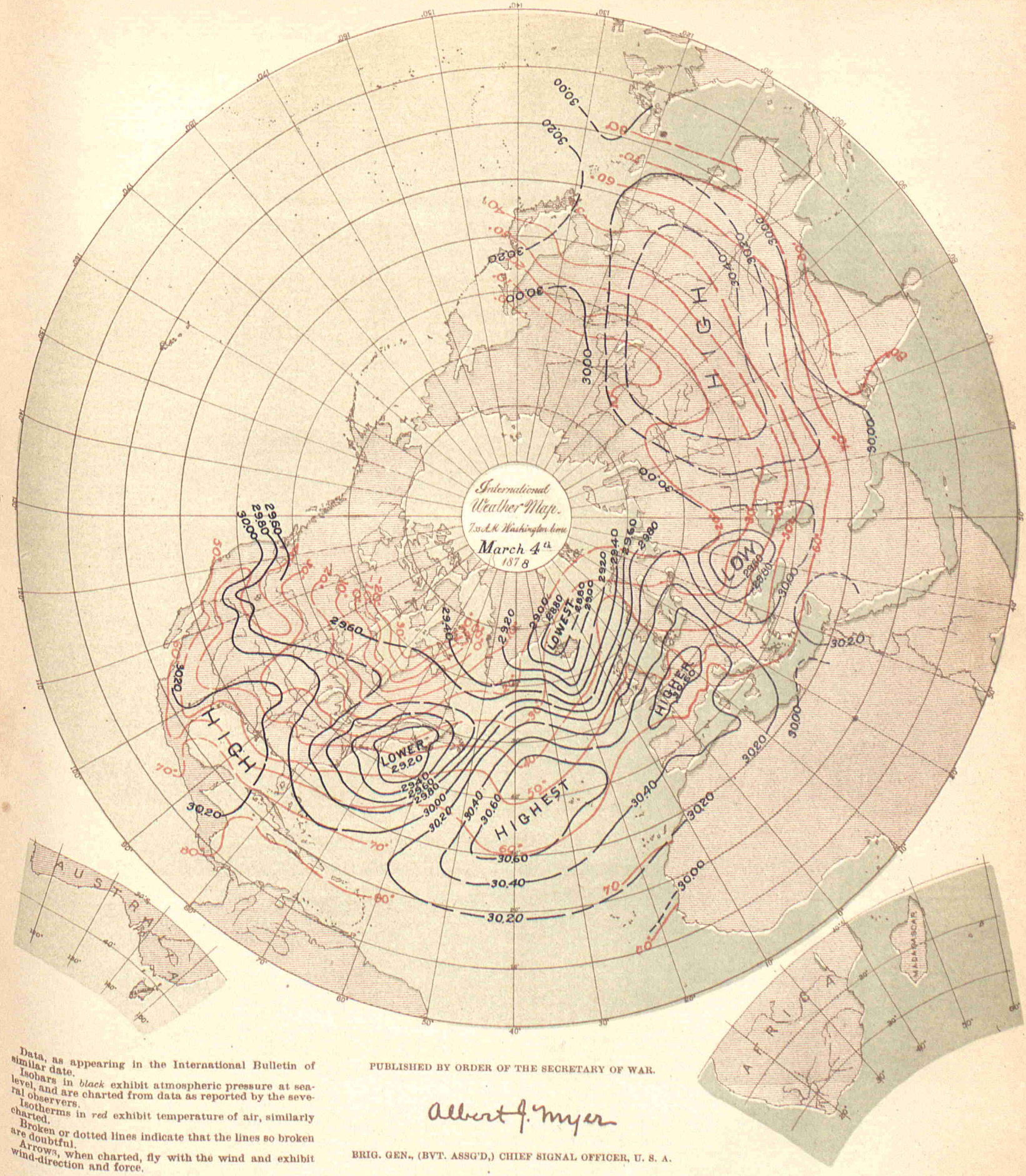
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.98 | 761.5 | 30.08 | 764.0 | 50.3 | 10.2 | ..... | S | 19 | 8.5 | ..... | ..... | 10 | ..... | ..... | 0.120 | 3.05 | Squally..... | W. Boswell. |
| Ardrossan | 30.10 | 764.5 | 30.12 | 765.0 | 49 | 9.4 | ..... | SSW | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | Raining..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.18 | 766.6 | 50.6 | 10.3 | ..... | S | 22 | 9.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Squally..... | S. Call, for Dr. Robinson |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.39 | 771.9 | 50.1 | 10.1 | ..... | SSW | 13 | 5.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Hartnup. |
| Birr Castle, (Parsonstown) | 30.05 | 763.3 | 30.25 | 768.3 | 52.2 | 11.2 | ..... | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds..... | J. Dreyer. |
| Bradford, Yorkshire | 29.95 | 760.7 | 30.34 | 770.6 | 50.7 | 10.4 | ..... | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 30.07 | 763.8 | 30.10 | 764.5 | 78.4 | 25.6 | ..... | NE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | Raining..... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 30.47 | 773.9 | 56.0 | 13.3 | ..... | S | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | H. Todd. [H.C. |
| Cardington | ..... | ..... | 30.50 | 774.7 | 54.4 | 12.4 | ..... | W | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | John McLaren. |
| Chatham, School M. E. | 30.38 | 771.6 | 30.52 | 775.2 | 50.7 | 10.4 | ..... | S | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.96 | 735.6 | 30.48 | 774.2 | 43.6 | 6.4 | ..... | SE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy ..... | Alexander Watt. |
| Donaghadee | 30.16 | 766.1 | 30.18 | 766.6 | 50 | 10.0 | ..... | SSW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | J. Mac Gowan. |
| Dover | 30.53 | 775.4 | 30.56 | 776.2 | 48 | 8.9 | ..... | WSW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | Gloomy..... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 30.39 | 771.9 | 52.5 | 11.4 | ..... | SW | 7.6 | 3.4 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | Thomas Mackereth. |
| Falmouth, Observatory | 30.31 | 769.9 | 30.55 | 776.0 | 50.5 | 10.3 | ..... | SSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | The Staff. |
| Fort Napier, (Natal) | 27.56 | 700.0 | 29.75 | 755.6 | 85.0 | 29.4 | ..... | E | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.68 | 753.9 | 29.91 | 759.7 | 80.0 | 31.7 | ..... | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's College | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.23 | 767.8 | 30.28 | 769.1 | 59.7 | 15.4 | ..... | E | ..... | ..... | 7 | ..... | 9 | ..... | ..... | Blank | Blank | Gloomy..... | Corpl. C. Aitken, A. H. C. |
| Glasgow, Observatory | 29.91 | 759.7 | 30.12 | 765.0 | 48.1 | 8.9 | ..... | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | D. G. Maclean. |
| Great Yarmouth | 30.45 | 773.4 | 30.46 | 773.7 | 51 | 10 6 | ..... | WSW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 30.34 | 770.6 | 30.52 | 775.2 | 55.2 | 12.9 | ..... | SW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff, for G. B. Airy. |
| Guernsey | 30.33 | 770.4 | 30.55 | 776.0 | 51 | 10.6 | ..... | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 30.53 | 775.4 | 54 | 12.2 | ..... | S | ..... | ..... | 6 | ..... | 2c | ..... | ..... | 0 | 0 | Fine ..... | M. P. Moyle. |
| Holyhead | 30.28 | 769.1 | 30.33 | 770.4 | 49 | 9.4 | ..... | SSW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Tilston. |
| Jersey | 30.31 | 769.9 | 30.61 | 777.5 | 51.8 | 10.7 | ..... | S | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 30.52 | 775.2 | 53.4 | 11.9 | ..... | SW | 17 | 7.6 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff. |
| Kingstown | 30.26 | 768.6 | 30.28 | 769.1 | 54 | 12.2 | ..... | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 30.45 | 773.4 | 51.8 | 11.0 | ..... | SW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 30.20 | 767.1 | 30.28 | 769.1 | 60.4 | 15.8 | ..... | NW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | Sgt. Fred. Travis, A. H. |
| Nairn | 29.92 | 760.0 | 30.00 | 762.0 | 47 | 8.3 | ..... | WSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 30.01 | 762.2 | 66.6 | 19.3 | ..... | NW | ..... | ..... | 6 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds.... | C. S. Duncombe. |
| Nottingham, Observatory | 30.24 | 768.1 | 30.44 | 773.2 | 53.7 | 12.1 | ..... | SSW | ..... | ..... | 5 | ..... | 5c;ck;k | ..... | SW | 0 | 0 | D. clouds.... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.91 | 759 7 | 30.45 | 773.4 | 49.9 | 9.9 | ..... | SSW | ..... | ..... | 6 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.50 | 774.7 | 52 | 11.1 | ..... | SW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | Mr. Lucas. |
| Plymouth | 30.48 | 774.2 | 30.56 | 776.2 | 51.0 | 10.6 | ..... | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Merrifield. |
| Roche's Point | 30.30 | 769.6 | 30.34 | 770.6 | 51 | 10.6 | ..... | SSW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | W. Kennedy. |
| Saint Ann's Head | 30.30 | 769.6 | 30.46 | 773.7 | 48 | 8.9 | ..... | SSW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 29.97 | 761.2 | 44.2 | 6.8 | ..... | W | 20 | 8.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.95 | 760.7 | 49.2 | 9.6 | ..... | N | ..... | ..... | 3 | ..... | 10 | ..... | ..... | Blank | Blank | Misty..... | Sergt. W. H. Lyne. |
| Sheffield | 30.11 | 764.8 | 30.40 | 772.1 | 55.9 | 13.3 | ..... | SW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 0 | 0 | D. clouds.... | W. F. Cooper. |
| Silloth Rectory | 30.19 | 766.8 | 30.22 | 767.6 | 51.4 | 10.8 | 80 | SW | ..... | ..... | 7 | ..... | 4 | ..... | ..... | 0.177 | 4.45 | D. clouds.... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.95 | 760.7 | 30.36 | 771.1 | 51.2 | 10.7 | ..... | SW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | Rev. S. J. Perry. |
| Stornorway, Lewis C., (Hebr.) | ..... | ..... | 29.90 | 759.4 | 49 | 9.4 | ..... | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Smith. |
| Stratfield Turgiss | 30.31 | 769.9 | 30.54 | 775.7 | 51.4 | 10.8 | ..... | SW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. C. H. Griffith, F.M.S |
| Thurso | ..... | ..... | 29.96 | 761.0 | 45 | 7.2 | ..... | WNW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 30.52 | 775.2 | 53 | 11.7 | ..... | S | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy..... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 30.24 | 768.1 | 51.0 | 10.6 | ..... | SW | 40 | 17.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.94 | 760.5 | 74.5 | 23.6 | 84 | SE | ..... | ..... | 2 | ..... | 10k | ..... | ..... | 0.6 | 15. | Covered..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.71 | 754.6 | 29.90 | 759.3 | 84.3 | 29.1 | 68 | SE | 12.5 | 5.6 | ..... | 2 | 1 | ..... | SE | 0.02 | 0.5 | Fine..... | C. Meldrum. |
| Melbourne, Observatory | 29.58 | 758.9 | 29.97 | 761.2 | 79.0 | 26.1 | 47 | N | 5 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Fine..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

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

| Marine Series. Vessels. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|
| S. S. Algeria, N. 43° 6′ W. 54° 19′ | 20* | SSW | Raining..... | Capt. W. Watson. |
| S. S. Batavia | | | | Capt. J. E. Mouland. |
| Ship Camperdown | | | | Capt. A. T. Miller. |
| Brig Catherine | | | | Capt. Adam Smith. |
| Barque Celeste | | | | Capt. D. F. McKechnie |
| S. S. Hibernia | | | | Capt. W. R. Cato |
| Barque Maroon, N. 16° 52′, W. 55° 50′ | 6 | NE | D. clouds..... | Capt. A. T. Brown. |
| Ship Mikado | | | | Capt. C. C. Prehn. [R. |
| S. S. Peruvian | | | | Capt. W. H. Smith, R. N. |
| Royal Alice | | | | Capt. E. M. Hughes. |
| S. S. Seine | | | | Capt. H. Manning. |
| Barque Sorata | | | | Capt. Jas. J. Price. |
| Schooner Traveller | | | | Capt. Alex. Simpson. |
| Yorkshire, N. 44° 10′ W. 28° 30′ | 4 | NW | D. clouds..... | |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.




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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.25 | 666.7 | ..... | ..... | 72.5 | 22.5 | 89 | NE | ..... | ..... | 2 | 6ks | 1d | ..... | NE | Inap. | Inap. | ..... | Federico Maison. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.38 | 771.6 | 30.43 | 772.8 | 41.7 | 5.4 | 89 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Fanöe | 30.35 | 770.8 | 30.37 | 771.3 | 43.7 | 6.5 | 94 | SW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.34 | 745.1 | 29.38 | 746.2 | 13.3 | —10.4 | 86 | Calm | ..... | ..... | 0 | ..... | 9 | ..... | ..... | ..... | ..... | Snowing | ..... |
| Stykkisholm, (Iceland) | 28.82 | 732.0 | 28.86 | 733.1 | 32.0 | 0.5 | 92 | S | ..... | ..... | 7 | ..... | 8 | ..... | ..... | ..... | ..... | Snow & hail | ..... |
| Thorshavn, (Farõe) | 29.60 | 751.9 | 29.64 | 752.8 | 37.8 | 3.2 | 87 | SW | ..... | ..... | 6 | ..... | 7 | ..... | ..... | ..... | ..... | Hailing | ..... |
| Vestervig | 30.11 | 764.8 | 30.28 | 769.1 | 40.6 | 4.8 | 97 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 30.08 | 763.9 | 30.09 | 777.9 | 53.6 | 12 | 67 | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Collignon, Director. |
| Amiens, Normal School | 30.52 | 775.3 | 30.54 | 778.2 | 52.2 | 11.2 | 75 | W | ..... | ..... | 1 | ..... | 5 | ..... | W | 0 | 0 | Cloudy | Bonvarne, Director. |
| Avignon, Normal School | 30.32 | 770.1 | 30.40 | 772.1 | 61.4 | 18 | 43 | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Mr. Giraud, Director |
| Bar-sur-Seine | 30.03 | 762.7 | 30.61 | 777.4 | 54.9 | 12.7 | 58 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | C. Saillard. |
| Beaumette Obs'y (Angers) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Albert Cheux. |
| Beauvais | ..... | ..... | ..... | ..... | 46.2 | 7.9 | 83 | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Normal School. |
| Besançon | 29.67 | 753.7 | 30.59 | 776.9 | 53.6 | 12 | 83 | ENE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Normal School. |
| Bourg-en-Bresse | 29.52 | 749.7 | 30.45 | 773.4 | 47.8 | 8.8 | 78 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Normal School. |
| Bourges, Normal School | 29.99 | 761.8 | 30.60 | 777.2 | 53.6 | 12 | 76 | S | ..... | ..... | 2 | ..... | 2 | ..... | E | 0 | 0 | Slightly cl'dy | A. Wagner, Director. |
| Brest, Naval Observatory | 30.27 | 768.9 | 30.49 | 774.5 | 55.9 | 13.3 | 72 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0.010 | 0.25 | ..... | The Staff. |
| Carcassonne, Normal School | 30.10 | 764.6 | 30.62 | 775.2 | 62.2 | 16.8 | 63 | W | ..... | ..... | 2 | ..... | 2 | ..... | NW | 0 | 0 | Slightly cl'dy | Vateau, Director. |
| Caen | 30.54 | 775.6 | 30.61 | 777.5 | 55.4 | 13 | 60 | S | ..... | ..... | 8 | ..... | 1 | ..... | N | 0 | 0 | Clear | Normal School. |
| Chartres, Normal School | 30.04 | 763.1 | 30.61 | 777.6 | 56.5 | 13.6 | 93 | S | ..... | ..... | 2 | ..... | 4 | ..... | SE | 0 | 0 | ..... | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 30.30 | 769.6 | 30.62 | 777.8 | 56.3 | 13.5 | 62 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | .. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 29.18 | 741.1 | 30.55 | 776.0 | 55.9 | 13.3 | 62 | ENE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0.012 | 0.3 | Clear | Ruard, Director. |
| Commercy, Normal School | 29.74 | 755.5 | 30.65 | 778.5 | 48.9 | 9.4 | 72 | NNW | ..... | ..... | 2 | ..... | 2 | ..... | NW | 0 | 0 | Slightly cl'dy | Dr. Goulet, Director. |
| Commune de Gréasque* | 29.33 | 744.9 | 30.47 | 773.9 | 68.2 | 20.1 | 40 | NW | ..... | ..... | 2 | ..... | 2 | ..... | NW | 0 | 0 | ¼ Covered | M. Kina. |
| Grenoble | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| La Roche-sur-Yon, N. School | 30.43 | 772.8 | 30.65 | 778.4 | 57.9 | 14.4 | 63 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Mouillot, Director. |
| Le Mans, Normal School | 30.30 | 769.6 | 30.61 | 777.6 | 53.1 | 11.7 | 67 | S | ..... | ..... | 2 | ..... | 2 | ..... | SE | 0 | 0 | Slightly cl'dy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.63 | 752.5 | 30.56 | 776.3 | 51.4 | 10.8 | 82 | S | ..... | ..... | 2 | ..... | 1 | ..... | N | 0 | 0 | Clear | Voudez, Director. |
| Lorient, Naval Observatory | 30.53 | 775.4 | 30.63 | 778.0 | 54.7 | 12.6 | 68 | SSE | ..... | ..... | 2 | ..... | 2 | ..... | SSE | 0 | 0 | ¼ covered | T. Carré, Director. |
| Mâcon, Normal School | 29.65 | 753.1 | 30.31 | 769.8 | 52.2 | 11.2 | 77 | SSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | M. Marchal, Director. |
| Metz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. A. Schuster, Dir. |
| Mirecourt | 29.55 | 750.5 | 30.62 | 777.8 | 50.0 | 10 | 62 | NW | ..... | ..... | 2 | ..... | 2 | ..... | SW | 0 | 0 | Slightly cl'dy | Normal School. |
| Nismes, Normal School | 30.23 | 767.9 | 30.44 | 773.1 | 66.9 | 19.4 | 34 | NE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Boyer, Director. |
| Orleans, Normal School | 30.22 | 767.5 | 30.60 | 777.2 | 54.7 | 12.6 | 68 | E | ..... | ..... | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Bernard, Director. |
| Paris, Observatory | 30.38 | 771.6 | 30.63 | 777.9 | 53.8 | 12.1 | 63 | SSE | ..... | ..... | 1 | 1c | ..... | ..... | ..... | Inap. | Inap. | Clear | National Observatory. |
| Privas | 29.48 | 748.9 | 30.57 | 776.4 | 56.3 | 13.5 | 41 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Normal School |
| Puy de Dome (Summit) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.54 | 775.6 | 30.57 | 776.4 | 59.0 | 15.0 | 58 | E | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Lt. Decante, Director. |
| Rouen, Normal School | 30.54 | 775.6 | 30.62 | 777.8 | 56.8 | 13.8 | 56 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | F. Lucard, Director. |
| Saint Malo (Port) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. H. Hercouet. |
| Tarbes, Normal School | 29.23 | 742.5 | 30.30 | 769.6 | 66.2 | 19 | 46 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | T. Hugues, Director. |
| Villefranche | 29.78 | 756.5 | 30.51 | 775.0 | 56.3 | 13.5 | 66 | NNE | ..... | ..... | 3 | ..... | 2 | ..... | Calm | 0 | 0 | Slightly cl'dy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.90 | 759.5 | 29.93 | 760.2 | 75.9 | 24.4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Lyons | ..... | ..... | 30.58 | 776.8 | 57.9 | 14.4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.71 | 1.8 | ..... | L'Abbé Marchési |
| Marseilles, Observatory | ..... | ..... | 30.39 | 771.8 | 68.9 | 20.5 | 61 | W | ..... | ..... | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Very clear | M. Jeys. |
| Mont-Louis | 25.25 | 641.4 | 30.57 | 776.4 | 50.0 | 10.0 | 92 | SE | 13.0 | 5.83 | ..... | 0–1 | 9 | ..... | ..... | 0 | 0 | Very cloudy | The Staff. |
| Nice | 30.32 | 770.1 | 30.40 | 772.1 | 62.2 | 16.8 | 75 | SE | ..... | ..... | 2 | ..... | 2 | ..... | NE | 0 | 0 | ..... | Mr. Falguère. |
| Paris, Montsouris Obs'y | 30.34 | 770.5 | 30.61 | 777.5 | 56.8 | 13.8 | 59 | SSE | ..... | ..... | 1 | ..... | 1 | ..... | SE | 0 | 0 | Clear | Dr. A. Niepce. |
| Perpignan | ..... | ..... | 30.49 | 774.4 | 68.0 | 20.0 | 39 | N | 7.4 | 3.33 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Marié Davy, Director. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 | ..... | NE | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Plantade,) H. P. | 22.86 | 580.5 | ..... | ..... | 42.8 | 6.0 | ..... | N | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Saint Maur, (near Paris) | 30.45 | 773.4 | 30.61 | 777.6 | 57.4 | 14.1 | 57 | S | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Clear | Gen'l de Nansouty |
| Toulouse, Observatory | 29.82 | 757.5 | 30.56 | 776.2 | 56.7 | 13.7 | 65 | WNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | E. Renou. |
| Tours | 30.38 | 771.6 | 30.58 | 776.6 | 55.0 | 12.8 | 64 | E | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Versailles, (near Paris) | ..... | ..... | 30.62 | 777.7 | 57.2 | 14.0 | 55 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | C. Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.34 | 770.5 | 30.36 | 771.2 | 43.7 | 6.5 | 94 | NE | 3.6 | 1.6 | ..... | ..... | 10n | ..... | ..... | 0.004 | 0.10 | Very clear | Dr. A. Bérigny. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.051 | 1.3 | Covered | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-10 | Clouds. Amount. Up'er 0-10 | Clouds. Amount. Low'r 0-10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 30.41 | 772.4 | 30.58 | 776.7 | 48.9 | 9.4 | 60 | SW | | | 4 | | 8 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 30.02 | 762.4 | 30.56 | 776.1 | 42.6 | 5.9 | 61 | NW | | | 4 | | 3 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 30.17 | 766.4 | 30.61 | 777.6 | 54.3 | 12.4 | 58 | N | | | 2 | | 0 | | | 0 | 0 | | Albert Senz. |
| Cassel | 30.02 | 762.5 | 30.64 | 778.2 | 53.2 | 11.8 | 81 | SW | | | 1 | | 5 | W | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 30.42 | 772.6 | 30.58 | 776.8 | 54.7 | 12.6 | 64 | W | | | 3 | | 7cs | | | 0 | 0 | | Director Lose. |
| Emden | 30.56 | 776.2 | 30.60 | 777.1 | 49.1 | 9.5 | 80 | WSW | | | 3 | | 10 | | | 0 | 0 | | Prof. Prestel. |
| Frankfort on the Main | 30.30 | 769.5 | 30.67 | 779.0 | 54.0 | 12.2 | 54 | WSW | | | 1 | | 4 | | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 29.17 | 741.0 | 30.65 | 778.6 | 48.9 | 9.4 | 80 | SW | | | 2 | | 0 | | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 30.45 | 773.3 | 30.52 | 775.1 | 52.5 | 11.4 | 81 | SW | | | 1 | | 10ks | | | 0 | 0 | Cloudy | Captain F. Hegemann. |
| Kiel | 30.46 | 773.6 | 30.47 | 774.0 | 48.7 | 9.3 | 86 | SSW | | | 2 | | 10 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 30.37 | 771.4 | 30.45 | 773.4 | 37.0 | 2.8 | 53 | N | | | | | | | | 0.036 | 0.92 | Fair | Prof. E. Luther. |
| Köslin | | | 30.51 | 774.9 | 40.3 | 4.6 | | Calm | | | 0 | | 0 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 30.21 | 767.4 | 30.65 | 778.5 | 48 2 | 9.0 | 81 | SSW | | | 1 | | 9 | WNW | | 0 | 0 | | Prof. Bruhns. |
| Memel, Naval School | 30.37 | 771.4 | 30.42 | 772.6 | 35.2 | 1.8 | 77 | NNW | | | 4 | | 1cs | | | | | | Reinbrech von Skalweit. |
| Neufahrwasser | 30.50 | 774.8 | 30.52 | 775.2 | 37.9 | 3.3 | 61 | NNE | | | 2 | | 1 | | | 0 | 0 | | A. Lothes. |
| Posen | 30.29 | 769.4 | 30.59 | 777.0 | 41.9 | 5.5 | 51 | NW | | | 3–4 | | 6 | | | 0 | 0 | Fair | Dr. Magener. |
| Strassburg Obs., (in Alsace | 30.08 | 764.1 | 30.64 | 778.3 | 53.1 | 11.7 | 55 | Calm | | | 0 | | 1 | NNE | | 0 | 0 | | Dr. Schur. |
| Stuttgart | 29.65 | 753.0 | 30.61 | 777.5 | 52.7 | 11.5 | 56 | E | | | 1 | | 1 | E | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | 29.98 | 761.4 | 30.51 | 774.9 | 53.8 | 12.1 | 60 | S | | | 4 | | 2 | | | 0 | 0 | Foggy | Prof. Flesch. |
| Weissenburg, (Bavaria) | 29.08 | 738.6 | 30.63 | 778.1 | 47.8 | 8.8 | 68 | Calm | 0 | 0 | | | 9ck | | | 0 | 0 | | Dr. Von Bebber. |
| Wustrow, Naval School | 30.44 | 773.2 | 30.48 | 774.2 | 41.4 | 5.2 | 98 | W | | | 2 | | 10 | | | 0 | 0 | Foggy | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.69 | 754.0 | 30.08 | 764.0 | 58.3 | 14.6 | | NE | | | 3.0 | | | | | | | Cloudy | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

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

## INDIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.97 | 761.1 | 30.02 | 762.4 | 76.8 | 24.9 | 76 | WSW | 19.0? | 8.5? | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.52 | 749.8 | 29.99 | 761.8 | 86.5 | 30.3 | 13 | N | | | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.91 | 759.8 | 29.95 | 760.8 | 76.7 | 24.8 | 71 | NW | 21.0 | 9.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.84 | 707.2 | 29.81 | 757.2 | 86.5 | 30.3 | 20 | WNW | | | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 29.25 | 743.0 | 30.02 | 762.4 | 70.3 | 21.3 | 42 | WNW | 2.6 | 1.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.42 | 696.4 | 29.95 | 760.7 | 79.3 | 26.3 | 48 | W | 8.0 | 3.6 | | | 0 | | | | | | |
| Bangalore | | | | | | | | | | | | | | | | 0 | 0 | | |
| Roorkee | 29.00 | 736.6 | 29.92 | 760.0 | 69.8 | 21.0 | 32 | NW | 3.4 | 1.5 | | | | | | 0 | 0 | | |
| Agra | 29.38 | 746.1 | 29.94 | 760.6 | 79.2 | 26.2 | 24 | W | | | | | | | | | | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.86 | 732.8 | 29.89 | 759.1 | 87.6 | 30.8 | 23 | N | 4.6 | 2.1 | | | | | | 0 | 0 | Blue sky | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.52 | 749.7 | 29.89 | 759.3 | 76.3 | 24.6 | 28 | W | 3.4 | 1.5 | | | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.59 | 751.5 | 29.90 | 759.4 | 76.4 | 24.7 | 36 | Calm | 1.0 | 0.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.68 | 754.0 | 29.87 | 758.6 | 79.3 | 26.3 | 21 | W | 1.4 | 0.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.86 | 707.6 | 29.89 | 759.1 | 74.6 | 23.7 | 15 | WNW | 5.9 | 2.6 | | | 0 | | | 0 | 0 | Misty | |
| Cuttack | 29.76 | 756.0 | 29.85 | 758.1 | 85.8 | 29.9 | 58 | SSW | 4.5 | 2.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.83 | 757.8 | 29.86 | 758.3 | 79.5 | 26.4 | 42 | NW | 5.0 | 2.2 | | | 0 | | | 0 | 0 | Thunder | |
| Goalpara | 29.48 | 748.8 | 29.88 | 759.0 | 70.2 | 21.2 | 66 | ESE | 4.2 | 1.9 | | | 6 | | | 0 | 0 | Gloomy | |
| Chittagong | 29.84 | 757.9 | 29.93 | 760.3 | 74.8 | 23.8 | 77 | SSW | 7.2 | 3.2 | | | 10 | | | 0 | 0 | Blue sky | |
| Sibsagar | 29.70 | 754.3 | 30.05 | 763.3 | 67.9 | 14.4 | 84 | ENE | 4.0 | 1.8 | | | 0 | | | 0.02 | 0.5 | | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.55 | 725.2 | 29.92 | 759.9 | 82.0 | 27.8 | 22 | NW | 2.3 | 1.0 | | | | | | 0 | 0 | Blue sky | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

## ITALIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instru'tal error and temperature. Inches. | Barometer. Corrected for instru'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.98 | 761.4 | 30.39 | 771.9 | 62.8 | 17.1 | 81 | W | 1.3 | 0.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 30.31 | 769.8 | 30.42 | 772.6 | 56.7 | 13.7 | 71 | E | 1.3 | 0.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 30.21 | 767.4 | 30.41 | 772.3 | 61.3 | 16.3 | 55 | SE | 1.3 | 0.6 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 29.10 | 739.1 | 30.42 | 772.6 | 60.8 | 16.0 | 84 | E | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.60 | 749.2 | 30.40 | 772.2 | 62.6 | 17.0 | 50 | ESE | 8.7 | 3.9 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 28.51 | 724.2 | 30.41 | 772.3 | 63.7 | 17.6 | 24 | NW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 30.19 | 766.8 | 30.41 | 772.5 | 59.7 | 15.4 | 81 | SE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 30.26 | 768.7 | 30.44 | 773.1 | 54.7 | 12.6 | 82 | S | 3.1 | 1.4 | ..... | ..... | 10 | S | ..... | 0.004 | 0.1 | ..... | Prof. G. M. Garibaldi. |
| Parma | 30.15 | 765.7 | 30.47 | 773.8 | 66.4 | 19.1 | 45 | ESE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 30.14 | 765.5 | 30.36 | 771.1 | 58.1 | 14.5 | 71 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 30.32 | 770.2 | 30.41 | 772.4 | 55.0 | 12.8 | 84 | NNW | 3.8 | 1.7 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 30.40 | 772.1 | 30.45 | 773.4 | 55.4 | 13.0 | 76 | N | 9.8 | 4.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.85 | 732.7 | 30.42 | 772.7 | 55.6 | 13.1 | 70 | SE | 0 | 0 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 30.27 | 768.8 | 30.38 | 771.7 | 67.3 | 19.6 | 50 | ENE | ..... | ..... | 2 | ..... | 2 | NE | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 30.17 | 766.2 | 30.34 | 770.7 | 66.0 | 18.9 | 47 | N | 1.8 | 0.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U | 30.17 | 766.3 | 30.37 | 771.5 | 67.3 | 19.6 | 41 | N | ..... | ..... | 1 | ..... | 4 | NE | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 58.1 | 14.5 | 57 | N | 23.7 | 10.6 | ..... | ..... | 3 | N | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 30.17 | 766.3 | 30.36 | 771.2 | 61.5 | 16.4 | 69 | SW | ..... | ..... | 2 | ..... | 1 | W | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.42 | 747.2 | 30.31 | 769.9 | 64.8 | 18.2 | 71 | NW | 5.6 | 2.5 | ..... | ..... | 6 | ..... | ..... | 0.008 | 0.2 | ..... | Prof. F. D. Conti. |
| Palermo | 30.05 | 763.2 | 30.30 | 769.7 | 68 8 | 14.9 | 67 | E | 4.9 | 2.2 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. G. Caccatore. |
| Syracuse | 30.18 | 766 5 | 30.25 | 768.4 | 59.7 | 15.4 | 73 | E | ..... | ..... | 4 | ..... | 7 | WNW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.82 | 757.4 | 30.37 | 771.5 | 64.4 | 18.0 | 38 | WNW | 3.8 | 1.7 | ..... | ..... | 4 | NE | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 879.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.7 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 30.29 | 769.3 | 30.37 | 771.4 | 28.1? | 2.2? | 77 | ENE | 3.3 | 1.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Fair | The Observatory. |
| Tokei (Yeddo) University | 30.24 | 768.1 | 30.35 | 770.8 | 41.5 | 5.3 | 82 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear | Prof. P. V. Veede. |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | 25.17 | 639.3 | 29.97 | 761.3 | 60.8 | 16.0 | 60 | N | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | L. Castillo, A. E. |
| Guadalajara | 25.08 | 637.0 | 30.13 | 765.3 | 47.3 | 8.5 | 54 | SW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Blue sky | Prof. L. Perez. |
| Guanajuato | 23.76 | 603.6 | 30.01 | 762.4 | 59.5 | 15.3 | 50 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 53.4 | 11.9 | 69 | SW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Very clear | Prof. M. Leal. |
| Mexico | 23.19 | 588.9 | 30.32 | 770.0 | 51.8 | 11.0 | 69 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 49.6 | 9.8 | 62 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | M. V. de Leon, M. E. |
| Puebla | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 30.31 | 769.9 | 30.32 | 770.2 | 65.3 | 18.5 | 90 | NW | 0.9 | 0.4 | ..... | 7cs | 8n | ..... | NE | 0 | 0 | Dark | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 30.32 | 770.2 | 30.35 | 770.9 | 70.7 | 21.5 | 73 | ESE | 10.2 | 4.5 | ..... | 2c | 7sk | ..... | ..... | 0 | 0 | Very cloudy | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 50.9 | 10.5 | 41 | NW | 0.9 | 0.4 | ..... | 9c | 0 | SE | ..... | 0 | 0 | Clear | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.33 | 592.7 | 30.12 | 765.0 | 43.7 | 6.5 | 46 | NNE | 2.2 | 1.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | P. Spina. [M. M. D. D. |
| Morelia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Tena, F. L. Param. |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft. San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,490 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known The data are published as given.

## NETHERLANDS' SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.60 | 777.3 | 30.60 | 777.3 | 47.8 | 8.8 | ..... | SW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 30.47 | 774.0 | 30.53 | 775.4 | 47.3 | 8.5 | ..... | WSW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 30.18 | 774.2 | 30.48 | 774.2 | 44.2 | 6.8 | ..... | SSW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 30.59 | 776.9 | 30.59 | 776.9 | 46.4 | 8.0 | 91 | SW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 30.54 | 775.6 | 30.58 | 776.8 | 45.7 | 7.6 | 91 | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Dull | H. v d Brink. |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

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

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.01 | 762.3 | 30.07 | 763.7 | 45.3 | 7.4 | 91 | S | 33.8 | 15.1 | ..... | ..... | 10 | ..... | ..... | 1.661 | 42.2 | ..... | ..... |
| Brönö | 29.58 | 751.4 | 29.62 | 752.4 | 41.7 | 5.4 | 82 | SW | 36 | 16 | ..... | ..... | 10 | ..... | ..... | 0.992 | 25.2 | ..... | ..... |
| Christiania | 30.02 | 762.4 | 30.17 | 766.3 | 38.1 | 3.4 | 76 | W | 7 | 3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... |
| Tromsö | 29.32 | 744.6 | 29.36 | 745.7 | 29.1 | — 1.6 | 100 | SW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | 0.197 | 5.0 | Snowing | ..... |

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

## PORTUGUESE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.47 | 773.9 | 30.66 | 778.8 | 54.7 | 12.6 | 80 | ENE | 15.4 | 6.9 | ..... | ..... | 7 | ..... | ..... | 0.591 | 15.0 | Raining | Dr. J. A. Sampaio. |
| Campo Major | 29.21 | 741.8 | 30.23 | 767.7 | 64.4 | 18.0 | 44 | E | 18.1 | 8.1 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos |
| Funchal, (Madeira) | 30.26 | 768.5 | 30.34 | 770.7 | 65.7 | 18.7 | 57 | SW | 8.1 | 3.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 30.06 | 763.5 | 30.42 | 772.6 | 65.8 | 18.8 | 44 | NE | 15.0 | 6.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.50 | 774.6 | 30.58 | 776.8 | 57.9 | 14.4 | 70 | NE | 24.2 | 10.8 | ..... | ..... | 10 | ..... | ..... | 0.035 | 0.9 | ..... | |

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

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd't |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello, Mozambique, Mozambique | 29.69 | 754.0 | 29.69 | 754.1 | 85.1 | 29.5 | ..... | NNE | ..... | ..... | 2 | ..... | 10 | ..... | NNE | 1 | ..... | Overcast | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Sado, River Bolola, Senegambia | 29.96* | 761.0* | 29.97* | 761.3* | 85.6 | 29.8 | ..... | SSW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 1 | ..... | Blue sky | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.80 | 756.9 | 29.81 | 757.1 | 84.2 | 29.0 | ..... | W | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreira, dos Anjos, Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.97 | 761.2 | 30.41 | 772.4 | 39.4 | 4.1 | 38 | NNW | 20 | 9 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.78 | 756.5 | 30.23 | 767.7 | 33.6 | 0.9 | 47 | NNW | 20 | 9 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 30.02 | 762.5 | 30.28 | 769.0 | 28.8 | — 1.8 | 57 | NNW | 9 | 4 | ..... | ..... | 1c | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.14 | 765.6 | 30.16 | 766.0 | 31.3 | — 0.4 | 61 | N | 16 | 7 | ..... | ..... | 1s | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.82 | 757.3 | 30.15 | 765.8 | 28.0 | — 2.2 | 100 | WSW | 13 | 6 | ..... | ..... | 0 | ..... | ..... | Blank | Blank | ..... | Ch. Forsten. |
| Kieff | 29.10 | 739.0 | 29.76 | 755.8 | 29.8 | — 1.2 | 69 | NNW | 13 | 6 | ..... | ..... | 10ks;n | ..... | ..... | ..... | ..... | Light graupel | Physical Cabinet. |
| Nikolaiev | 29.74 | 755.3 | 29.81 | 757.1 | 37.9 | 3.3 | 85 | N | 18 | 8 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Raining | Kurdakof. |
| Kertch | 29.81 | 757.1 | 29.83 | 757.6 | 46.2 | 7.9 | 79 | WNW | 7 | 3 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.19 | 741.5 | 29.77 | 756.2 | 23.7 | — 4.6 | 77 | N | 9 | 4 | ..... | ..... | 8s | ..... | ..... | ..... | ..... | Light snow | Meteorological Obs. |
| Lugan | 29.31 | 744.5 | 29.52 | 749 8 | 39.0 | 3.9 | 80 | SW | 9 | 4 | ..... | ..... | 9s | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.94 | 760.5 | 29.96 | 761.0 | 17.2 | — 8.2 | 88 | WNW | 2 | 1 | ..... | ..... | 2cs | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.57 | 725.6 | 29.99 | 761.8 | 52.3 | 11.3 | 31 | NW | 13 | 6 | ..... | ..... | 4k | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 29.92 | 760.0 | 29.84 | 757.9 | 38.5 | 3.6 | 82 | SW | 7 | 3 | ..... | ..... | 7s | ..... | ..... | Blank | Blank | ..... | Sebastianof. |
| Kasan | 29.69 | 754.1 | 29.98 | 761.5 | 13.8 | —10.1 | 69 | SE | 2 | 1 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 29.02 | 737.2 | 30.03 | 762.7 | 20.1 | — 6.6 | 73 | SSW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.85 | 758.2 | 30.09 | 764.3 | 39.2 | 4.0 | 67 | WNW | 4 | 2 | ..... | ..... | 7ks | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.60 | 726.4 | 30.38 | 771.7 | 38.7 | 3.7 | 67 | Calm | 0 | 0 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.87 | 758.6 | 30.43 | 772.9 | 19.2 | — 7.1 | 84 | W | 0 | 0 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Yeniseisk | 30.08 | 764.0 | 30.43 | 772 8 | 19.0 | — 7.2 | 89 | SE | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Krotkowo* | 29.43 | 747.5 | 29.94 | 760.4 | 14.0 | —10.0 | 70 | ESE | 11 | 5 | ..... | ..... | 2k | ..... | ..... | ..... | ..... | Light clouds | Cand. Fatjanow. |
| Peking, (China) | 30.24 | 768.0 | 30.38 | 771.6 | 41.4 | 5.2 | 47 | SW | 22 | 10 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.84 | 707.2 | 30.01 | 762.2 | 23.0 | — 5.0 | 71 | SW | 2 | 1 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | — 6.7 | —21.5 | ..... | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 469 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 892 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 30.35 | 771.0 | 30.46 | 773.6 | 63.7 | 17.6 | 58 | SSW | 3.2 | 1.42 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.45 | 773.5 | 30.51 | 774.9 | 63.7 | 17.6 | 64 | NW | 1.7 | 0.75 | ..... | 0 | 0 | ..... | ..... | 0.020 | 0.5 | Clear | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.49 | 698.3 | ..... | ..... | 57.2 | 14.0 | 73 | N | 5.4 | 2.39 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 28.24 | 717.2 | 30.48 | 774.2 | 62.1 | 16.7 | 47 | NE | 3.7 | 1.67 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | The Staff. |
| Murcia, Met. Obs'y | 30.29 | 769.3 | 30.44 | 773.1 | 64.2 | 17.9 | 68 | ENE | 7.6 | 3.39 | ..... | 3 | 6 | WSW | ..... | 0 | 0 | Cloudy | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.56 | 750.8 | 30.45 | 773.4 | 66.4 | 19.1 | 62 | W | 2.9 | 1.28 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 30.07 | 763.8 | 30.14 | 765.5 | 70.0 | 21.1 | 54 | NW | 13.9 | 6.2 | ..... | 0 | 5k | ..... | NW | 1.409 | 35.8 | Fair | Benito Vines, S. J. |
| San Fernando, Naval Obs'y | 30.25 | 768.2 | 30.34 | 770.7 | 62.2 | 16.8 | 73 | ENE | 28.3 | 12.7 | ..... | 0 | 9 | ..... | E | 0.106 | 2.7 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 30.03 | 762.8 | 30.12 | 765.1 | 77.0 | 25.0 | 84 | SE | 2.5 | 1.13 | ..... | 2k | 1k | SE | SE | 0 | 0 | Clear | Leonardo de Tejeda, Chief of Engineers. |

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

## SWEDISH SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.95 | 760.6 | 29.98 | 761.6 | 28.7 | — 4.6 | | S | | | 4 | | 4 | | | 0 | 0 | | |
| Umea | 30.01 | 762.3 | 30.07 | 763.6 | 32.4 | 0.2 | 78 | SW | | | 4 | | 10 | | | 0 | 0 | | |
| Hernosand | 30.00 | 762.0 | 30.05 | 763 3 | 33.1 | 0.6 | 81 | S | | | 4 | | 8 | | | 0 | 0 | | |
| Stockholm | 30.05 | 763.3 | 30.23 | 767.8 | 40.3 | 4.6 | 47 | SSW | | | 4 | | 2 | | | 0 | 0 | | |
| Wisby | 30.28 | 769.1 | 30.34 | 770.6 | 36.3 | 2.4 | 61 | W | | | 6 | | 0 | | | 0 | 0 | | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 30.16 | 766.0 | 30.28 | 767.9 | 38.7 | 3.7 | 54 | SSW | 15.2 | 6.8 | | | 6 | NNW | | 0 | 0 | | Dr. Hildebrandsson. |

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

## SWISS SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 29.11 | 739.5 | 30.55 | 776.0 | 51.1 | 10.6 | 68 | N | | | 1 | | 0 | | | 0 | 0 | Clear | The Observatory. |
| Zurich | 28.93 | 734.7 | 30.56 | 776.3 | 53.6 | 12.0 | 67 | W | | | 1 | | 1 | | | 0 | 0 | Clear | The Observatory. |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +14.2 mm.; Thermometer, +4.5 cent.; Relative Humidity, +3 per cent.

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

## TURKISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | | | 30.02 | 762.4 | 49.6 | 9.8 | 61 | N | 10 | 4.5 | | 10 | | WSW | | 0.322 | 8.2 | | The Observatory. |
| Fao, (Persian Gulf) | | | | | | | | | | | | | | | | | | | |
| Salonica | | | | | | | | | | | | | | | | | | | B. Stefanides. |
| Valona | | | | | | | | | | | | | | | | | | | A. Bertrand. |
| Varna | | | 30.23 | 767.9 | 57.7 | 14.3 | | NW | | | 2 | | 5 | | | 0.16 | 4. | Cloudy | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria.) Lee Obs'y | 30.12 | 765.0 | 30.24 | 768.1 | 62.1 | 16.7 | 68 | SW | | | 3 | | 9ck | | | 0 | 0 | D. clouds | Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | | | | | | | | | | | | | | | | | | | Hon. J. Ferguson. |
| Brockville, Ontario | 29.28 | 743.7 | 29.61 | 752.1 | 19 | — 7.2 | | N | 5 | 2.2 | | | 10n | | N | 0.19 | 4.8 | Light snow. | W. R. Bigg. |
| *Chatham, N B | | | 29.17 | 740.9 | 29 | — 1.7 | 96 | Calm | 0 | 0 | | | 10n | | N | 0.48 | 12.2 | Light snow. | G. A. Blair. |
| Charlottetown, P. E. Island | 29.12 | 739.6 | 29.16 | 740.7 | 38 | 3.3 | 96 | SW | 1 | 0.4 | | | Fog | | | 0.370 | 9.40 | Foggy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.27 | 743.4 | 29.47 | 748.5 | 20.8 | — 6.2 | 90 | NE | | | 4 | | 10n | | | 0.166 | 4.21 | Snowing | James Smith, M. A. |
| Dalhousie, N. B | 29.15 | 740.4 | 29.18 | 741.2 | 26.3 | — 3.2 | 88 | W | | | 1 | | | | | 0.70 | 17.8 | Gloomy | H. A. Johnson. |
| Esquimault, B. C | 29.39 | 746.5 | 29.44 | 747.8 | 44.8 | 7.1 | 100 | SW | | | | | 10 | | | 0.16 | 4.1 | Rainy | W. H. Bovis. |
| *Father Point, Quebec | 29.21 | 741.9 | 29.28 | 743.7 | 22 | — 5.6 | 86 | N | 18 | 5.8 | | | 10n | | NE | 0.15 | 3.8 | Threatening | J. McWilliams. |
| Fredericton, N. B | 29.08 | 738.6 | 29.15 | 740.4 | 36.2 | 2.3 | 96 | W | 5 | 2.2 | | | Fog | | | 0.36 | 9.1 | Foggy | Prof. Harrison. |
| *Fort Garry Manitoba | 28.83 | 732.3 | 29.70 | 754.4 | 22 | — 5.6 | 96 | S | 9 | 4.0 | | | 2c | 5ks | Calm | 0 | 0 | Fair | James Stewart. |
| Goderich, Ontario | | | | | | | | | | | | | | | | | | | H. J. Strang, M. A. |
| Granton, Ontario | 28.63 | 727.2 | 29.79 | 756.7 | 23.8 | — 4.8 | 94 | N | | | 3 | | 10n | | | Inap. | Inap. | Cloudy | James Grant. |
| *Halifax, N. S | 29.99 | 736.3 | 29.13 | 739.9 | 40 | 4.4 | 99 | Calm | 0 | 0 | | | Fog | | | 2.469 | 62.71 | Foggy | F. Allison, M. A. |
| Hamilton, Ontario | 29.37 | 746.0 | 29.76 | 755.9 | 26.2 | — 3.2 | 75 | SW | | | 1 | 10c | 0 | | | 0 | 0 | Cloudy | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.53 | 750.0 | 29.55 | 750.6 | 47 | 8.3 | 100 | SW | | | 5 | | 10 | | | 0.50 | 12.7 | Overcast | E. Weedon. |
| *Kingston, Ontario | 29.23 | 742.4 | 29.58 | 751.3 | 21 | — 6.1 | 82 | N | 10 | 4.5 | | 10cs | 0 | Calm | | 0.16 | 4.1 | Cloudy | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.15 | 740.4 | 29.19 | 741.4 | 43 | 6.1 | | S | 6 | 2.7 | | | 10n | | | 1.18 | 29.0 | Raining | C. H. Rigby. |
| *Montreal, Quebec | 29.21 | 741.9 | 29.42 | 747.3 | 24 | — 4.4 | 88 | | 10 | 4.5 | | | 10n | | | 0.33 | 8.4 | Light snow | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.06 | 738.1 | 29.80 | 756.9 | 15 | — 9.4 | 74 | N | 16 | 7.2 | | 2ck | 5ks | NW | NW | 0.21 | 5.3 | Fair | Rev. R. Mosley. |
| Peterboro, Ontario | 28.78 | 731.0 | 29.57 | 751.1 | 21.4 | — 5.9 | 65 | N | | | | | 10k | | | 0 | 0 | | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.02 | 737.1 | 29.75 | 755.6 | 26 | — 3.3 | 75 | NW | 18 | 8.0 | | | 10n | | NW | 0.11 | 2.8 | Cloudy | H. Morgan. |
| Port Hastings, N. S | 29.05 | 737.9 | 29.10 | 739.1 | 41.6 | 5.3 | | SE | 2 | 0.9 | | | | | | 0.25 | 6.3 | Raining | Peter Grant. |
| Port Stanley, Ontario | 29.12 | 739.6 | 29.79 | 756.7 | 27 | — 2.8 | 90 | W | 20 | 8.9 | | | 10n | | NW | 0.03 | 0.8 | Cloudy | M. Payne. |
| *Quebec, Quebec | 28.89 | 736.3 | 29.33 | 745.0 | 24 | — 4.4 | 100 | Calm | 0 | 0 | | | 10n | | Calm | 0.40 | 10.2 | Light snow | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.25 | 742.9 | 29.74 | 755.4 | 14 | —10.0 | 82 | W | 10 | 4.5 | | | 10s | | NW | 0.52 | 13.2 | Cloudy | W. H. McIntyre. |
| St. Andrews, N. B | 29.05 | 737.9 | 29.10 | 739.1 | 38 | 3.3 | 94 | N | 1 | 0.4 | | | 10n | | | 0.25 | 6.3 | Foggy | Dr. Gove. |
| St. John, N. B | 28.97 | 735.8 | 29.14 | 740.1 | 36 | 2.2 | 90 | Calm | 0 | 0 | | | Fog | | | 0.120 | 3.05 | Foggy | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.07 | 738.4 | 29.83 | 757.7 | 21 | — 6.1 | 92 | N | 15 | 6.7 | | | 10ks | | N | 0.49 | 12.4 | Cloudy | R. Stewart. |
| Stayner, Ontario | 28.98 | 736.1 | 29.81 | 757.2 | 20 | — 6.7 | 84 | N | 16 | 7.2 | | | 10n | | NW | 0.33 | 8.4 | Cloudy | R. J. Cole. |
| Stratford, Ontario | 28.44 | 722.4 | 29.78 | 756.4 | 21.0 | — 6.1 | 85 | NW | 18 | 8.0 | | | 10s | | | 0.07 | 1.8 | Light snow | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.25 | 742.9 | 29.28 | 743.7 | 44 | 6.7 | 97 | S | 10 | 4.5 | | | 10n | | | 2.27 | 57.7 | Light rain | T. C. Hill. |
| *Toronto, Ontario | 29.30 | 744.2 | 29.71 | 754.6 | 23 | — 5.0 | 86 | NW | 34 | 15.2 | | 0 | 0 | | | 0.05 | 1.3 | Clear | Magnetic Observatory. |
| Windsor, N. S | 28.96 | 735.6 | 29.06 | 738.1 | 42.0 | 5.6 | 92 | N | 4 | 1.8 | | | 10k | | | 0 | 0 | Foggy | Prof. John E. Oram. |
| Woodstock, Ontario | | | | | | | | | | | | | | | | | | | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | | | | | 45.0 | 7.2 | 100 | SW | | | | | 10n | | | 0.36 | 9.1 | Raining | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,162ft. or 360.3 m.

UNITED STATES SERIES.

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

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Upper. 0–10 | Clouds. Amount. Low'r. 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.07 | 738.4 | 29.30 | 744.2 | 35 | 1.7 | 85 | NW | 22 | 9.8 | ..... | ..... | 10n | ..... | Calm | 0.30 | 7.6 | Light snow.. | |
| Alpena, Michigan | 29.14 | 740.1 | 29.82 | 757.4 | 21 | — 6.1 | 85 | NW | 14 | 6.3 | ..... | ..... | 10s | ..... | NW | 0.03 | 0.8 | Cloudy..... | |
| Atlantic City, New Jersey | 29.37 | 746.0 | 29.39 | 746.5 | 44 | 6.7 | 84 | W | 8 | 3.6 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy..... | |
| Augusta, Georgia | 29.65 | 753.1 | 29.84 | 757.9 | 45 | 7.2 | 68 | NW | 12 | 5.4 | ..... | 2c | 2s | NW | Calm | 0.05 | 1.3 | Fair ..... | |
| Baltimore, Maryland | 29.44 | 747.8 | 29.48 | 748.8 | 43 | 6.1 | 59 | W | 12 | 5.4 | ..... | 5k | 5ks | NW | NW | 0.12 | 3.0 | Cloudy..... | |
| Barnegat, New Jersey | 29.31 | 745.2 | 29.36 | 745.7 | 44 | 6.7 | 83 | W | 14 | 6.3 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy..... | |
| Bismarck, Dakota | 27.84 | 707.1 | 29.69 | 754.1 | 29 | — 1.7 | 89 | SE | 5 | 2.2 | ..... | 5cs | Haze | NW | ..... | 0 | 0 | Fair ..... | |
| Boise City, Idaho | 27.14 | 689.3 | 30.02 | 762.5 | 36 | 2 3 | 90 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | Calm | 0.07 | 1.8 | Fair ..... | |
| Boston, Massachusetts | 29.01 | 736.8 | 29.16 | 740.7 | 41 | 5.0 | 87 | SW | 11 | 4.9 | ..... | 5ck | 2s;fg | NW | W | 0.03 | 0.8 | Fair ..... | |
| Brackettville, Texas | 29.06 | 738.1 | 30.14 | 765.5 | 39 | 3.9 | 71 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Breckenridge, Minnesota | 28.81 | 731.8 | 29.86 | 758.4 | 22 | — 5.6 | 93 | S | 10 | 4.5 | ..... | 1cs | 0 | Calm | ..... | 0 | 0 | Clear..... | |
| Brownsville, Texas | 30.14 | 765.5 | 30.20 | 767.1 | 55 | 12.8 | 68 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Buffalo, New York | 28.96 | 735.6 | 29.68 | 753.9 | 25 | — 3.9 | 87 | NW | 11 | 4.9 | ..... | ..... | 10n | ..... | NW | 0.16 | 4.1 | Light snow. | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 46 | 7.8 | 85 | SE | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Burlington, Vermont | 29.09 | 738.9 | 29.35 | 745.5 | 29 | — 1.7 | 89 | N | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.23 | 5.8 | Light snow.. | |
| Cairo, Illinois | 29.73 | 755.1 | 30.14 | 765.5 | 38 | 3.3 | 63 | NW | 16 | 7.2 | ..... | ..... | 10s | ..... | NW | 0.04 | 1.0 | Cloudy..... | |
| Camp Grant, Arizona | 25.18 | 639.6 | 29.98 | 761.5 | 52 | 11.1 | 23 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Camp Verde, Arizona | 26.72 | 678.7 | 29.20 | 741.7 | 38 | 3.3 | 72 | W | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Campo, California | 27.38 | 695.4 | 29.95 | 760.7 | 33 | 0.6 | 79 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy ..... | |
| Cape Hatteras, N. Carolina | 29.58 | 751.3 | 29.59 | 751.6 | 50 | 10.0 | 79 | SW | 12 | 5.4 | ..... | 8k | 0 | W | ..... | 0.36 | 9.1 | Fair..... | |
| Cape Henry, Virginia | 29.49 | 749.0 | 29.51 | 749.5 | 50 | 10.0 | 65 | W | 12 | 5.4 | ..... | 2cs | 0 | W | ..... | 0.01 | 0.3 | Fair..... | |
| Cape Lookout, N. Carolina | 29.59 | 751.6 | 29.61 | 752.1 | 52 | 11.1 | 66 | W | 32 | 14.3 | ..... | 2k | 0 | W | ..... | 0.03 | 0.8 | Fair..... | |
| Cape May, New Jersey | 29.42 | 747.3 | 29.44 | 747.8 | 44 | 6.7 | 67 | W | 28 | 12.5 | ..... | 10k | 0 | W | ..... | Inap. | Inap. | Cloudy..... | |
| Charleston, South Carolina | 29.76 | 755.9 | 29.83 | 757.7 | 49 | 9.4 | 57 | W | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Cheyenne, Wyoming | 23.86 | 606.0 | 29.80 | 756.9 | 39 | 3.9 | 19 | SW | 5 | 2.2 | ..... | ..... | 8s | ..... | SW | 0 | 0 | Cloudy..... | |
| Chicago, Illinois | 29.27 | 743.4 | 29.98 | 761.5 | 35 | 1.7 | 70 | NW | 7 | 3.1 | ..... | 10k | 0 | NW | ..... | 0.06 | 1.5 | Cloudy..... | |
| Cincinnati Ohio | 29.24 | 742.7 | 29.80 | 759.2 | 37 | 2.8 | 63 | NW | 10 | 4.5 | ..... | ..... | 10n | ..... | NW | 0.10 | 2.5 | Light snow.. | |
| Cleveland, Ohio | 29.09 | 738.9 | 29.83 | 757.7 | 30 | — 1.1 | 78 | NW | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0.30 | 7.6 | Cloudy..... | |
| Concho, Texas | 28.28 | 718.3 | 30.07 | 763.8 | 33 | 0.6 | 42 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Corsicana, Texas | 29.78 | 756.4 | 30.27 | 768.8 | 42 | 5.6 | 58 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Davenport, Iowa | 29.42 | 747.3 | 30.03 | 764.0 | 33 | 0.6 | 70 | W | 2 | 0.9 | ..... | 0 | 7s | ..... | NW | 0.01 | 0.3 | Clearing..... | |
| Deadwood, Dakota | 25.10 | 637.5 | ..... | ..... | 43 | 6.1 | 36 | SE | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Denison, Texas | 29.43 | 747.5 | 30.27 | 768.8 | 40 | 4.4 | 65 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Denver, Colorado | 24.64 | 625.8 | 29.86 | 758.4 | 35 | 1.7 | 45 | SW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Detroit, Michigan | 29.16 | 740.7 | 29.86 | 758.4 | 28 | — 2.2 | 77 | N | 13 | 5.8 | ..... | ..... | 10s | ..... | N | 0.08 | 2.0 | Cloudy..... | |
| Dodge City, Kansas | 27.48 | 697.5 | 29.84 | 757.9 | 31 | — 0.6 | 79 | SW | 4 | 1.8 | ..... | 2c | 0 | SW | ..... | 0 | 0 | Clear..... | |
| Dubuque, Iowa | 29.30 | 744.2 | 30.03 | 762.7 | 29 | — 1.7 | 67 | NW | 5 | 2.2 | ..... | 0 | 5s | ..... | Calm | 0.03 | 0.8 | Fair ..... | |
| Duluth, Minnesota | 29.21 | 741.9 | 29.92 | 760.0 | 22 | — 5.6 | 72 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Eagle Pass, Texas | 29.42 | 747.3 | 30.20 | 767.1 | 43 | 6.1 | 67 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Eastport, Maine | 29.02 | 737.1 | 29.08 | 738.6 | 35 | 1.7 | 100 | NW | 7 | 3.1 | ..... | 5k | 5s; fg | SW | N | 0.57 | 14.5 | Foggy ..... | |
| Erie, Pennsylvania | 29.02 | 737.1 | 29.75 | 755.6 | 28 | — 2.2 | 88 | NW | 21 | 9.4 | ..... | ..... | 10s | ..... | ..... | 0.34 | 8.6 | Cloudy..... | |
| Escanaba, Michigan | 29.28 | 743.7 | 29.97 | 761.2 | 22 | — 5.6 | 72 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | N | 0.02 | 0.5 | Cloudy..... | |
| Florence, Arizona | 28.26 | 717.8 | 29.86 | 758.4 | 55 | 12.8 | 38 | W | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Fort Bayard, New Mexico | 24.16 | 613.7 | 30.16 | 766.1 | 35 | 1.7 | 34 | S | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Fort Craig, New Mexico | 25.56 | 649.2 | ..... | ..... | 27 | — 2.8 | 41 | NE | 1 | 0.4 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair ..... | |
| Fort Gibson, Indian Ter | 29.67 | 753.6 | 30.24 | 768.1 | 30 | — 1.1 | 78 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Fort Griffin, Texas | 28.94 | 735.1 | 30.29 | 769.4 | 32 | 0.0 | 59 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Fort St. Michael, Alaska | 29.02 | 737.1 | 29.06 | 738.1 | — 5 | —20.6 | 100 | NE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Fort Sill, Indian Territory | 28.99 | 736.3 | 30.17 | 766.3 | 31 | — 0.6 | 79 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Galveston, Texas | 30.22 | 767.6 | 30.26 | 768.6 | 55 | 12.8 | 62 | NE | 6 | 2.7 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear..... | |
| Grand Haven, Michigan | 29.28 | 743.7 | 29.96 | 761.0 | 29 | — 1.7 | 78 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy..... | |
| Indianapolis, Indiana | 29.16 | 740.7 | 29.96 | 761.0 | 34 | 1.1 | 61 | NW | 11 | 4.9 | ..... | ..... | 10s | ..... | NW | 0.02 | 0.5 | Cloudy..... | |
| Indianola, Texas | 30.25 | 768.3 | 30.28 | 769.1 | 55 | 12.8 | 56 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Jacksboro, Texas | 29.08 | 738.6 | 30.27 | 768.8 | 36 | 2.2 | 61 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Jacksonville, Florida | 29.94 | 760.5 | 29.96 | 761.0 | 53 | 11.7 | 54 | W | 12 | 5.4 | ..... | 2k | 0 | W | ..... | 0 | 0 | Fair ..... | |
| Keokuk, Iowa | 29.46 | 748.3 | 30.11 | 764.8 | 32 | 0.0 | 70 | W | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy..... | |
| Key West, Florida | 30.06 | 763.5 | 30.10 | 764.5 | 67 | 19.4 | 64 | W | 20 | 8.9 | ..... | 5k | 0 | W | ..... | 0.48 | 12.2 | Fair ..... | |
| Kittyhawk, North Carolina | 29.52 | 749.8 | 29.54 | 750.3 | 48 | 8.9 | 78 | W | 19 | 8.5 | ..... | 0 | 0 | ..... | ..... | 0.06 | 1.5 | Clear..... | |
| Knoxville, Tennessee | 28.90 | 734.0 | 29.02 | 760.0 | 39 | 3.9 | 64 | NW | 10 | 4.5 | ..... | ..... | 10ks | ..... | NW | 0.04 | 1.0 | Cloudy..... | |
| La Crosse, Wisconsin | 29.25 | 742.9 | 30.02 | 762.5 | 29 | — 1.7 | 78 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear..... | |
| La Mesilla, New Mexico | 26.16 | 664.4 | 30.31 | 769.9 | 32 | 0.0 | 79 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Laredo, Texas | 29.83 | 757.7 | 30.19 | 766.8 | 44 | 6.7 | 84 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Leavenworth, Kansas | 29.29 | 744.0 | 30.18 | 766.6 | 29 | — 1.7 | 78 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Los Angeles, California | 29.66 | 753.4 | 30.00 | 762.0 | 53 | 11.7 | 86 | NE | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Louisville, Kentucky | 29.39 | 746.5 | 29.97 | 761.2 | 37 | 2.8 | 81 | NW | 16 | 7.2 | ..... | ..... | 10s | ..... | NW | 0.14 | 3.6 | Cloudy..... | |
| Lynchburg, Virginia | 28.91 | 734.3 | 29.58 | 751.3 | 45 | 7.2 | 60 | NW | 8 | 3.6 | ..... | 0 | 5ks | ..... | Calm | 0 | 0 | Fair..... | |
| Maricopa Wells, Arizona | ..... | ..... | ..... | ..... | 35 | 1.7 | 56 | N | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Marquette, Michigan | 29.20 | 741.7 | 29.93 | 760.2 | 27 | — 2.8 | 76 | W | 4 | 1.8 | ..... | ..... | 10s | ..... | W | 0.09 | 2.3 | Cloudy..... | |
| Mason, Texas | 28.59 | 726.2 | 30.43 | 772.9 | 40 | 4.4 | 65 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Memphis, Tennessee | 29.85 | 758.2 | 30.18 | 766.6 | 39 | 3.9 | 71 | N | 9 | 4.0 | ..... | ..... | 10s | ..... | N | 0.03 | 0.8 | Cloudy..... | |
| Milwaukee, Wisconsin | 29.27 | 743.4 | 29.98 | 761.5 | 29 | — 1.7 | 89 | NW | 8 | 3.6 | ..... | 0 | 1ks | ..... | ..... | 0 | 0 | Clear..... | |
| Mobile, Alabama | 30.12 | 765.0 | 30.17 | 766.3 | 42.5 | 5.8 | 70 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Montgomery, Alabama | 29.85 | 758.2 | 30.09 | 764.3 | 44 | 6.7 | 67 | NW | 9 | 4.0 | ..... | 10k | 0 | NW | ..... | 0.01 | 0.3 | Cloudy..... | |
| Morgantown, West Virginia | 28.66 | 728.0 | 29.74 | 755.4 | 33 | 0.6 | 79 | NW | 16 | 7.2 | ..... | ..... | 10n | ..... | NW | 0.04 | 1.0 | Light snow.. | |
| Mt. Washington, N. H. | 22.98 | 583.7 | 29.34 | 745.2 | 23 | — 5.0 | 100 | NW | 36 | 16.1 | ..... | ..... | 10n | ..... | NW | 1.01 | 25.7 | Heavy snow | |
| Nashville, Tennessee | 29.41 | 747.0 | 29.96 | 761.0 | 41 | 5.0 | 79 | W | 4 | 1.8 | ..... | ..... | 10s | ..... | NW | 0.02 | 0.5 | Cloudy ..... | |
| New Haven, Connecticut | 29.16 | 740.7 | 29.27 | 743.4 | 43 | 6.1 | 92 | SW | 2 | 0.9 | ..... | ..... | 10n; fg | ..... | ..... | 0.07 | 1.8 | Light rain... | |
| New London, Connecticut | 29.20 | 741.7 | 29.25 | 742.9 | 40 | 4.4 | 91 | W | 5 | 2.2 | ..... | 0 | 10s | ..... | W | 0.06 | 1.5 | Cloudy ..... | |
| New Orleans, Louisiana | 30.15 | 765.8 | 30.21 | 767.3 | 49 | 9.4 | 51 | W | 7 | 3.1 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear..... | |
| Newport, Rhode Island | 29.16 | 740.7 | 29.21 | 741.9 | 39 | 3.9 | 91 | SW | 4 | 1.8 | ..... | ..... | 10ks | ..... | SW | 0.09 | 2.3 | Threatening | |
| New York, New York | 29.15 | 740.4 | 29.32 | 744.7 | 44 | 6.7 | 83 | W | 9 | 4.0 | ..... | ..... | 10ks; fg | ..... | SW | 0.16 | 4.1 | Cloudy..... | |
| Norfolk, Virginia | 29.48 | 748.8 | 29.54 | 750.3 | 47 | 8.3 | 70 | W | 9 | 4.0 | ..... | 5ck | 2s | SW | SW | 0.04 | 1.0 | Cloudy..... | |
| North Platte, Nebraska | 27.03 | 686.6 | 29.68 | 753.9 | 31 | — 0.6 | 69 | S | 4 | 1.8 | ..... | 2ck | 0 | Calm | ..... | 0 | 0 | Clear..... | |
| Olympia, Washington Ter. | 29.63 | 752.6 | 29.67 | 753.6 | 40 | 4.4 | 91 | S | 15 | 6.7 | ..... | ..... | 10s | ..... | Calm | 0.90 | 22.9 | Cloudy..... | |
| Omaha, Nebraska | 28.96 | 735.6 | 30.10 | 764.5 | 24 | — 4.4 | 87 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Oswego, New York | 29.24 | 742.7 | 29.57 | 751.1 | 27 | — 2.8 | 76 | N | 16 | 7.2 | ..... | ..... | 10n | ..... | Calm | 0.24 | 6.1 | Light snow.. | |
| Pembina, Dakota | 28.84 | 732.5 | 29.69 | 754.1 | 25 | — 3.9 | 87 | S | 10 | 4.5 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear..... | |
| Philadelphia, Pennsylvania | 29.34 | 745.2 | 29.40 | 746.7 | 43 | 6.1 | 75 | W | 16 | 7.2 | ..... | 2cs | 9s | W | W | 0.17 | 4.3 | Cloudy..... | |
| Phœnix, Arizona | 28.74 | 730.0 | 30.58 | 776.7 | 45 | 7.2 | 76 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Pike's Peak, Colorado | 17.59 | 446.8 | 29.80 | 756.9 | 8 | —13.3 | 78 | W | 60 | 26.8 | ..... | 0 | 5s | ..... | ..... | 0 | 0 | Clear. ..... | |
| Pioche, Nevada | 23.90 | 607.0 | 29.67 | 753.6 | 37 | 2.8 | 53 | SE | 4 | 1.8 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair..... | |
| Pittsburg, Pennsylvania | 28.87 | 733.3 | 29.69 | 754.1 | 33 | 0.6 | 89 | NW | 16 | 7.2 | ..... | ..... | 10n | ..... | NW | 0.07 | 1.8 | Light snow.. | |
| Port Huron, Michigan | 29.16 | 740.7 | 29.85 | 758.2 | 26 | — 3.3 | 88 | NW | 16 | 7.2 | ..... | ..... | 10ks | ..... | NW | 0.10 | 2.5 | Cloudy..... | |
| Portland, Maine | 29.08 | 738.6 | 29.13 | 739 9 | 40 | 4.4 | 82 | NW | 12 | 5.4 | ..... | 8k | 2s | NW | NW | 0.17 | 4.3 | Cloudy..... | |
| Portland, Oregon | 29.86 | 758.4 | 29.97 | 761.2 | 42 | 5.6 | 91 | S | 16 | 7.2 | ..... | ..... | 10n | ..... | Calm | 0.29 | 7.4 | Light rain.... | |
| Prescott, Arizona | 24.71 | 627.6 | 30.07 | 763.8 | 31 | — 0.6 | 48 | SE | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Punta Rassa, Florida | 30.05 | 763.3 | 30.07 | 763.8 | 62 | 16.7 | 71 | NW | 48 | 21.5 | ..... | 5k | 0 | NW | ..... | 0 | 0 | Fair ..... | |
| Red Bluff, California | 29.81 | 757.2 | 30.18 | 766.6 | 45 | 7.2 | 88 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0.65 | 16.5 | Cloudy..... | |

## UNITED STATES SERIES.—Continued

| STATIONS. | Barometer. Corrected for instru'm'tal error and temperature. Inches. | Barometer. Corrected for instru'm'tal error and temperature. Millimeters | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rochester, New York | 28.96 | 735.6 | 29.58 | 751.3 | 28 | — 2.2 | 88 | NW | 14 | 6.3 | ..... | ..... | 10n | ..... | Calm | 0.39 | 9.9 | Light snow. | |
| Roseburg, Oregon | 29.49 | 749.0 | 30.07 | 763.8 | 41.5 | 5.3 | 82 | Calm | 0 | 0 | ..... | Haze | 2s | ..... | Calm | 0.28 | 7.1 | Fair | |
| Sacramento, California | 30.08 | 764.0 | 30.17 | 766.3 | 42 | 5.6 | 91 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.42 | 10.7 | Clear | |
| St. Louis, Missouri | 29.55 | 750.6 | 30.15 | 765.8 | 35 | 1.7 | 70 | NW | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| St. Marks, Florida | 30.04 | 763.0 | 30.06 | 763.5 | 46 | 7.8 | 54 | NW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.09 | 738.9 | 29.98 | 761.0 | 24 | — 4.4 | 87 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.46 | 646.4 | 29.78 | 756.4 | 44 | 6.7 | 45 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| San Antonio, Texas | 29.55 | 750.6 | 30.16 | 766.1 | 47 | 8.3 | 48 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Diego, California | 29.98 | 761.5 | 30.06 | 763.5 | 52 | 11.1 | 86 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandusky, Ohio | 29.16 | 740.7 | 29.85 | 758.2 | 30 | — 1.1 | 78 | N | 32 | 14.3 | ..... | ..... | 10s | ..... | NW | 0.12 | 3.0 | Cloudy | |
| Sandy Hook, New Jersey | 29.31 | 744.5 | 29.33 | 745.0 | 44 | 6.7 | 84 | W | 19 | 8.5 | ..... | 5ck | 5ks | NW | NW | 0.06 | 1.5 | Cloudy | |
| San Francisco, California | 30.10 | 764.5 | 30.16 | 766.1 | 47 | 8.3 | 92 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.60 | 15.2 | Clear | |
| Santa Fé, New Mexico | 23.30 | 591.8 | 29.84 | 757.9 | 31 | — 0.6 | 58 | E | 6 | 2.7 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Savannah, Georgia | 29.76 | 755.9 | 29.85 | 758.2 | 51 | 10.6 | 65 | W | 12 | 5.4 | ..... | ..... | 10ks | ..... | W | 0 | 0 | Cloudy | |
| Shreveport, Louisiana | 30.00 | 762.0 | 30.23 | 767.8 | 45 | 7.2 | 61 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 29.67 | 753.6 | 29.71 | 754.6 | 48 | 8.9 | 70 | NW | 10 | 4.5 | ..... | 0 | 1ks | ..... | W | 0.04 | 1.0 | Clear | |
| Springfield, Massachusetts | 29.08 | 738.6 | 29.21 | 741.9 | 44 | 6.7 | 76 | NW | 6 | 2.7 | ..... | ..... | 10ks | ..... | NW | 0.96 | 24.4 | Cloudy | |
| Stockton, Texas | 27.12 | 688.8 | 30.12 | 765.0 | 34 | 1.1 | 27 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.10 | 739.1 | 29.15 | 740.4 | 41 | 5.0 | 91 | NW | 12 | 5.4 | ..... | 8k | 0 | NW | ..... | 0 | 0 | Fair | |
| Toledo, Ohio, | 29.18 | 741.2 | 29.87 | 758.7 | 32 | 0.0 | 79 | NW | 18 | 8.0 | ..... | ..... | 10s | ..... | N | 0.07 | 1.8 | Cloudy | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 37 | 2.8 | 71 | S | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tybee Island, Georgia | 29.82 | 757.4 | 29.85 | 758.2 | 48 | 8.9 | 71 | W | 16 | 7.2 | ..... | 0 | 8ks | ..... | NW | 0 | 0 | Cloudy | |
| Umatilla, Oregon | 29.57 | 751.1 | ..... | ..... | 44 | 6.7 | 84 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | ..... | 0.03 | 0.8 | Cloudy | |
| Vicksburg, Mississippi | 29.90 | 759.4 | 30.17 | 766.3 | 45 | 7.2 | 68 | W | 4 | 1.8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Virginia City, Montana | 23.98 | 609.1 | 29.46 | 748.3 | 32 | 0.0 | 79 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Threatening | |
| Visalia, California | 29.77 | 756.1 | 30.15 | 765.8 | 45 | 7.2 | 84 | NW | 5 | 2.2 | ..... | 0 | 4s | ..... | Calm | 0.13 | 3.3 | Fair | |
| Washington, D. C. | 29.43 | 747.5 | 29.54 | 750.3 | 42 | 5.6 | 54 | NW | 7 | 3.1 | ..... | 1ck | 5s | NW | NW | 0.04 | 1.0 | Fair | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 36 | 2.2 | 61 | W | ..... | ..... | ..... | 8ck | 0 | ..... | ..... | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 29.59 | 751.6 | 29.67 | 753.6 | 48 | 8.9 | 62 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Winnemucca, Nevada | 25.60 | 650.2 | 29.96 | 761.0 | 31 | — 0.6 | 79 | SW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wood's Holl, Mass | 29.15 | 740.4 | 29.20 | 741.7 | 40 | 4.4 | 82 | SW | 5 | 2.2 | ..... | 8ck | 0 | W | ..... | 0.26 | 6.6 | Fair | |
| Yankton, Dakota | 28.68 | 728.5 | 30.04 | 763.0 | 24 | — 4.4 | 86 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Yuma, Arizona | 29.74 | 755.4 | 29.92 | 760.0 | 49 | 9.4 | 64 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 29.53 | 750.0 | 29.59 | 751.6 | 4.6 | —15.3 | 87 | NE | 2 | 0.9 | ..... | ..... | 10s | ..... | NE | 0.30 | 7.6 | Cloudy | J. Fortescue, W. Wood |
| Havana, Cuba, W. I. | 30.09 | 764.3 | 30.11 | 764.8 | 70 | 21.1 | 67 | NW | 15.6 | 7.0 | ..... | 8k | 0 | NW | ..... | 0.87 | 22.1 | Fair | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.15 | 765.8 | 30.16 | 766.1 | 78 | 25.6 | 90 | Calm | 0 | 0 | ..... | 5c | 2s | SE | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.96 | 761.0 | 30.04 | 763.0 | 81 | 27.2 | ..... | NE | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | ..... | ..... | 30.09 | 764.3 | 82 | 27.8 | 79 | E | ..... | ..... | 2 | 3c | 5k | E | ..... | 0 | 0 | Fair | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | 30.06 | 763.4 | 30.07 | 763.6 | 85.1 | 29.5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.25 | 641.3 | ..... | ..... | 66.0 | 18.9 | 75 | Calm | ..... | ..... | 0 | 3ck | 0 | ..... | ..... | 0 | 0 | ..... | Thomas Herran |
| Honolulu, Oahu, H. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Daniel Smith. |
| Makawao, Maui, H. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. L. Clarke. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medillin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,560 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.6 m.; Concho, 1, 750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,182 ft., or 1,578.4 m.; Dodge City, 2,486 ft., or 757.6 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Stanton, 6,200 (?) ft., or 1,890.3 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,676 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,546 (?) ft., or 776.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,060 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft. or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 1—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.11 | 764.8 | 46 | 7.8 | 43 | 6.1 | 100 | WNW | 5 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0.5 | 13. | ..... | ..... | Dense fog.... | |
| Navy Yard, Pensacola, Fla. | 30.19 | 766.8 | 47 | 8.3 | 48 | 8.9 | 92 | WNW | 1 | 0.4 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear ..... | |
| Navy Yard, Portsmouth, N.H | 29.28 | 743.7 | 67 | 19.4 | 35 | 1.7 | 100 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Misty..... | |
| Naval Hospital, Yokohama, Japan | 30.26* | 768.6* | 50 | 10.0 | 41.5 | 5.3 | 82 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Adams. Panama | 29.98 | 761.5 | 83 | 28.3 | 83 | 28.3 | 83 | NNW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | |
| Alliance, Smyrna, Turkey | 30.01‡ | 762.2‡ | ..... | ..... | 56 | 13.3 | 81 | S | ..... | ..... | 0–1 | ..... | 10 | ..... | S | ..... | ..... | ..... | ..... | Raining..... | |
| Ashuelot. Shanghai, China | 30.36* | 771.1* | 51 | 10.6 | 49 | 9.4 | 78 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | D. clouds..... | |
| Canonicus, New Orleans, La. | 30.11 | 764.8 | 43 | 6.1 | 52 | 11.1 | 93 | WNW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Colorado, New York, N. Y. | 29.40‡ | 746.7‡ | ..... | ..... | 46 | 7.8 | 69 | W | 18 | 8.0 | ..... | ..... | 8 | ..... | W | 0.13 | 3.3 | ..... | ..... | Light fog..... | |
| Constitution, Off Delaware Breakwater. | 29.46‡ | 748.3‡ | ..... | ..... | 46 | 7.8 | 77 | WNW | ..... | ..... | 4 | ..... | 8 | ..... | NW | ..... | ..... | Smooth | S | Cloudy..... | |
| Despatch, Constantinople, Turkey. | 30.09 | 764.3 | 75 | 23.9 | 47 | 8.3 | 85 | NNE | ..... | ..... | 4 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Enterprise, New Orleans, La. | 30.19‡ | 766.8‡ | ..... | ..... | 49 | 9.4 | 78 | WNW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Franklin. Norfolk, Va. | 29.49‡ | 749.0‡ | ..... | ..... | 48 | 8.9 | 63 | WSW | 12 | 5.4 | ..... | ..... | 8 | ..... | ..... | 0.5 | 13. | ..... | ..... | D. clouds..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.01 | 762.2 | 76 | 24.4 | 75 | 23.9 | 40 | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Mod'ate Ground | NW | Clear..... | |
| Marion, Piraeus, Greece | 30.09 | 764.3 | 62 | 16.7 | 60 | 15.6 | 55 | N | ..... | ..... | 2 | ..... | 10 | ..... | NW | Light | Light | ..... | ..... | Light rain.. | |
| Michigan, Erie, Pa. | 29.19 | 741.4 | 56 | 13.3 | 31 | — 0.6 | 68 | NE | ..... | ..... | 4 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Monongahela, Manila, Phillipine Islands. | 30.17* | 766.3* | 84 | 28.9 | 84 | 28.9 | 91 | ENE | ..... | ..... | 2–3 | ..... | 1 | ..... | ..... | ..... | ..... | Smooth | ..... | D. clouds..... | |
| New Hampshire, Port Royal, S. C. | 29.99 | 761.7 | 55 | 12.8 | 63 | 17.2 | 19 | W | 23 | 10.3 | ..... | ..... | 5 | ..... | NW | 0 | 0 | ..... | ..... | Fair..... | |
| Omaha, S. 22° 00′, W. 31° 00′. | 30.14* | 765.5* | 82 | 27.8 | 80.5 | 26.9 | 70 | NE | 3 | 1.3 | ..... | ..... | 7 | ..... | NE | 0 | 0 | Slight | NE | Pleasant..... | |
| Onward, Callao, Peru | 30.00† | 762.0† | ..... | ..... | 73 | 22.8 | 90 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, N. 18° 28′, W. 85° 45′ | 30.21‡ | 767.3‡ | ..... | ..... | 77 | 25.0 | 73 | NNW | ..... | ..... | 7 | ..... | 8 | ..... | NNW | ..... | ..... | Heavy | NNW | Cloudy..... | |
| Palos, Shanghai, China | 30.40* | 772.1* | 66 | 18.9 | 44 | 6.7 | 100 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | N&E | ..... | ..... | ..... | ..... | Cloudy..... | |
| Pensacola, Honolulu, H. I. | 30.31 | 769.9 | 74 | 23.3 | 73 | 22.8 | 76 | NE | 2 | 0.9 | ..... | ..... | 1 | ..... | NE | 0.01 | 0.3 | ..... | ..... | Clear ..... | |
| Plymouth. Norfolk, Va. | 29.63‡ | 752.6‡ | ..... | ..... | 47 | 8.3 | 70 | WSW | ..... | ..... | 2 | ..... | 10 | ..... | WSW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Powhatan, St. Vincent, W. I. | 30.13‡ | 765.3‡ | ..... | ..... | 79 | 26.1 | 95 | NE | 4.8 | 2.1 | ..... | ..... | 2 | ..... | NE | 0.05 | 1.3 | Smooth | ..... | Rainy ..... | |
| Ranger. Liang-Kan Bay, Formosa, China. | 30.25* | 768.3* | ..... | ..... | 77 | 25.0 | 84 | E | ..... | ..... | 3 | ..... | 1 | ..... | ..... | ..... | ..... | Long | W | Blue sky..... | |
| Rio Bravo, Brownsville, Texas | ..... | ..... | ..... | ..... | 50 | 10.0 | 93 | Calm | ..... | ..... | 0 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Santee, Annapolis, Md. | 29.57* | 751.1* | 65 | 18.3 | 44 | 6.7 | 60 | NW | ..... | ..... | 4 | ..... | 9 | ..... | E | 0.18 | 4.6 | ..... | ..... | Cloudy..... | |
| Saratoga, Washington, D. C. | 29.52* | 749.5* | ..... | ..... | 46 | 7.8 | 77 | WNW | ..... | ..... | 2 | ..... | 4 | ..... | WNW | 0 | 0 | ..... | ..... | Clear. ..... | |
| St. Louis, League Island, Pa | 29.40 | 746.7 | 63 | 17.2 | 43 | 6.1 | 75 | NW | 12 | 5.4 | ..... | ..... | 8 | ..... | NW | 0.27 | 6.9 | ..... | ..... | Cloudy..... | |
| Supply, N. 43° W. 51° 24′ | 30.16 | 766.1 | 51 | 10.6 | 46 | 7.8 | 84 | SSE | ..... | ..... | 6 | ..... | 8 | ..... | S | ..... | ..... | Mod'ate | S | Fair ..... | |
| Swatara, Port-au-Prince, Hayti. | 30.17* | 766.3* | ..... | ..... | 80 | 26.7 | 78 | E | ..... | ..... | 3 | ..... | 2 | ..... | E | ..... | ..... | ..... | ..... | D. clouds..... | |
| Tennessee, N. 17° 14′, E. 114° 18′ | 30.07* | 763.8* | 80 | 26.7 | 80 | 26.7 | 82 | ESE | 2 | 0.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Mod'ate | ESE | Blue sky..... | |
| Trenton, Smyrna, Turkey | 30.07‡ | 763.8‡ | ..... | ..... | 55 | 12.8 | 76 | NW | ..... | ..... | 0–1 | ..... | 10 | ..... | NW | 0.1 | 3. | Smooth | ..... | Light rain.... | |
| Tuscarora, N. 32° 40′, W. 117° 15′. | 30.14 | 765.5 | 64 | 17.8 | 58 | 14.4 | 94 | NE | ..... | ..... | 0–1 | ..... | 5 | ..... | Calm | 0 | 0 | Mod'ate | WNW | Fair..... | |
| Vandalia, Constantinople, Turkey. | 29.92‡ | 760.0‡ | ..... | ..... | 51 | 10.6 | 72 | N | ..... | ..... | 2–4 | ..... | 10 | ..... | N | ..... | ..... | ..... | ..... | Squally..... | |
| Wabash, Boston, Mass. | 29.16‡ | 740.7‡ | ..... | ..... | 43 | 6.1 | 83 | W | 6 | 2.7 | ..... | ..... | 5 | ..... | W | 0.02 | 0.5 | ..... | ..... | Fair ..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

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

| NAMES OF VESSELS. | TRUE COURSE TOWARD— | HOURLY RATE IN KNOTS. | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | SEA-SWELL. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | CHARACTER. | DIRECTION FROM— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Panama, N. 44° 30′, W. 124° 30′ | | | 29.98† | 760.2† | | | | SW | | | 4 | | 10 | | SW | Heavy | W | Variable | Capt. Seabury. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, Yokohama, Japan | | | | | 42 | 5.6 | | NNE | | | 4 | | 7 | | NNE | | | D. clouds | Capt. Maury. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. †Aneroid.

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

Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Panama, N. 44° 30′, W. 124° 30′ | | | 29.98† | 760.2† | | | | SW | | | 4 | | 10 | | SW | Heavy | W | Variable | Capt. Seabury. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, Yokohama, Japan | | | | | 42 | 5.6 | | NNE | | | 4 | | 7 | | NNE | | | D. clouds | Capt. Maury. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic, N. 50° 0′, W. 28° 10′ | | | 30.38* | 771.6* | | | | WNW | | | 6 | | 4 | | NW | Heavy | W | Clear | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. W. H. Thompson |
| S. S. Celtic, Liverpool | | | 30.45† | 773.4† | 54 | 12.2 | | SSW | | | 4 | | | WSW | | | | D. clouds | Capt. B. Gleadell. |
| S. S. Germanic, N. 41° 11′, W. 60° 56′ | | | 29.16† | 740.7† | 57 | 13.9 | 58 | S | | | 8 | | 10 | | S | Heavy cross | SSW;SE | Squally | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. *Aneroid; corrected for elevation; instrumental error not known. †Aneroid.

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

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, N. 23° 55′, E. 118° 02′ | | | 30.25* | 768.3* | | | | NNE | | | 4 | | Heavy | | N | Mod'ate | NE | Misty | Capt. John Metcalf. |
| S. S. Gaelic, N. 31° 00′, W. 164° 56′ | | | 30.07† | 763.8† | 66 | 18.9 | ?? | SSW | | | 4 | | s | | SW | Smooth | | D. clouds | Capt. W. H. Kidley |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

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

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 43° 44′, W. 45° 21′ | S69W | | 30.40 | 772.1 | 60.0 | 15.6 | 71 | SW | | | 6 | | ks | | SSW | Heavy | SW | Threatening | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—CONTINUED.

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

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | Character | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, Delaware River | | | 29.46† | 748.3† | 54 | 12.2 | 87 | WSW | | | 4 | | 4 | | SW | | | Cloudy | Captain Sargent. |
| S. S. Ohio, Queenstown, Ireland | | | 30.37 | 771.4 | 53 | 11.7 | 93 | SSW | | | 6 | | 10 | | SSW | | | Hazy | Captain Morrison. |
| S. S. Pennsylvania, Liverpool | | | 30.37 | 771.4 | 57 | 13.9 | ?? | SW | | | 3 | | 6 | | W | | | Partly clear | Captain Harris. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. †Aneroid; unreliable, corrected for elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

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

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

**ALLAN LINE MARINE SERIES.**

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

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

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

**MARINE SERIES. (Miscellaneous.)**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Providence, R. I. | | | 29.16 | 740.7 | 45 | 7.2 | 84 | Calm | 0 | 0 | | | 10ks | | W | | | Overcast | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.37 | 746 0 | —32 | —35.6 | 86* | Calm | 0 | 0 | | 0 | 0 | | | | | Clear | O. T. Sherman. |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Determined by use of hair hygrometer.

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

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

Albert J. Myer

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

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 5, 1878.

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

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

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

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

## ALGERIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | | | 30.19 | 766.7 | 62.8 | 17.1 | | NE | | | 6 | | 6 | | | 0 | 0 | Clear | Dr. Ollive. |
| Nemours | | | 30.41 | 772.3 | 61.3 | 16.3 | 77 | NW | | | 8 | | 9 | | | 0 | 0 | Covered | Michel. |
| Algiers | | | 30.39 | 771.9 | 59.7 | 15.4 | 78 | NE | | | 1 | | 10 | | | 0 | 0 | Covered | Towillere. |
| La Calle | | | 30.42 | 772.7 | 59.0 | 15.0 | 80 | ENE | | | 5 | | 1 | | | 0 | 0 | Very fair | Boulangeot. |
| Tunis | | | 30.43 | 773.0 | 64.2 | 17.9 | 70 | E | | | 4 | | 7 | | | 0 | 0 | Very cloudy | Jacques. |
| Sfax | | | 30.41 | 772.5 | 66.2 | 19.0 | | NE | | | 5 | | 9 | | | 0 | 0 | Covered | Gau. |
| Saida | | | 30.33 | 770.3 | 75.7 | 24.3 | 82 | ESE | | | 1 | | 2 | | | 0 | 0 | Fair | Herbin. |
| Tebessa | | | 30.42 | 772.7 | | | | Calm | | | 0 | | 0 | | | 0 | 0 | Clear | Bourgeois. |
| Geriville | | | 30.39 | 771.8 | 57.6 | 14.2 | 86 | SE | | | 8 | | 6 | | | 0 | 0 | Cloudy | Lemalliot. |
| Laghouat | | | 30.42 | 772.7 | 66.2 | 19.0 | 30 | E | | | 3 | | 2 | | | 0 | 0 | Fair | Guyot. |
| Biskra | | | 30.42 | 772.6 | | | | | | | | | | | | | | | Chanvaux. |

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

## AUSTRIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.83 | 757.6 | 30.38 | 771.7 | 54.3 | 12.4 | 53 | SW | | | 1 | | 4 | | | 0 | 0 | | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.53 | 750.0 | 30.32 | 770.0 | 45.7 | 7.6 | 64 | W | | | 1 | | 4 | | | 0 | 0 | | Dr. Wierzbiski. |
| Eperies | 29.41 | 747.1 | 30.33 | 770.3 | 40.8 | 4.9 | 48 | Calm | | | 0 | | 8cs | | | 0 | 0 | | Julius Mikolik. |
| Gratz | 29.10 | 739.1 | 30.37 | 771.4 | 51.4 | 10.8 | 62 | SSW | | | 3 | | 0 | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28.83 | 732.3 | 30.31 | 769.9 | 37.8 | 3.2 | 56 | N | | | 3 | | 6 | | | 0 | 0 | | Prof. Reissenberg |
| Kremsmünster | 28.98 | 736.1 | 30.35 | 770.8 | 50.0 | 10.0 | 74 | Calm | | | 0 | | 1 | | | 0 | 0 | | Prof. C. Wagner |
| Lemberg | 29.25 | 743.0 | 30.28 | 769.2 | 38.5 | 3.6 | 75 | SW | | | 2 | | 2 | | | 0 | 0 | | Dr. T. Stanecki. |
| Pola | 30.29 | 769.3 | 30.40 | 772.2 | 53.2 | 11.8 | 67 | WNW | | | 1 | | 8c | | | 0 | 0 | | I.R.Hydrographic Office |
| Szathmar | 29.89 | 759.1 | 30.37 | 771.4 | 41.0 | 5.0 | 72 | NW | | | 3 | | 1 | | | 0 | 0 | | Johann Tamas, S. J. |
| Szegedin | 30.09 | 764.3 | 30.38 | 771.6 | 46.0 | 7.2 | 87 | N | | | 1 | | 0 | | | 0 | 0 | | Karl Stancel. |
| Trieste | 30.32 | 770.0 | 30.42 | 772.6 | 53.6 | 12.0 | 68 | S | | | 1 | | 1 | | | 0 | 0 | Fair | P. Busin. |
| Vienna | 29.83 | 752.6 | 30.36 | 771.2 | 51.1 | 10.6 | 58 | Calm | | | 0 | | 5 | | | 0 | 0 | | I. R. Central Met. Obs'y. |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

## BELGIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.95 | 735.4 | 30.51 | 774.9 | 45.1 | 7.3 | 79 | NW | | | 1 | | 10 | | | 0.016 | 0.4 | | Prof. M. Passau. |
| Brussels | 30.30 | 769.7 | 30.51 | 774.9 | 46.9 | 8.3 | 66 | WNW | | | 1 | 8 | 1 | SW | | 0.001 | 0.03 | Solar halo | Royal Observatory. |
| Furnes | 30.55 | 775.9 | 30.57 | 776.5 | 48.4 | 9.1 | 62 | WNW | | | 2 | | 7 | | | 0 | 0 | | M. E. de Cae. |
| Maeseyck | 30.39 | 771.8 | 30.51 | 775.0 | 49.5 | 9.7 | 78 | WNW | | | 1 | | 10 | | | 0.012 | 0.3 | | M. Pierrot. |

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

## BRITISH SERIES.

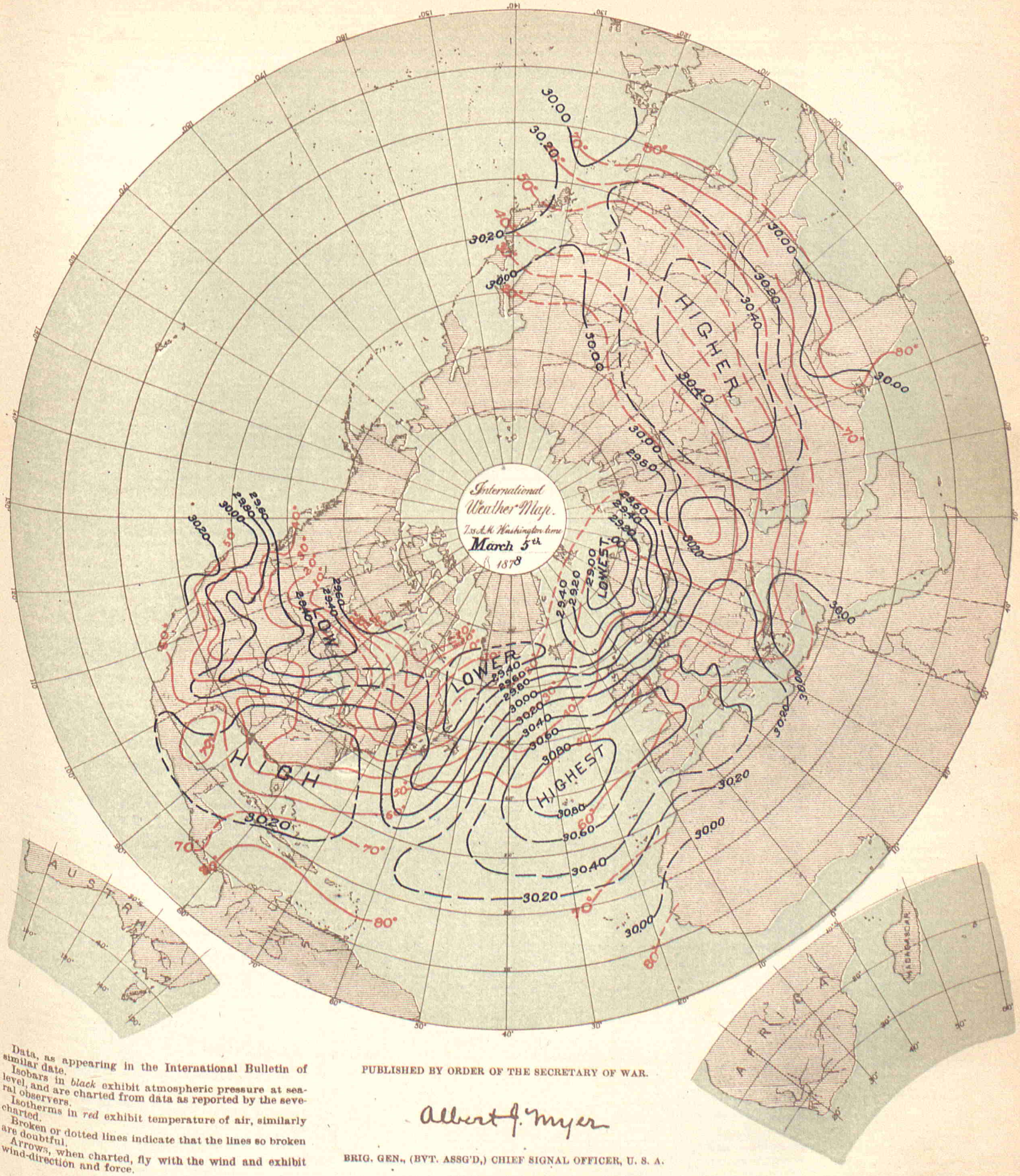
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E. Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.81 | 757.2 | 29.91 | 759.7 | 48.9 | 9.4 | ..... | WSW | 29 | 13.0 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | Blue sky..... | W. Boswell. |
| Ardrossan | 30.10 | 764.5 | 30.11 | 764.8 | 47 | 8.3 | ..... | W | ..... | ..... | 6 | ..... | 9 | ..... | ..... | ..... | ..... | Raining..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.23 | 767.8 | 47.0 | 8.3 | ..... | SSW | 23 | 10.3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Squally..... | S. Call, for Dr. Robinson |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.36 | 771.1 | 48.1 | 8.9 | ..... | WSW | 30 | 13.4 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | John Hartnup. |
| Birr Castle, (Parsonstown) | 30.12 | 765.0 | 30.32 | 770.1 | 46.6 | 8.1 | ..... | SSW | ..... | ..... | 3–4 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | J. Dreyer. |
| Bradford, Yorkshire | 29.89 | 759.2 | 30.28 | 769.1 | 48.1 | 8.9 | ..... | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.02 | 0.5 | Overcast..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 30.03 | 762.7 | 30.06 | 763.5 | 79.5 | 26.4 | ..... | NE | ..... | ..... | 2 | ..... | 4? | ..... | ..... | ..... | ..... | Overcast?.... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 30.48 | 774.2 | 53.0 | 11.7 | ..... | WSW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds.... | H. Todd. [H. C. |
| Cardington | ..... | ..... | 30.49 | 774.4 | 52.0 | 11.1 | ..... | W | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | John McLaren. |
| Chatham, School M. E. | 30.37 | 771.4 | 30.51 | 774.9 | 52.2 | 11.2 | ..... | W | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | Lt. W. G. Morris, R. E. |
| Dartmoor | 29.11 | 739.4 | 30.63 | 778.0 | 45.0 | 7.2 | ..... | NW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | Alexander Watt. |
| Donaghadee | 30.17 | 766.3 | 30.20 | 767.1 | 50 | 10 0 | ..... | WSW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds.... | J. Mac Gowan. |
| Dover | 30.51 | 774.9 | 30.54 | 775.7 | 49 | 9.4 | ..... | WSW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | ½ clouded.. | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 30.36 | 771.1 | 50.0 | 10.0 | ..... | SW | 11.4 | 5.1 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | Thomas Mackereth. |
| Falmouth, Observatory | 30.44 | 773.2 | 30.68 | 779.3 | 51.0 | 10.6 | ..... | W | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | The Staff. |
| Fort Napier, (Natal) | 27.55 | 699.8 | 29.78 | 756.4 | 68.2 | 20.1 | ..... | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.69 | 754 1 | 29.92 | 760.0 | 88.0 | 31 1 | ..... | W | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | |
| Galway, Queen's College | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.34 | 770.6 | 30.40 | 772.1 | 59.0 | 15.0 | ..... | E | ..... | ..... | 6 | ..... | 7 | ..... | ..... | ..... | ..... | Hazy..... | Corpl. C. Aitken, A. H. C. |
| Glasgow, Observatory | 29.86 | 758.4 | 30.07 | 763.6 | 45.2 | 7.3 | ..... | SSW | ..... | ..... | 8 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | D. G. Maclean. |
| Great Yarmouth | 30.40 | 772.1 | 30.41 | 772.4 | 51 | 10.6 | ..... | WNW | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 30.35 | 770.9 | 30.53 | 775.4 | 51.4 | 10.8 | ..... | W | ..... | ..... | 3 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | The Staff, for G. B. Airy. |
| Guernsey | 30.44 | 773.2 | 30.66 | 778.7 | 50 | 10.0 | ..... | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 30.70 | 779.8 | 53 | 11.7 | ..... | W | ..... | ..... | 6 | ..... | 2 | ..... | ..... | 0 | 0 | Fine..... | M. P. Moyle. |
| Holyhead | 30.29 | 769.4 | 30.34 | 770.6 | 48 | 8.9 | ..... | SSW | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | John Tilston. |
| Jersey | 30.42 | 772.7 | 30.72 | 780.3 | 48.6 | 9.2 | ..... | NNW | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | D. Sullivan. |
| Kew, Observatory | ..... | ..... | 30.54 | 775.7 | 51.0 | 10.6 | ..... | WSW | 18 | 8.0 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff. |
| Kingstown | 30.34 | 770.6 | 30.37 | 771.4 | 48 | 8.9 | ..... | W | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 30.46 | 773.7 | 50.7 | 10.4 | ..... | W | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 30.22 | 767.6 | 30.30 | 769.6 | 60.6 | 15.9 | ..... | NE | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | Sgt. Fred. Travis, A. H. |
| Nairn | 29.78 | 756.4 | 29.87 | 758.7 | 43 | 6.1 | ..... | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 30.26 | 768.6 | 66.0 | 18.9 | ..... | NW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | C. S. Duncombe. |
| Nottingham, Observatory | 30.24 | 768.1 | 30.43 | 772.9 | 51.4 | 10.8 | ..... | SSW | ..... | ..... | 5 | ..... | 6ck;k | ..... | WSW | 0.001 | 0.03 | D. clouds.... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.91 | 759.7 | 30.45 | 773.4 | 48.2 | 9.0 | ..... | WSW | ..... | ..... | 6 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.51 | 774.9 | 51 | 10.6 | ..... | W | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | Mr. Lucas. |
| Plymouth | 30.57 | 776.5 | 30.64 | 778.2 | 53.1 | 11.7 | ..... | W | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | John Merrifield. |
| Roche's Point | 30.44 | 773.2 | 30.48 | 774.2 | 50 | 10.0 | ..... | WSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | W. Kennedy. |
| Saint Ann's Head | 30.38 | 771.6 | 30.55 | 776.0 | 49 | 9.4 | ..... | WNW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | John C. Walker. |
| Sandwick Manse, (Orkneys.) | ..... | ..... | 30.70 | 779.8 | 42.2 | 5.7 | ..... | W | 40 | 17.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Showery..... | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 30.10 | 764.5 | 42.0 | 5.6 | ..... | N | ..... | ..... | 2 | ..... | 8 | ..... | ..... | Blank | Blank | D. clouds.... | Sergt. W. H. Lyne. |
| Sheffield | 30.12 | 765.0 | 30.40 | 772.1 | 50.4 | 10.2 | ..... | SW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0.05 | 1.3 | Overcast..... | W. F. Cooper. |
| Silloth Rectory | 30.17 | 766.3 | 30.20 | 767.1 | 49.3 | 9.6 | 75 | W | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0.105 | 2.67 | Blue sky..... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.92 | 760.0 | 30.33 | 770.4 | 46.0 | 7.8 | ..... | SW | ..... | ..... | 6 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | Rev. S. J. Perry. |
| Stornoway, Lewis C., (Hebr.) | ..... | ..... | 29.85 | 758.2 | 44 | 6.7 | ..... | WNW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | Squally..... | John Smith. |
| Stratfield Turgiss | 30.34 | 770.6 | 30.57 | 776.5 | 51.3 | 10.7 | ..... | W | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. C. H. Griffith, F.M.S. |
| Thurso | ..... | ..... | 29.76 | 755.9 | 46 | 7.8 | ..... | WSW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 30.64 | 778.2 | 55 | 12.8 | ..... | W | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 30.44 | 773.2 | 50.7 | 10.4 | ..... | WSW | 40 | 17.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling.... | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.12 | 765.0 | 64.0 | 17.8 | 71 | W | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.75 | 755.6 | 29.93 | 760.3 | 81.8 | 27.7 | 72 | ESE | 12.0 | 5.4 | ..... | 6 | 6 | ..... | ..... | 0 | 0 | Cloudy; fine | C. Meldrum. |
| Melbourne, Observatory | 30.10 | 764.5 | 30.19 | 766.8 | 61.0 | 16.1 | 92 | SE | 9 | 4.0 | ..... | ..... | 10 | ..... | ..... | 0.03 | 0.8 | Drizzling .... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

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

| Marine Series. Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Algeria, N. 41° 52′ W. 58° 46′ | ..... | ..... | 29.40 | 746.7 | 51.5 | 10.8 | ..... | SSW | ..... | ..... | 6 | ..... | 8 | ..... | ..... | 25* | ssw;w | Showery..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon, N. 16° 42′, W. 58° 40′ | ..... | ..... | 30.17 | 766.3 | 78 | 25.6 | ..... | E | ..... | ..... | 5 | ..... | 4 | ..... | ..... | 5 | NE | D. clouds.... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. C. Prehn. [R. |
| S. S. Peruvian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Alex. Simpson. |
| Yorkshire, N. 42° 25′ W. 32° 45′ | ..... | ..... | 30.93† | 785.6† | 57 | 13.9 | ..... | SW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 2 | S | D. clouds.... | |

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet. †Probably slightly higher, the range of scale not sufficiently great to admit of measurement.




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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.29 | 667.8 | ..... | ..... | 68.9 | 20.5 | 77 | NE | ..... | ..... | 6 | ..... | 3s | ..... | NE | 0 | 0 | ..... | Federico Maison. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.95 | 760.7 | 30.00 | 761.0 | 46.8 | 8.2 | 63 | NW | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... |
| Fanöe | 30.09 | 764.3 | 30.11 | 764.8 | 44.2 | 6.8 | 84 | WSW | ..... | ..... | 6 | ..... | 9 | ..... | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.80 | 744.3 | 29.85 | 745.4 | 12.2 | —11.0 | 79 | ENE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | 29.50 | 749.3 | 29.54 | 750.4 | 21.7 | — 5.7 | 90 | E | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Faröe) | 29.33 | 744.9 | 29.36 | 745.8 | 40.5 | 4.7 | 71 | WSW | ..... | ..... | 6 | ..... | 7 | ..... | ..... | ..... | ..... | ..... | Rain & hail. |
| Vestervig | 29.80 | 756.9 | 29.97 | 761.2 | 42.8 | 6.0 | 94 | W | ..... | ..... | 7 | ..... | 6 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alengon, Normal School | 30.14 | 765.5 | 30.69 | 779.5 | 51.8 | 11 | 74 | NE | ..... | ..... | 4 | ..... | 8 | ..... | NE | 0 | 0 | Very cloudy | Collignon, Director. |
| Amiens, Normal School | 30.46 | 773.6 | 30.57 | 776.5 | 52.5 | 11.4 | 61 | WNW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Bonvarne, Director. |
| Avignon, Normal School | 30.32 | 770.0 | 30.39 | 772.0 | 67.5 | 19.7 | 37 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Very clear | Mr. Giraud, Director |
| Bar-sur-Seine | 29.98 | 761.6 | 30.57 | 776.4 | 48.2 | 9.0 | 70 | N | ..... | ..... | 1 | ..... | 10 | ..... | NNE | 0 | 0 | Covered | C. Saillard. |
| Beaumette Obs'y (Angers) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Albert Cheux. |
| Beauvais | ..... | ..... | ..... | ..... | 52.7 | 11.5 | 61 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | NW | 0 | 0 | Covered | Normal School. |
| Besançon | 29.67 | 753.5 | 30.58 | 776.8 | 51.8 | 11 | 80 | ENE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear. | Normal School. |
| Bourg-en-Bresse | 29.63 | 752.6 | 30.56 | 776.2 | 57.4 | 14.1 | 58 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Normal School. |
| Bourges, Normal School | 29.98 | 761.6 | 30.56 | 776.1 | 47.5 | 8.6 | 92 | S | ..... | ..... | 1 | ..... | 2 | ..... | SW | 0 | 0 | Slightly cl'dy | A. Wagner, Director. |
| Brest, Naval Observatory | 30.43 | 773.0 | 30.65 | 778.6 | 50.9 | 10.5 | 60 | N | ..... | ..... | 1 | ..... | 1 | ..... | N | 0 | 0 | ..... | The Staff. |
| Carcassonne, Normal School | 30.13 | 765.2 | 30.54 | 775.8 | 60.8 | 16 | 69 | W | ..... | ..... | 4 | ..... | 2 | ..... | W | 0 | 0 | Slightly cl'dy | Vateau, Director. |
| Caen | 30.59 | 777.0 | 30.67 | 779.0 | 58.6 | 12 | 54 | N | ..... | ..... | 2 | ..... | 2 | ..... | W | 0 | 0 | Slightly cl'dy | Normal School. |
| Chartres, Normal School | 30.02 | 762.4 | 30.60 | 777.2 | 50.7 | 10.4 | 93 | N | ..... | ..... | 3 | ..... | 6 | ..... | NE | 0 | 0 | ..... | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 30.07 | 763.6 | 30.39 | 771.9 | 49.1 | 9.5 | 92 | Calm | ..... | ..... | 0 | ..... | 10n | ..... | ..... | 0 | 0 | Covered | Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 29.16 | 740.6 | 30.52 | 775.1 | 60.3 | 15.7 | 44 | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Alluard, Director. |
| Commercy, Normal School | 29.65 | 753.2 | 30.57 | 776.4 | 45.7 | 7.6 | 80 | NW | ..... | ..... | 2 | ..... | 10 | ..... | NW | 0 | 0 | Covered | Dr. Goulet, Director. |
| Commune de Gréasque* | 29.29 | 744.0 | 30.43 | 773.0 | 64.4 | 18.0 | 42 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | M. Kina. |
| Grenoble | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| La Roche-sur-Yon, N. School | 30.43 | 773.0 | 30.66 | 778.5 | 52.9 | 11.6 | 80 | N | ..... | ..... | 2 | ..... | 5 | ..... | SW | 0 | 0 | Cloudy | Mouillot, Director. |
| Le Mans, Normal School | 30.31 | 769.9 | 30.63 | 777.9 | 50.9 | 10.5 | 72 | NE | ..... | ..... | 4 | ..... | 5 | ..... | NE | 0 | 0 | Cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.57 | 751.0 | 30.46 | 773.7 | 51.8 | 11 | 78 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Voudez, Director. |
| Lorient, Naval Observatory | 30.63 | 778.1 | 30.73 | 780.6 | 52.2 | 11.2 | 52 | NNW | ..... | ..... | 3 | ..... | 2 | ..... | N | 0 | 0 | ¼ covered | T. Carré, Director. |
| Mâcon, Normal School | 29.76 | 755.8 | 30.42 | 772.6 | 54.9 | 12.7 | 72 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | M. Marchal, Director. |
| Metz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. A. Schuster, Dir. |
| Mirecourt | 29.44 | 747.8 | 30.63 | 775.5 | 41.4 | 5.2 | 78 | NW | ..... | ..... | 4 | ..... | 5 | ..... | SW | 0 | 0 | Cloudy | Normal School. |
| Nismes, Normal School | 30.20 | 767.1 | 30.41 | 772.3 | 72.3 | 22.4 | 56 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Boyer, Director. |
| Orleans, Normal School | 30.22 | 767.6 | 30.62 | 777.7 | 50.4 | 10.2 | 76 | NE | ..... | ..... | ..... | ..... | 10 | ..... | NE | 0 | 0 | Covered | Bernard, Director. |
| Paris, Observatory | 30.32 | 770.2 | 30.57 | 776.5 | 49.6 | 9.8 | 81 | NW | ..... | ..... | 1 | ..... | 10 | ..... | W | 0 | 0 | Misty | National Observatory. |
| Privas | 29.39 | 746.4 | 30.47 | 773.9 | 55.4 | 13 | 36 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Normal School |
| Puy de Dome (Summit) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.62 | 777.7 | 30.65 | 778.5 | 53.7 | 11.5 | 73 | N | ..... | ..... | 2 | ..... | 2 | ..... | N | 0 | 0 | ¼ covered | Lt. Decante, Director. |
| Rouen, Normal School | 30.54 | 775.7 | 30.63 | 777.9 | 53.6 | 12.0 | 61 | NNW | ..... | ..... | 3 | ..... | 2 | ..... | N | 0 | 0 | Slightly cl'dy | F. Lucard, Director. |
| Saint Malo (Port) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. H. Hercouet. |
| Tarbes, Normal School | 29.51 | 749.6 | 30.60 | 777.2 | 62.6 | 17 | 52 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | T. Hugues, Director. |
| Villefranche | 29.72 | 755.0 | 30.45 | 773.5 | 60.4 | 15.8 | 82 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.90 | 759.5 | 29.93 | 760.2 | 78.8 | 26 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchési |
| Lyons | ..... | ..... | 30.51 | 775.0 | 60.3 | 15.7 | ..... | ..... | ..... | ..... | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | M. Jeys. |
| Marseilles, Observatory | ..... | ..... | 30.36 | 771.1 | 65.1 | 18.4 | 51 | WNW | ..... | ..... | 1–2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |
| Mont-Louis | 25.25 | 641.4 | 30.57 | 776.4 | 52.0 | 11.1 | 37 | NNW | 13.0 | 5.83 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Mr. Falguère. |
| Nice | 30.32 | 770.0 | 30.39 | 772.0 | 60.8 | 16.0 | 72 | SE | ..... | ..... | 2 | ..... | ..... | ..... | E | 0 | 0 | Fair | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 30.28 | 769.1 | 30.56 | 776.1 | 49.3 | 9.6 | 84 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | NNW | Inap. | Inap | Sprinkling | Marié Davy, Director. |
| Perpignan | ..... | ..... | 30.46 | 773.6 | 69.1 | 20.6 | 47 | NW | 18.6 | 8.33 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.87 | 581.0 | ..... | ..... | 45.3 | 7.4 | ..... | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 30.40 | 772.1 | 30.56 | 776.3 | 51.3 | 10.7 | 89 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | E. Renou. |
| Toulouse, Observatory | 29.87 | 758.6 | 30.60 | 777.2 | 55.8 | 13.2 | 69 | NW | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Tours | 30.41 | 772.3 | 30.60 | 777.3 | 50.0 | 10.0 | 81 | NW | ..... | ..... | 2 | ..... | 10 | ..... | N | 0 | 0 | ..... | C. Marquet. |
| Versailles, (near Paris) | ..... | ..... | 30.53 | 775.5 | 51.8 | 11.0 | 80 | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.004 | 0.09 | Covered | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.23 | 767.8 | 30.25 | 768.4 | 41.0 | 5.0 | 92 | N | 8.9 | 4.0 | ..... | ..... | 10km | ..... | ..... | 0.260 | 6.6 | Covered | Marc Dechevrens, S. J |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 30.10 | 764.5 | 30.27 | 768.8 | 48.9 | 9.4 | 72 | SW | | | 5 | | 10 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.76 | 755.8 | 30.29 | 769.4 | 51.6 | 10.9 | 59 | W | | | 2 | | 10 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.99 | 761.8 | 30.43 | 772.8 | 55.8 | 13.2 | 64 | SW | | | 2 | | 5 | | | 0 | 0 | | Albert Senz. |
| Cassel | 29.80 | 756.8 | 30.41 | 772.4 | 42.4 | 5.8 | 79 | WNW | | | 5 | | 10 | W | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 30.27 | 768.8 | 30.43 | 773.0 | 49.8 | 9.9 | 68 | NW | | | 3 | | 8ck;k | | | 0 | 0 | | Director Lose. |
| Emden | 30.36 | 771.2 | 30.40 | 772.1 | 45.7 | 7.6 | 72 | W | | | 6 | | 5 | | | 0 | 0 | | Prof. Prestel. |
| Frankfort on the Main | 30.13 | 765.4 | 30.51 | 774.9 | 52.2 | 11.2 | 59 | WNW | | | 1 | | 8 | | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 28.99 | 736.4 | 30.47 | 774.0 | 45.7 | 7.6 | 85 | S | | | 4 | | 0 | | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 30.21 | 767.2 | 30.28 | 769.0 | 47.5 | 8.6 | 65 | WNW | | | 5 | | 7k | | | 0 | 0 | Fair | Captain F. Hegemann. |
| Kiel | 30.19 | 766.7 | 30.21 | 767.2 | 46.2 | 7.9 | 70 | W | | | 7 | | 7 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.98 | 761.5 | 30.06 | 763.5 | 43.7 | 6.5 | 78 | SW | | | | | | | | 0.000 | 0.01 | Cloudy | Prof. E. Luther. |
| Köslin | | | 30.09 | 764.2 | 43.0 | 6.1 | | W | | | 4 | | 4 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.95 | 760.7 | 30.38 | 771.6 | 50.7 | 10.4 | 68 | WNW | | | 4 | | 9 | WNW | | 0 | 0 | | Prof. Bruhns. |
| Memel, Naval School | 29.92 | 760.0 | 29.97 | 761.2 | 37.4 | 3.0 | 83 | SSW | | | 5 | | 10 | | | | | Foggy | Reinbrech von Skalweit. |
| Neufahrwasser | 30.05 | 763.3 | 30.07 | 763.7 | 45.0 | 7.2 | 79 | WNW | | | 4 | | 10 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.95 | 760.7 | 30.24 | 768.1 | 52.2 | 11.2 | 64 | NW | | | 8 | | 10 | | | 0 | 0 | Cloudy | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.93 | 760.1 | 30.48 | 774.3 | 55.4 | 13.0 | 66 | Calm | | | 0 | | 5 | NW | | 0 | 0 | | Dr. Schur. |
| Stuttgart | 29.45 | 748.0 | 30.39 | 772.0 | 56.3 | 13.5 | 56 | N | | | 2 | | 3 | W | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | 29.85 | 758.2 | 30.38 | 771.7 | 48.7 | 9.3 | 72 | W | | | 3 | | 10 | | | 0 | 0 | Dense fog | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.85 | 732.7 | 30.37 | 771.4 | 53.6 | 12.0 | 64 | NW | 2 | 1 | | | 5ck | | | 0 | 0 | | Dr. Von Bebber. |
| Wustrow, Naval School | 30.18 | 766.6 | 30.22 | 767.6 | 42.8 | 6.0 | 98 | WSW | | | 2 | | 10 | | | 0 | 0 | Covered | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.77 | 756.1 | 30.17 | 766.3 | 45.9 | 7.7 | | NE | | | 6.0 | | | | | | | ⅛ clear | Dr. J. F. J. Schmidt. |

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

## INDIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.97 | 761.3 | 30.02 | 762.6 | 73.0 | 22.8 | 75 | WSW | 26.0? | 11.6? | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.54 | 750.3 | 30.01 | 762.3 | 88.3 | 31.3 | 23 | Calm | | | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.95 | 760.8 | 29.99 | 761.8 | 78.3 | 25.7 | 74 | NW | 14.0 | 6.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.87 | 707.8 | 29.84 | 758.0 | 85.4 | 29.7 | 32 | W | | | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 29.28 | 743.6 | 30.03 | 762.8 | 74.9 | 23.8 | 37 | NW | 2.9 | 1.3 | | | 2 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.43 | 696.7 | 29.94 | 760.5 | 83.5 | 28.6 | 43 | W | 12.0 | 5.4 | | | 0 | | | | | | |
| Bangalore | | | | | | | | | | | | | | | | 0 | 0 | | |
| Roorkee | 28.96 | 735.6 | 29.87 | 758.8 | 72.8 | 22.7 | 39 | NW | 4.9 | 2.2 | | | 1 | | | 0 | 0 | | |
| Agra | 29.42 | 747.4 | 29.99 | 761.8 | 80.7 | 27.1 | 23 | N | | | | | | | | | | | |
| Trichinopoly | | | | | | | | | | | | | | | | 0 | 0 | Blue sky | |
| Nagpur | 28.92 | 734.5 | 29.95 | 760.8 | 87.5 | 30.8 | 18 | Calm | 3.7 | 1.6 | | | | | | | | | |
| Madras | | | | | | | | | | | | | | | | 0 | 0 | Blue sky | |
| Lucknow | 29.60 | 751.8 | 29.98 | 761.4 | 76.3 | 24.6 | 30 | WNW | 4.3 | 1.9 | | | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.68 | 753.8 | 29.99 | 761.8 | 77.2 | 25.1 | 34 | Calm | 3.4 | 1.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.80 | 756.8 | 29.98 | 761.5 | 76.3 | 24.6 | 27 | W | 1.2 | 0.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.96 | 710.0 | 30.00 | 761.9 | 73.3 | 22.9 | 15 | W | 7.2 | 3.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.88 | 758.9 | 29.96 | 761.0 | 85.0 | 29.4 | 26 | ESE | 4.5 | 2.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.97 | 761.3 | 30.00 | 761.9 | 76.7 | 24.8 | 36 | W | 4.0 | 1.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.61 | 752.1 | 30.01 | 762.3 | 71.4 | 21.9 | 57 | NE | 8.4 | 3.8 | | | 0 | | | 0.14 | 3.6 | Blue sky | |
| Chittagong | 29.91 | 759.7 | 30.00 | 762.1 | 75.8 | 24.3 | 86 | Calm | 5.7 | 2.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Sibsagar | 29.72 | 754.8 | 30.07 | 763.7 | 65.3 | 18.5 | 71 | ENE | 2.1 | 0.9 | | | 4 | | | 0 | 0 | Blue sky | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.64 | 727.4 | 30.01 | 762.2 | 81.5 | 27.5 | 19 | NW | 1.6 | 0.7 | | | | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,892.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.95 | 760 6 | 30.36 | 771.1 | 57.7 | 14.3 | 43 | SW | 0.7 | 0.3 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 30.23 | 767.9 | 30.34 | 770.7 | 58.6 | 14.7 | 55 | SE | 0.9 | 3.1 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Vicenza | 29.93 | 760.2 | 30.36 | 771.1 | 60.4 | 15.7 | 42 | SE | 1.8 | 0.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 29.06 | 738.1 | 30.38 | 771.6 | 61.2 | 16.2 | 33 | SW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.47 | 748.4 | 30.37 | 771.5 | 60.1 | 15.6 | 55 | NNE | 3.1 | 1.4 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 28.45 | 722.6 | 30.37 | 771.4 | 56.8 | 13.5 | 52 | N | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 30.19 | 766.9 | 30.42 | 772.6 | 53.1 | 11.7 | 78 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 30.23 | 767.9 | 30.41 | 772.3 | 56.1 | 13.4 | 66 | SW | 4.9 | 2.2 | ..... | ..... | 2 | S | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 30.10 | 764.4 | 30.41 | 772.5 | 63.1 | 17.3 | 32 | SE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 30.11 | 764.7 | 30.37 | 771.3 | 60.8 | 16.0 | 41 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 30.34 | 770.5 | 30.42 | 772.7 | 62.9 | 11.6 | 78 | W | 3.8 | 1.7 | ..... | ..... | 4 | S | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 30.35 | 770.8 | 30.40 | 772.1 | 55.2 | 12.9 | 61 | E | 19.9 | 8.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.82 | 732.0 | 30.39 | 771.8 | 57.7 | 14.3 | 43 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 30.30 | 769.5 | 30.41 | 772.4 | 61.9 | 16.6 | 54 | SSW | ..... | ..... | 2 | ..... | 2 | S | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 30.15 | 765.7 | 30.32 | 770.2 | 62.2 | 16.8 | 44 | NW | 7.4 | 3.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U. | 30.17 | 766.3 | 30.37 | 771.5 | 62.6 | 17.0 | 44 | NNW | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 52.9 | 11.6 | 35 | NNE | 24 8 | 11.1 | ..... | ..... | 0 | ..... | ..... | 0.012 | 0.3 | ..... | Prof. C. De Giorgi. |
| Cagliari | 30.17 | 766.4 | 30.37 | 771.3 | 65.5 | 18.6 | 80 | NW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.41 | 747.1 | 30.31 | 769.8 | 59.0 | 15.0 | 68 | NW | 8.7 | 3.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 30.08 | 763.9 | 30.33 | 770.4 | 57.0 | 13.9 | 52 | NE | 3.8 | 1.7 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 30.20 | 767.1 | 30.28 | 769.0 | 60.6 | 15.9 | 58 | NE | ..... | ..... | 4 | ..... | 6 | NNE | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.82 | 757.4 | 30.37 | 771.5 | 60.3 | 15.7 | 41 | ESE | 4.3 | 1.9 | ..... | ..... | 1 | E | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.8 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 30.19 | 766 8 | 30.26 | 768.6 | 42.1 | 5.6 | 96 | N | 5.4 | 2.4 | ..... | ..... | 10n | ..... | ..... | 1.010 | 25.7 | Raining | The Observatory. |
| Tokei (Yeddo) University | 30.14 | 765.5 | 30.25 | 768.2 | 42 | 5.6 | 96 | NNW | 5 | 2.2 | ..... | ..... | 10n | ..... | ..... | 0.16 | 4.1 | ..... | Prof. P. V. Veeder |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascallentes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | 25.17 | 639.2 | 29.97 | 761.2 | 64 4 | 18.0 | 48 | N | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | L. Castillo, A. E. |
| Guadalajara | 25.14 | 638.6 | 30.19 | 766.8 | 50 0 | 10.0 | 59 | SW | 0.9 | 0.4 | ..... | 0 | 1 | ..... | SW | 0 | 0 | Clear | Prof. L. Perez. |
| Guanajuato | 23.77 | 603.9 | 30.03 | 762.8 | 59.7 | 15.4 | 50 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 56.5 | 13.6 | 66 | SSW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | Prof. M. Leal. |
| Mexico | 23.18 | 588.7 | 30.36 | 771.2 | 49.3 | 9.6 | 73 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.6 | Fine | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 48.7 | 9.3 | 69 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | M. V. de Leon, M. E. |
| Puebla | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 30.20 | 767.2 | 30.22 | 767.5 | 61.7 | 16.5 | 85 | S | 2.0 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 30.22 | 767.7 | 30.25 | 768.4 | 66.2 | 19.0 | 76 | NW | ..... | ..... | ..... | 0 | 2s | ..... | ..... | 0 | 0 | Foggy | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 51.3 | 10.7 | 54 | Calm | 0 | 0 | ..... | 7kn | 0 | SE | ..... | 0 | 0 | Cloudy | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.34 | 592.8 | 30.12 | 765.0 | 44.6 | 7.0 | 40 | ESE | 1.1 | 0.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | P. Spina. [M. M. D. D. |
| Morelia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Tena, F. L. Param. |

Note.—The elevation of Aguascallentes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known The data are published as given.

## NETHERLANDS' SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.53 | 775.5 | 30.53 | 775.5 | 48.6 | 9.2 | ..... | W | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 30.30 | 769.6 | 30.35 | 771.0 | 46.4 | 8.0 | ..... | NW | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 30.38 | 771 6 | 30.38 | 771.6 | 44.8 | 7.1 | ..... | WSW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 30.48 | 774.2 | 30.48 | 774.2 | 46.8 | 8.2 | 73 | W | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 30.42 | 772.6 | 30.47 | 773 8 | 50.5 | 10.3 | 63 | W | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | H. v d Brnk. |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

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

| STATIONS | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.59 | 751.5 | 29.64 | 752.9 | 43.2 | 6.2 | 97 | SW | 15.7 | 7.0 | ..... | ..... | 6 | ..... | ..... | 0.362 | 9.2 | Hailing | |
| Brönö | 29.13 | 740.0 | 29.17 | 741.0 | 37.4 | 3.0 | 83 | SW | 29 | 13 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.37 | 745.9 | 29.51 | 749.6 | 48.4 | 9.1 | 60 | WSW | 13 | 6 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 28.83 | 732.3 | 28.87 | 733.4 | 34.2 | 1.2 | 92 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 1.339 | 34.0 | Rain & snow | |

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

## PORTUGUESE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.64 | 778.3 | 30.84 | 783.2 | 57.2 | 14.0 | 67 | ENE | 23.0 | 10.3 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.42 | 747.2 | 30.43 | 772.8 | 69.1 | 20.6 | 41 | NE | 7.4 | 3.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos |
| Funchal, (Madeira) | 30.33 | 770.3 | 30.41 | 772.5 | 68.6 | 20.0 | 52 | NNE | 3.1 | 1.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 30.09 | 764.3 | 30.45 | 773.3 | 67.1 | 19.5 | 43 | NE | 16.1 | 7.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.71 | 780.0 | 30.80 | 782.2 | 58.6 | 14.8 | 82 | ENE | 19.2 | 8.6 | ..... | ..... | 10 | ..... | ..... | 0.087 | 2.2 | ..... | |

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

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell: Height scale 0–9 | Sea or swell: Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd't |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello, Mozambique, Mozambique | 29.67 | 753.6 | 29.67 | 753.7 | 82.8 | 28.5 | ..... | NE | ..... | ..... | 5 | ..... | 8 | ..... | NE | 3 | NE | Squally | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Sado, River Bolola, Senegambia | 29.96* | 761.0* | 29.97* | 761.3* | 83.3 | 28.2 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 1 | ..... | Blue sky | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.82 | 757.4 | 29.82 | 757.5 | 86.0 | 30.0 | ..... | W | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | Blue sky | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreina, dos Anas, Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.79 | 756.6 | 30.22 | 767.6 | 44.6 | 7.0 | 71 | SW | 16 | 7 | ..... | ..... | 7ck | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.69 | 754.1 | 30.13 | 765.2 | 36.9 | 2.7 | 57 | S | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 29.59 | 749.4 | 29.76 | 755.8 | 36 1 | 2.3 | 85 | WSW | 16 | 7 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.64 | 752.8 | 29.65 | 753.2 | 32.0 | 0.0 | 65 | SSW | 27 | 12 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Knopio | 28.91 | 734.2 | 29.47 | 748.4 | 35.6 | 2.0 | 100 | SW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Ch. Forsten. |
| Kieff | 29.57 | 751.1 | 30.24 | 768.1 | 31.3 | — 0.4 | 72 | NNW | 7 | 3 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 30.14 | 765.6 | 30.21 | 767.4 | 34.0 | 1.1 | 83 | NE | 13 | 6 | ..... | ..... | 8n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.16 | 766.0 | 30.18 | 766.5 | 42.4 | 5.8 | 79 | N | 4 | 2 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Light clouds | Lugorio. |
| Moscow | 29.60 | 751.9 | 30.19 | 766.8 | 25.2 | — 3.8 | 62 | S | 9 | 4 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.81 | 757.2 | 30.02 | 762.6 | 36.3 | 2.4 | 87 | S | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.27 | 743 5 | 29.29 | 744.0 | 25.9 | — 3.4 | 95 | SSW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.65 | 727.8 | 30.07 | 763.7 | 57.4 | 14.1 | 31 | Calm | 0 | 0 | ..... | ..... | 9ks | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.21 | 767.4 | 30.13 | 765.3 | 41.7 | 5.4 | 74 | ENE | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy clouds | Sebastianof. |
| Kasan | 29.91 | 759.8 | 30.21 | 767.3 | 13.3 | —10.4 | 71 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 29.10 | 739.2 | 30.11 | 764.9 | 18.5 | — 7.5 | 69 | W | 9 | 4 | ..... | ..... | 9c | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Nukuss | 30.04 | 762.9 | 30.27 | 768.9 | 48.0 | 8.9 | 54 | ENE | 9 | 4 | ..... | ..... | 5ks | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.73 | 729.7 | 30.49 | 774.4 | 46.8 | 8.2 | 52 | NW | 2 | 1 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.73 | 755.1 | 30.28 | 769.2 | 27.9 | — 2.3 | 69 | Calm | 0 | 0 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs |
| Yeniseisk | 29.94 | 760.4 | 30.28 | 769.1 | 22.1 | — 5.5 | 86 | SE | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Krotkowo* | 29.72 | 754.8 | 30.23 | 767.8 | 18.1 | — 7.7 | 66 | ENE | 11 | 5 | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Peking, (China) | 30.02 | 762.6 | 30.17 | 766.2 | 44.8 | 7.1 | 49 | Calm | 0 | 0 | ..... | ..... | 2cs | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.81 | 706.3 | 30.00 | 762.0 | 14.9 | — 9.5 | 53 | NNW | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 15.8 | — 9.0 | ..... | Calm | 0 | 0 | ..... | ..... | 8s | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 30.34 | 770.5 | 30.44 | 773.1 | 59.4 | 15.2 | 56 | SSW | 2.7 | 1.19 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.61 | 777.5 | 30.67 | 778.9 | 60.4 | 15.8 | 71 | NW | 2.1 | 0.94 | ..... | 2 | 6 | W | ..... | 0.004 | 0.1 | Almost cov. | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.56 | 700.1 | ..... | ..... | 48.2 | 9.0 | 81 | NE | 5.7 | 2.53 | ..... | 0 | 6 | ..... | ..... | 0 | 0 | Clouds | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 28.21 | 716.5 | 30.43 | 772.9 | 67.1 | 19.5 | 35 | NE | 7.4 | 3.33 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |
| Murcia, Met. Obs'y | 30.30 | 769.5 | 30.45 | 773.3 | 70.9 | 21.6 | 50 | SSE | 1.3 | 0.56 | ..... | 0 | 3 | ..... | ..... | 0 | 0 | ..... | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.70 | 754.4 | 30.62 | 777.7 | 54.5 | 12.5 | 63 | NE | 23.6 | 10.56 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | Cloudy | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 30.23 | 767.9 | 30.30 | 769.6 | 64.2 | 17.9 | 61 | NNE | 13.4 | 6.0 | ..... | 0 | 2k | ..... | NNE | 0 | 0 | Clear | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 30.29 | 769.4 | 30.39 | 771.9 | 65.7 | 18.7 | 59 | E | 26.7 | 11.9 | ..... | 1 | 6 | SE | SE | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 30.02 | 762.5 | 30.11 | 764.8 | 74.6 | 23.6 | 90 | SE | 0 | 0 | ..... | 2k | 0 | SE | ..... | 0 | 0 | Clear | Leonardo de Tejeda, Chief of Engineers. |

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

## SWEDISH SERIES.

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

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. ntigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.09 | 738.8 | 29.13 | 739.8 | 35.2 | 1.8 | ..... | SW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.17 | 740.8 | 29.22 | 742.1 | 38.5 | 3.6 | 90 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0.157 | 4.0 | ..... | |
| Hernosand | 29 18 | 741.2 | 29.23 | 742.5 | 39.4 | 4.1 | 84 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.063 | 1.6 | ..... | |
| Stockholm | 29.20 | 741.7 | 29.38 | 746.2 | 41.0 | 5.0 | 97 | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.60 | 751.7 | 29.65 | 753.2 | 40.6 | 4.8 | 87 | WSW | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.24 | 742.8 | 29.32 | 744.7 | 39.7 | 4.3 | 92 | SW | 17.9 | 8.0 | ..... | ..... | 10 | ..... | WSW | 0.066 | 1.67 | ..... | Dr. Hildebrandsson. |

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

## SWISS SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 29.01 | 736.9 | 30.45 | 773.4 | 51.1 | 10.6 | 67 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| Zurich | 28.80 | 731.4 | 30.43 | 773.0 | 54.0 | 12.2 | 66 | S | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +11.6 mm.; Thermometer, +4.4 cent.; Relative Humidity, +3 per cent.

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

## TURKISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.14 | 765.6 | 39.2 | 4.0 | 59 | N | 27 | 12.0 | ..... | ..... | 7 | ..... | N | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanides. |
| Valona | ..... | ..... | 30.20 | 767.1 | 53.2 | 11.8 | ..... | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | A. Bertrand. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.80 | 756.9 | 29.92 | 760.0 | 65.8 | 18.8 | 50 | SSW | ..... | ..... | 5 | ..... | 4c | ..... | ..... | 0 | 0 | D. clouds | Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.81 | 757.2 | 30.14 | 765.5 | 26 | — 3.3 | ..... | SW | 3 | 1.3 | ..... | 0 | 2s | ..... | SW | 0.03 | 0.8 | Clear | W. R. Bigg. |
| *Chatham, N B | ..... | ..... | 29.84 | 757.9 | 15 | — 9.4 | 89 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | G. A. Blair. |
| Charlottetown, P. E. Island | 29.74 | 755.4 | 29.78 | 756.4 | 24 | — 4.4 | 95 | NW | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0.210 | 5.33 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.89 | 759.2 | 30.10 | 764.5 | 14.2 | — 9.9 | 81 | SW | ..... | ..... | 1 | 2ck | 0 | NW | ..... | 0 | 0 | Fair | James Smith, M. A |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | 15 | — 9.4 | 88 | W | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | Clear | H. A. Johnson. |
| Esquimault, B. C | 29.42 | 747.3 | 29.46 | 748.3 | 44.3 | 6.8 | 92 | S | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.13 | 3.3 | Cloudy | W. H. Bevis. |
| *Father Point, Quebec | 29.88 | 758.9 | 29.95 | 760.7 | 11 | — 11.7 | 80 | NW | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | J. McWilliams. |
| Fredericton, N. B | 29.87 | 758.7 | 29.94 | 760.5 | 16.1 | — 8.8 | 83 | W | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. Harrison. |
| *Fort Garry Manitoba | 28.53 | 724.6 | 29.36 | 745.7 | 33 | 0.6 | 94 | S | 6 | 2.7 | ..... | 5k | 5u | S | S | 0 | 0 | Cloudy | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.94 | 735.1 | 30.10 | 764.5 | 29.2 | — 1.6 | 98 | W | ..... | ..... | 2 | 2c | 0 | E | ..... | 0 | 0 | Clear | James Grant. |
| *Halifax, N. S | 29.58 | 751.3 | 29.72 | 754.9 | 30 | — 1.1 | 96 | N | 7 | 3.1 | ..... | ..... | 10n | ..... | ..... | 0.492 | 12.50 | Cloudy | F. Allison, M. A. |
| Hamilton, Ontario | 29.73 | 755.1 | 30.12 | 765.0 | 31.7 | — 0.2 | 93 | SW | ..... | ..... | 1 | 10ck | c | ..... | ..... | 0 | 0 | Cloudy | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.71 | 754.6 | 29.74 | 755.4 | 34 | 1.1 | 100 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.82 | 20.8 | Foggy | E. Weedon. |
| *Kingston, Ontario | 29.77 | 756.1 | 30.13 | 765.3 | 27 | — 2.8 | 88 | SW | 1 | 0.4 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.65 | 753.1 | 29.69 | 754.1 | 29.5 | — 1.4 | ..... | W | 4 | 1.8 | ..... | 8ks | 0 | W | ..... | 0.49 | 12.4 | Cloudy | C. H. Rigby. |
| *Montreal, Quebec | 29.90 | 759.4 | 30.11 | 764.8 | 19 | — 7.2 | 85 | SW | 6 | 2.7 | ..... | 10k | Sm'o | W | ..... | 0.01 | 0.3 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.29 | 744.0 | 30.02 | 762.5 | 27 | — 2.8 | 88 | S | 7 | 3.1 | ..... | 2k | 5ks | SW | SW | 0 | 0 | Fair | Rev. R. Mosley. |
| Peterboro, Ontario | 29.30 | 744.2 | 30.09 | 764.3 | 26.3 | — 3.2 | 86 | SE | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Bright | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.41 | 747.0 | 30.13 | 765.3 | 32 | 0.0 | 90 | SW | 13 | 5.8 | ..... | 10ck | 0 | NW | ..... | Inap. | Inap. | Fair | H Morgan. |
| Port Hastings, N. S | 29.68 | 753.9 | 29.73 | 755.1 | 27.5 | — 2.5 | ..... | NW | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.45 | 748.0 | 30.12 | 765.0 | 33 | 0.6 | 88 | SW | 16 | 7.2 | ..... | 5k | 0 | W | ..... | Inap. | Inap. | Fair | M. Payne. |
| *Quebec, Quebec | 29.74 | 755.4 | 30.10 | 764.5 | 6 | —14.4 | 76 | W | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.52 | 749.8 | 30.02 | 762.5 | 17 | — 8.3 | 84 | SE | 4 | 1.8 | ..... | ..... | ..... | 8s | NW | 0 | 0 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 29.88 | 758.9 | 29.93 | 760.2 | 19 | — 7.2 | 72 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Clear | Dr. Gove. |
| St. John, N. B | 29.72 | 754.9 | 29.90 | 759.4 | 19 | — 7.2 | 84 | NW | 12 | 5.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | G. Murdock, C. E. |
| *Sangeen, Ontario | 29.27 | 743.4 | 30.01 | 762.2 | 31 | — 0.6 | 90 | SW | 4 | 1.8 | ..... | 5cs | 0 | ..... | ..... | 0 | 0 | Fair | K. Stewart. |
| Stayner, Ontario | 29.23 | 742.4 | 30.05 | 763.3 | 28 | — 2.2 | 72 | Calm | 0 | 0 | ..... | 2c | 0 | NW | ..... | 0 | 0 | Fair | R. J. Cole. |
| Stratford, Ontario | 29.75 | 755.6 | 30.09 | 764.3 | 26.8 | — 2.9 | 93 | SW | 6 | 2.7 | ..... | 2ck | 2s | NW | ..... | 0 | 0 | Fair | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.65 | 753.1 | 29.98 | 753.9 | 30 | — 1.1 | 79 | W | 4 | 1.8 | ..... | ..... | 10s | ..... | ..... | 0.66 | 16.8 | Cloudy | T. C. Hill. |
| *Toronto, Ontario | 29.71 | 754.6 | 30.12 | 765.0 | 30 | — 1.1 | 81 | SW | 6 | 2.7 | ..... | 2cs | 2s | W | W | 0 | 0 | Clear | Magnetic Observatory. |
| Windsor, N S | 29.08 | 753.9 | 29.77 | 756.1 | 26.5 | — 3.1 | 94 | NW | 16 | 7.2 | ..... | ..... | 10n | ..... | ..... | 1.02 | 25.9 | Snowing | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 37.0 | 2.8 | 100 | S | ..... | ..... | ..... | ..... | n | ..... | ..... | 0.75 | 19.1 | Hazy | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182ft. or 360.3 m.

1878.—March 5.

UNITED STATES SERIES.

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

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

| STATIONS. | BAROMETER. Correction for instrumental error and temperature. Inches. | BAROMETER. Correction for instrumental error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0–10 | CLOUDS. Amount. Up'er 0–10 | CLOUDS. Amount. Low'r 0–10 | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.90 | 759.4 | 30.14 | 765.5 | 27 | — 2.8 | 64 | NW | 4 | 1.8 | | 0 | 4ks | | W | 0.06 | 1.5 | Fair | |
| Alpena, Michigan | 29.18 | 741.2 | 29.84 | 757.9 | 30 | — 1.1 | 68 | S | 12 | 5.4 | | 5c | 0 | Calm | | 0.02 | 0.5 | Fair | |
| Atlantic City, New Jersey | 30.23 | 767.8 | 30.25 | 768.3 | 28 | — 2.2 | 67 | W | 7 | 3.1 | | 0 | 0 | | | 0 | 0 | Clear | |
| Augusta, Georgia | 30.20 | 767.1 | 30.39 | 771.9 | 36 | 2.2 | 85 | Calm | 0 | 0 | | | Fog | | SW | 0 | 0 | Foggy | |
| Baltimore, Maryland | 30.24 | 768.1 | 30.29 | 769.4 | 34 | 1.1 | 61 | NW | 4 | 1.8 | | 2k | 2s | NW | NW | 0 | 0 | Fair | |
| Barnegat, New Jersey | 30.22 | 767.6 | 30.24 | 768.1 | 34 | 1.1 | 61 | NW | 9 | 4.0 | | 0 | 0 | | | 0 | 0 | Clear. | |
| Bismarck, Dakota | 27.76 | 705.1 | 29.62 | 752.3 | 36 | 2.2 | 53 | NW | 12 | 5.4 | | 0 | 2s | | Calm | 0 | 0 | Clear | |
| Boise City, Idaho | 27.05 | 687.1 | 29.93 | 760.2 | 41 | 5.0 | 65 | S | 12 | 5.4 | | | 10s | | S | 0 | 0 | Cloudy | |
| Boston, Massachusetts | 29.92 | 760.0 | 30.09 | 764.3 | 25 | — 3.9 | 62 | NW | 12 | 5.4 | | 0 | 0 | | | 0.02 | 0.5 | Clear | |
| Brackettville, Texas | 28.88 | 733.5 | 29.99 | 759.4 | 57 | 13.9 | 57 | E | 6 | 2.7 | | | 10s | | SE | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 28.46 | 722.9 | 29.45 | 748.6 | 33 | 0.6 | 89 | W | 7 | 3.1 | | 0 | 1s | | Calm | 0 | 0 | Clear | |
| Brownsville, Texas | 30.06 | 763.5 | 30.12 | 765.0 | 66 | 18.9 | 68 | SE | 16 | 7.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Buffalo, New York | 29.40 | 746.7 | 30.13 | 765.3 | 33 | 0.6 | 79 | SW | 9 | 4.0 | | 5k | 0 | W | | 0.08 | 2.0 | Fair | |
| Burkes, Arizona | | | | | 50 | 10.0 | 64 | Calm | | | | 0 | 0 | | | 0 | 0 | Clear | |
| Burlington, Vermont | 29.87 | 758.7 | 30.15 | 765.8 | 20 | — 6.7 | 70 | N | 3 | 1.3 | | 0 | 0 | | | 0.02 | 0.5 | Clear | |
| Cairo, Illinois | 29.80 | 756.9 | 30.21 | 767.3 | 42 | 5.6 | 66 | S | 9 | 4.0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Camp Grant, Arizona | 25.16 | 639.0 | 29.96 | 761.0 | 50 | 10.0 | 26 | N | | | 1 | 2c | 0 | Calm | | 0 | 0 | Fair | |
| Camp Verde, Arizona | 26.79 | 680.4 | 30.28 | 769.1 | 38 | 3.3 | 72 | Calm | | | | 0 | 0 | | | 0 | 0 | Clear | |
| Campo, California | 27.41 | 696.2 | 29.98 | 761.5 | 37 | 2.8 | 90 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.32 | 770.1 | 30.33 | 770.4 | 40 | 4.4 | 73 | NE | 16 | 7.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Cape Henry, Virginia | 29.30 | 744.2 | 30.32 | 770.1 | 40 | 4.4 | 65 | NW | 18 | 8.0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 30.33 | 770.4 | 30.35 | 770.9 | 40 | 4.4 | 73 | NW | 15 | 6.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Cape May, New Jersey | 30.24 | 768.1 | 30.27 | 768.8 | 35 | 1.7 | 52 | NW | 20 | 8.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Charleston, South Carolina | 30.36 | 771.1 | 30.44 | 773.2 | 44 | 6.7 | 60 | NE | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 23.80 | 604.5 | 29.74 | 755.4 | 34 | 1.1 | 70 | NW | 32 | 14.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Chicago, Illinois | 29.19 | 741.4 | 29.89 | 759.2 | 39 | 3.9 | 64 | S | 20 | 8.9 | | 1cs | 0 | S | | 0 | 0 | Clear | |
| Cincinnati Ohio | 29.55 | 750.6 | 30.22 | 767.6 | 35 | 1.7 | 75 | SE | 4 | 1.8 | | 2cs | 0 | W | | Inap. | Inap. | Clear | |
| Cleveland, Ohio | 29.43 | 747.5 | 30.19 | 766.8 | 32 | 0.0 | 69 | S | 9 | 4.0 | | 2cs | 0 | Calm | | Inap. | Inap. | Clear | |
| Concho, Texas | 28.07 | 713.0 | 29.74 | 755.4 | 50 | 10.0 | 19 | SW | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Corsicana, Texas | 29.60 | 751.8 | 30.08 | 764.0 | 48 | 8.9 | 78 | S | 8 | 3.6 | | 2cs | 0 | Calm | | 0 | 0 | Clear | |
| Davenport, Iowa | 29.19 | 741.4 | 29.84 | 757.9 | 40 | 4.4 | 65 | SW | 16 | 7.2 | | 4cs | Haze | SW | Calm | 0 | 0 | Fair | |
| Deadwood, Dakota | 25.15 | 638.8 | | | 30 | — 1.1 | 89 | SW | 1 | 0.4 | | 0 | 5s | | Calm | 0 | 0 | Fair | |
| Denison, Texas | 29.21 | 741.9 | 30.04 | 762.2 | 50 | 10.0 | 65 | S | 15 | 6.7 | | 2cs | 0 | S | | 0 | 0 | Fair | |
| Denver, Colorado | 24.58 | 624.3 | 29.80 | 756.9 | 37 | 2.8 | 38 | SW | 7 | 3.1 | | 0 | 0 | | | 0 | 0 | Clear | |
| Detroit, Michigan | 29.38 | 746.2 | 30.08 | 764.0 | 31 | — 0.6 | 79 | SW | 12 | 5.4 | | 5cs | 0 | Calm | | 0 | 0 | Fair | |
| Dodge City, Kansas | 27.15 | 689.6 | 29.41 | 747.0 | 46 | 7.8 | 69 | N | 16 | 7.2 | | 0 | 5s | | N | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.05 | 737.9 | 29.75 | 755.6 | 39 | 3.9 | 64 | S | 6 | 2.7 | | 8ck | 1s | Calm | Calm | 0 | 0 | Cloudy | |
| Duluth, Minnesota | 28.84 | 732.5 | 29.51 | 749.5 | 35 | 1.7 | 80 | Calm | 0 | 0 | | 0 | 2s | | Calm | 0 | 0 | Fair | |
| Eagle Pass, Texas | 29.20 | 741.7 | 29.94 | 760.5 | 56 | 13.3 | 67 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Eastport, Maine | 29.84 | 757.9 | 29.92 | 760.0 | 20 | — 6.7 | 70 | NW | 19 | 8.5 | | 0 | 0 | | | 0.05 | 1.3 | Clear | |
| Erie, Pennsylvania | 29.42 | 747.3 | 30.16 | 766.1 | 34 | 1.1 | 79 | S | 8 | 3.6 | | 8ck | 2s | W | | 0 | 0 | Cloudy | |
| Escanaba, Michigan | 29.10 | 739.1 | 29.76 | 755.9 | 33 | 0.6 | 80 | S | 10 | 4.5 | | 0 | 0 | | | 0 | 0 | Clear | |
| Florence, Arizona | 28.31 | 719.1 | 29.91 | 759.7 | 45 | 7.2 | 60 | Calm | | | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | 24.07 | 611.4 | 30.07 | 763.8 | 40 | 4.4 | 40 | S | 7 | 3.1 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.45 | 646.4 | | | 38 | 2.2 | 46 | SW | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.42 | 747.3 | 29.96 | 761.0 | 50 | 10.0 | 39 | S | 17 | 7.6 | | 8c | | SW | | 0 | 0 | Fair | |
| Fort Griffin, Texas | 28.63 | 727.2 | 29.89 | 759.2 | 54 | 12 2 | 43 | S | 12 | 5.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.08 | 738.6 | 29.12 | 739.6 | — 3 | —19.4 | 100 | NE | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Sill, Indian Territory | 28.71 | 720.2 | 29 82 | 757.4 | 48 | 8.9 | 62 | S | 11 | 4.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Galveston, Texas | 30.13 | 765.3 | 30.18 | 766.6 | 58 | 14.4 | 87 | SE | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.27 | 743.4 | 29.93 | 760.2 | 40 | 4.4 | 65 | S | 20 | 8.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Indianapolis, Indiana | 29.33 | 745.0 | 30.14 | 765.5 | 34 | 1.1 | 70 | SE | 10 | 4.5 | | 2cs | 0 | Calm | | 0 | 0 | Clear | |
| Indianola, Texas | 30.11 | 764.8 | 30.14 | 765.5 | 61 | 16.1 | 82 | SE | 12 | 5.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.76 | 730.5 | 29.89 | 759.2 | 50 | 10.0 | 45 | S | 24 | 10.7 | | 1c | 0 | S | | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.37 | 771.4 | 30.39 | 771.9 | 44 | 6.7 | 68 | NW | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.20 | 741.7 | 29.81 | 757.2 | 47 | 8.3 | 55 | SW | 9 | 4.0 | | 2cs | 0 | Calm | | 0 | 0 | Fair | |
| Key West, Florida | 30.29 | 769.4 | 30.32 | 770.1 | 69 | 15.0 | 65 | N | 16 | 7.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Kittyhawk, North Carolina | 30.31 | 769.9 | 30.34 | 770.6 | 37 | 2.8 | 71 | N | 19 | 8.5 | | 0 | 0 | | | 0 | 0 | Clear | |
| Knoxville, Tennessee | 29.32 | 744.7 | 30.39 | 771.9 | 29 | — 1.7 | 89 | Calm | 0 | 0 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| La Crosse, Wisconsin | 28.85 | 733.5 | 29.61 | 752.1 | 40 | 4.4 | 73 | S | 14 | 6.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 26.05 | 661.7 | 30.20 | 767.1 | 38 | 3.3 | 56 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Laredo, Texas | 29.61 | 752.1 | 29.95 | 760.7 | 58 | 14.4 | 81 | SE | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Leavenworth, Kansas | 28.87 | 733.3 | 29.70 | 754.4 | 48 | 8.9 | 78 | S | 16 | 7.2 | | 2cs | 0 | SW | | 0 | 0 | Clear | |
| Los Angeles, California | 29.66 | 753.4 | 30.01 | 762.2 | 46 | 7 8 | 84 | NE | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.66 | 753.4 | 30.24 | 768.1 | 38 | 3.3 | 72 | SE | 6 | 2.7 | | 0 | Sm'e | | SE | 0 | 0 | Clear | |
| Lynchburg, Virginia | 29.58 | 751.3 | 30.29 | 769.4 | 39 | 3.9 | 47 | NW | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Maricopa Wells, Arizona | | | | | 34 | 1.1 | 61 | N | | | | 0 | 0 | | | 0 | 0 | Clear | |
| Marquette, Michigan | 29.00 | 736.6 | 29.70 | 754.4 | 37 | 2.8 | 53 | SE | 8 | 3.6 | | 1c | 0 | Calm | | 0 | 0 | Cloudy | |
| Mason, Texas | 28.37 | 720.6 | 30.12 | 765.0 | 55 | 12.8 | 74 | S | 8 | 3.6 | | | 10s | | S | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.91 | 759 7 | 30.25 | 768.3 | 40 | 4.4 | 71 | S | 5 | 2.2 | | 5c | Sm'e | SW | Calm | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.13 | 739.9 | 29.88 | 757.7 | 35 | 1.7 | 80 | SW | 11 | 4.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Mobile, Alabama | 30.33 | 770 4 | 30.37 | 771.4 | 45 | 7.2 | 76 | N | 1 | 0.4 | | 0 | Sm'e | | | 0 | 0 | Clear | |
| Montgomery, Alabama | 30.14 | 765.6 | 30.40 | 772.1 | 38.5 | 3.6 | 81 | Calm | 0 | 0 | | 0 | Fg:sm' | | Calm | 0 | 0 | Hazy | |
| Morgantown, West Virginia | 29.19 | 741.4 | 30.30 | 769.6 | 33 | 0.6 | 61 | S | 5 | 2.2 | | 1c | 0 | W | | 0.01 | 0.3 | Clear | |
| Mt. Washington, N. H. | 23 38 | 593.8 | 29.74 | 755.4 | — 5 | —20.6 | 63 | NW | 90 | 40.2 | | 0 | 0 | | | 0.15 | 3.8 | Clear | |
| Nashville, Tennessee | 29.72 | 751.9 | 30.28 | 769.1 | 45 | 7.2 | 18 | E | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| New Haven, Connecticut | 30.05 | 763.3 | 30.17 | 766.3 | 32 | 0.0 | 74 | N | 6 | 2.7 | | 0 | 0 | | NW | 0.02 | 0.5 | Fair | |
| New London, Connecticut | 30.11 | 764.8 | 30.16 | 766.1 | 31 | — 0.6 | 69 | NW | 6 | 2.7 | | 0 | 2s | | | 0.05 | 1.3 | Clear | |
| New Orleans, Louisiana | 30.24 | 768.1 | 30.30 | 769.6 | 49 | 9.4 | 71 | S | 4 | 1.8 | | 0 | 0 | | Calm | 0 | 0 | Fair | |
| Newport, Rhode Island | 30.07 | 763.8 | 30.12 | 765.0 | 27 | — 2.8 | 64 | NW | 10 | 4.5 | | 0 | Fg:sm' | | | 0.02 | 0.5 | Clear | |
| New York, New York | 30.02 | 762 5 | 30.29 | 767.1 | 33 | 0.6 | 79 | NW | 4 | 1.8 | | 5k | 0 | NW | | 0 | 0 | Fair | |
| Norfolk, Virginia | 30.21 | 767.4 | 30.35 | 770.9 | 37 | 2.8 | 63 | N | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| North Platte, Nebraska | 26.88 | 682.7 | 29.45 | 748.0 | 38 | 3.3 | 45 | NW | 16 | 7.2 | | 0 | Haze | | Calm | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 29.57 | 751.1 | 29.61 | 752.1 | 37 | 2.8 | 90 | SW | 12 | 5.4 | | | 10n | | SW | 0.78 | 19.8 | Light rain | |
| Omaha, Nebraska | 28.51 | 724 1 | 29.58 | 751.3 | 40 | 4 4 | 82 | S | 4 | 1.8 | | 5c | 5s | Calm | Calm | 0 | 0 | Cloudy | |
| Oswego, New York | 29.82 | 757.4 | 30.16 | 766.1 | 36 | 2.2 | 61 | SW | 2 | 0.9 | | | 10s | | Calm | 0.01 | 0.3 | Cloudy | |
| Pembina, Dakota | 29.62 | 724.6 | 29.40 | 746.7 | 29.5 | — 1.4 | 89 | S | 2 | 0.9 | | 0 | 2s | | Calm | 0 | 0 | Clear | |
| Philadelphia, Pennsylvania | 28.63 | 724.6 | 30.24 | 768.1 | 33 | 0.6 | 50 | NW | 12 | 5.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Phœnix, Arizona | 30.18 | 766.6 | 30.66 | 778.7 | 46 | 7.8 | 62 | E | | | | 5cs | 0 | W | | 0 | 0 | Fair | |
| Pike's Peak, Colorado | 28.81 | 731.8 | 29.77 | 756.1 | 3 | —16.3 | 73 | NW | 48 | 21.5 | | 0 | 0 | | | 0 | 0 | Clear | |
| Pioche, Nevada | 17.56 | 446.0 | 29.74 | 755.4 | 33 | 0.6 | 65 | W | 2 | 0.9 | | 5c | 0 | Calm | | 0 | 0 | Fair | |
| Pittsburg, Pennsylvania | 23.98 | 609 1 | 30.25 | 768.3 | 31 | — 0.6 | 79 | SW | 8 | 3.6 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| Port Huron, Michigan | 29.40 | 746.7 | 30.06 | 763.5 | 32 | 0.0 | 79 | SW | 14 | 6.3 | | 8cs | 0 | W | | 0 | 0 | Fair | |
| Portland, Maine | 29.37 | 746.0 | 30.06 | 763.5 | 28 | — 2.2 | 66 | N | 3 | 1.3 | | 0 | 0 | | | 0.10 | 2.5 | Clear | |
| Portland, Oregon | 30.00 | 762.0 | 30.06 | 763.5 | 28 | — 2.2 | 66 | SE | 20 | 8.9 | | 0 | 5s | | SE | 0.61 | 15.5 | Fair | |
| Prescott, Arizona | 29.73 | 755.1 | 29.84 | 757.9 | 41 | 5.0 | 83 | Calm | | | | 5cs | 0 | Calm | | 0 | 0 | Fair | |
| Punta Rassa, Florida | 24.76 | 628 9 | 30.12 | 765.0 | 32 | 0.0 | 59 | N | 4 | 1.8 | | 0 | Haze | | Calm | 0 | 0 | Clear | |
| Red Bluff, California | 30.32 | 770.1 | 30.34 | 770.6 | 53 | 11.7 | 53 | SE | 10 | 4.5 | | | 10s | | Calm | Inap. | Inap. | Cloudy | |
| | 29.79 | 756.7 | 30.16 | 766.1 | 48 | 8.9 | 85 | | | | | | | | | | | | |

## UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rochester, New York | 29.47 | 748.5 | 30.11 | 764.8 | 33 | 0.6 | 89 | W | 5 | 2.2 | ..... | 2c | Haze | Calm | Calm | 0.01 | 0.3 | Fair | |
| Roseburg, Oregon | 29.43 | 747.5 | 30.00 | 762.0 | 44.5 | 6.9 | 76 | S | 5 | 2.2 | ..... | ..... | 10n | ..... | Calm | 0.10 | 2.5 | Light rain | |
| Sacramento, California | 30.10 | 764.5 | 30.18 | 766.6 | 49 | 9.4 | 93 | S | 4 | 1.8 | ..... | 2k | 0 | SW | ..... | 0 | 0 | Fair | |
| St. Louis, Missouri | 29.45 | 748.6 | 30.04 | 763.0 | 40 | 4.4 | 65 | S | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Marks, Florida | 30.38 | 771.6 | 30.40 | 772.1 | 35 | 1.7 | 95 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul, Minnesota | 28.66 | 728.0 | 29.48 | 748.8 | 35 | 1.7 | 80 | SE | 6 | 2.7 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.62 | 650.7 | 29.95 | 760.7 | 35 | 1.7 | 53 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| San Antonio, Texas | 29.41 | 747.0 | 30.00 | 762.0 | 51 | 10.6 | 93 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Diego, California | 30.00 | 762.0 | 30.07 | 763.8 | 49 | 9.4 | 85 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandusky, Ohio | 29.44 | 747.8 | 30.13 | 765.3 | 35 | 1.7 | 65 | SW | 12 | 5.4 | ..... | 0 | 4ks | ..... | Calm | 0 | 0 | Fair | |
| Sandy Hook, New Jersey | 30.18 | 766.6 | 30.20 | 767.1 | 33 | 0.6 | 79 | NW | 17 | 7.6 | ..... | 5k | 0 | NW | ..... | 0 | 0 | Fair | |
| San Francisco, California | 30.12 | 765.0 | 30.19 | 766.8 | 52 | 11.1 | 73 | SE | 8 | 3.6 | ..... | 0 | 8s | ..... | Calm | Inap. | Inap. | Fair | |
| Santa Fé, New Mexico | 29.19 | 689.0 | 29.73 | 755.1 | 32 | 0.0 | 59 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 30.28 | 769.1 | 30.38 | 771.6 | 43 | 6.1 | 67 | N | 4 | 1.8 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| Shreveport, Louisiana | 29.97 | 761.2 | 30.20 | 767.1 | 46 | 7.8 | 69 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.36 | 771.1 | 30.40 | 772.1 | 37 | 2.8 | 71 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Springfield, Massachusetts | 29.95 | 760.7 | 30.09 | 764.3 | 31 | — 0.6 | 48 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Stockton, Texas | 27.02 | 686.3 | 30.02 | 762.5 | 44 | 6.7 | 30 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 30.02 | 762.5 | 30.08 | 764.0 | 26 | — 3.3 | 63 | NW | 24 | 10.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Toledo, Ohio | 29.37 | 746.0 | 30.07 | 763.8 | 35 | 1.7 | 70 | SW | 8 | 3.6 | ..... | 8cs | 0 | SW | ..... | 0 | 0 | Fair | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 42 | 5.6 | 75 | S | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tybee Island, Georgia | 30.35 | 770.9 | 30.38 | 771.6 | 46 | 7.8 | 77 | N | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.48 | 748.8 | ..... | ..... | 38 | 3.3 | 81 | W | 8 | 3.6 | ..... | 2c | 2s | W | S | 0.08 | 2.0 | Fair | |
| Vicksburg, Mississippi | 30.00 | 762.0 | 30.27 | 768.8 | 44 | 6.7 | 60 | SE | 8 | 3.6 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Virginia City, Montana | 24.00 | 609.6 | 29.48 | 748.8 | 24 | — 4.4 | 87 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | Calm | 0.02 | 0.5 | Fair | |
| Visalia, California | 29.82 | 757.4 | 30.21 | 767.3 | 41 | 5.0 | 91 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C | 30.22 | 767.6 | 30.34 | 770.6 | 33.5 | 0.8 | 74 | NW | 4 | 1.8 | ..... | 0 | 5s | ..... | NW | 0 | 0 | Fair | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 38 | 3.3 | 63 | NW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.30 | 769.6 | 30.39 | 771.9 | 35 | 1.7 | 80 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Winnemucca, Nevada | 25.61 | 650.5 | 29.97 | 761.2 | 35 | 1.7 | 53 | SW | 11 | 4.9 | ..... | 10k | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Wood's Holl, Mass | 29.03 | 737.3 | 30.09 | 764.3 | 27 | — 2.8 | 77 | NW | 16 | 7.2 | ..... | Haze | 0 | ..... | ..... | 0.03 | 0.8 | Clear | |
| Yankton, Dakota | 28.32 | 719.3 | 29.59 | 751.6 | 40 | 4.4 | 64 | NW | 12 | 5.4 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Yuma, Arizona | 29.89 | 759.2 | 30.06 | 763.5 | 58 | 14.4 | 26 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A | 29.67 | 753.6 | 29.73 | 755.1 | —13.0 | —25.0 | 74 | NE | 2 | 0.9 | ..... | 3ck | 0 | NE | ..... | 0 | 0 | Fair | J. Fortescue, W. Wood |
| Havana, Cuba, W. I | 30.24 | 768.1 | 30.26 | 768.6 | 65 | 18.3 | 94 | N | 2.4 | 1.1 | ..... | 4c | 0 | NE | ..... | 0 | 0 | Fair | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | 30.19 | 766.8 | 30.20 | 767.1 | 78 | 25.6 | 90 | Calm | 0 | 0 | ..... | 5c | 2s | NE | ..... | 0.14 | 3.6 | ..... | James Gall. |
| Navassa, W. I | 30.02 | 762.5 | 30.10 | 764.5 | 77 | 25.0 | ..... | NE | 20 | 8.9 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | F. M. Everett. |
| Paramaribo, D. Guiana, S. A | ..... | ..... | 30.08 | 764.0 | 83 | 28.3 | 79 | NE | ..... | ..... | 2 | 3c | 5k | E | ..... | 0 | 0 | Fair | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | 30.07 | 763.7 | 30.08 | 763.9 | 87.8 | 31 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | Dr. H. Groot. |
| Medellin, Colombia, S. A | 25.24 | 641.1 | ..... | ..... | 67.5 | 19.7 | 80 | Calm | ..... | ..... | 0 | 2k | 2ks | ..... | ..... | 0 | 0 | ..... | Thomas Herran |
| Honolulu, Oahu, H. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Daniel Smith. |
| Makawao, Maui, H. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. L. Clarke. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medillin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,590 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.6 m.; Concho, 1, 750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.468 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 1—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.11 | 764.8 | 49 | 9.4 | 47 | 8.3 | 100 | SE | 1 | 0.4 | ..... | ..... | 8ks | ..... | S&E | 0.004 | 0.10 | ..... | ..... | Cloudy..... | |
| Navy Yard, Pensacola, Fla. | 30.34 | 770.6 | 51 | 10.6 | 50 | 10.0 | 93 | NE | 2 | 0.9 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Portsmouth, N.H | 30.09 | 764.3 | 66 | 18.9 | 25 | — 3.9 | 87 | WNW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | ..... | |
| Naval Hospital, Yokohama, Japan | 30.21* | 767.3* | 52 | 11.1 | 43 | 6.1 | 92 | N | ..... | ..... | 3 | ..... | 10n | ..... | S | 0.13 | 3.3 | ..... | ..... | Raining..... | |
| Adams. Panama | 29.98 | 761.5 | 83 | 28.3 | 82 | 27.8 | 83 | NNW | ..... | ..... | 2 | ..... | 5 | ..... | N | ..... | ..... | ..... | ..... | Fair..... | |
| Alliance, Vourla, Turkey | 30.00‡ | 762.0‡ | ..... | ..... | 47 | 8.3 | 62 | N | ..... | ..... | 4–7 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Squally..... | |
| Ashuelot. Shanghai, China | 30.26* | 768.6* | 50 | 10.0 | 42 | 5.6 | 91 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | D. clouds..... | |
| Canonicus, New Orleans, La. | 30.25 | 768.3 | 40 | 4.4 | 47 | 8.3 | 85 | S | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Pleasant..... | |
| Colorado, New York, N. Y. | 30.18‡ | 766.6‡ | ..... | ..... | 34 | 1.1 | 79 | WNW | 13 | 5.8 | ..... | ..... | 5 | ..... | NW | 0 | 0 | ..... | ..... | Hazy..... | |
| Constitution, N. 39° 32′ W. 70° 33′ | 30.14‡ | 765.5‡ | ..... | ..... | 35 | 1.7 | 70 | NNW | ..... | ..... | 6 | ..... | 10 | ..... | S | ..... | ..... | Mod'ate | S | Overcast..... | |
| Despatch, Constantinople, Turkey. | 30.29 | 769.4 | 74 | 23.3 | 42 | 5.6 | 58 | NNE | ..... | ..... | 4 | ..... | 8 | ..... | NE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Enterprise, New Orleans, La. | 30.29‡ | 769.4‡ | ..... | ..... | 49 | 9.4 | 85 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Franklin. Norfolk, Va. | 30.32‡ | 770.1‡ | ..... | ..... | 37 | 2.8 | 71 | Calm | 0 | 0 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | ..... | D. clouds..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.03 | 762.7 | 75 | 23.9 | 74 | 23.3 | 72 | NNE | ..... | ..... | 2–3 | ..... | 0 | ..... | ..... | ..... | ..... | Mod'ate Ground | NW | Clear..... | |
| Marion, Piraeus, Greece | 30.15 | 765.8 | 55 | 12.8 | 42 | 5.6 | 100 | NNE | ..... | ..... | 5 | ..... | 10 | ..... | NNE | Moder-ate. | Moder-ate. | ..... | ..... | Cloudy..... | |
| Michigan, Erie, Pa. | 29.66 | 753.4 | 75 | 23.9 | 33 | 0.6 | 51 | S | ..... | ..... | 2 | ..... | 5 | ..... | S | ..... | ..... | ..... | ..... | Fair..... | |
| Monongahela, Manila, Phillipine Islands. | 30 13* | 765.3* | 83 | 28.3 | 82 | 27.8 | 91 | N | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | Smooth | ..... | D. clouds..... | |
| New Hampshire, Port Royal, S. C. | 30.52 | 775.2 | 49 | 9.4 | 48 | 8.9 | 70 | N | 14 | 6.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Omaha, S. 22° 18′, W. 30° 00′ | 30.18* | 766.6* | 82 | 27.8 | 81 | 27.2 | 70 | NE | 2 | 0.9 | ..... | ..... | 3 | ..... | NE | 0 | 0 | Smooth | ..... | Pleasant..... | |
| Onward, Callao, Peru | 29.98† | 761.5† | ..... | ..... | 74 | 23.3 | 81 | SSE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee. N. 18° 48′, W. 85° 54′ | 30.32‡ | 770.1‡ | ..... | ..... | 72 | 22.2 | 67 | NE | ..... | ..... | 5 | ..... | 5 | ..... | NE | ..... | ..... | Cross | NE | Fair..... | |
| Palos, Shanghai, China | 30.30* | 769.6* | 60 | 15.6 | 41 | 5.0 | 100 | NNW | ..... | ..... | 3 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Overcast..... | |
| Pensacola, Honolulu, H. I. | 30.27 | 768.8 | 73 | 22.8 | 70 | 21.1 | 90 | NE | 3 | 1.3 | ..... | ..... | 2 | ..... | NE | 0 | 0 | ..... | ..... | Clear..... | |
| Plymouth, Norfolk, Va. | 30.30‡ | 769.6‡ | ..... | ..... | 36 | 2 2 | 70 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Powhatan, N. 13° 50′, W. 64° 26′ | 30.09‡ | 764.3‡ | ..... | ..... | 80 | 26.7 | 96 | ENE | 7.2 | 3.2 | ..... | ..... | 8 | ..... | ENE | 0.06 | 1.5 | Smooth | S&E | Pleasant..... | |
| Ranger. N. 21° 55′ E. 120° 48′ | 30.19* | 766.8* | ..... | ..... | 80 | 26.7 | 87 | SW | ..... | ..... | 1–2 | ..... | 6 | ..... | SW | ..... | ..... | Mod'ate | W | Cloudy..... | |
| Rio Bravo, Brownsville, Texas | ..... | ..... | ..... | ..... | 69 | 20.6 | 90 | SE | ..... | ..... | 3 | ..... | 2 | ..... | SE | ..... | ..... | ..... | ..... | Clear..... | |
| Santee, Annapolis, Md. | 30.37* | 771.4* | 65 | 18.3 | 36 | 2.2 | 61 | W | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Saratoga, Washington, D. C. | 30.23* | 767.8* | ..... | ..... | 40 | 4.4 | 91 | NW | ..... | ..... | 2 | ..... | 5 | ..... | W | 0 | 0 | ..... | ..... | Clear..... | |
| St. Louis, League Island, Pa | 30.15 | 765.8 | 52 | 11.1 | 33 | 0.6 | 89 | W | 3 | 1.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Supply, N. 44° 45′ W. 45° 45′ | 30.23 | 757.8 | 58 | 14.4 | 57 | 13.9 | 81 | SSW | ..... | ..... | 8 | ..... | 8 | ..... | SSW | ..... | ..... | Rough | SW | Fair..... | |
| Swatara, Port-au-Prince, Hayti | 30.23* | 767.8* | ..... | ..... | 79 | 26.1 | 78 | E | ..... | ..... | 1 | ..... | 10 | ..... | E | ..... | ..... | ..... | ..... | Showery..... | |
| Tennessee, N. 16° 25′, E. 113° 36′ | 30.07* | 763.8* | 81 | 27.2 | 81 | 27.2 | 78 | SE | 3 | 1.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Mod'ate | SE | Blue sky..... | |
| Trenton, Smyrna, Turkey | 29.99‡ | 761.7‡ | ..... | ..... | 46 | 7.8 | 64 | NE | ..... | ..... | 3–5 | ..... | 5 | ..... | NE | 0 | 0 | Mod'ate | NE | Squally ..... | |
| Tuscarora, N. 31° 58,′ W. 118° 17′ | 30.18 | 766.6 | 61 | 16.1 | 58 | 14.4 | 100 | WNW | ..... | ..... | 0–1 | ..... | 0 | ..... | ..... | 0 | 0 | Long Rolling | WSW | Clear..... | |
| Vandalia, Constantinople, Turkey. | 30.06‡ | 763.5‡ | ..... | ..... | 42 | 5.6 | 74 | NNE | ..... | ..... | 4 | ..... | 5 | ..... | NNE | ..... | ..... | ..... | ..... | Snow-squalls | |
| Wabash. Boston, Mass. | 30.09‡ | 764.3‡ | ..... | ..... | 25 | — 3.9 | ..... | NW | 8 | 3.6 | ..... | ..... | 0 | ..... | ..... | 0.02 | 0.5 | ..... | ..... | Clear..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

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

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | Character. | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Panama, N. 48°, W. 125° | | | 29.47† | 748.5† | | | | SW | | | 5 | | 10 | | | Mod'ate | W | Variable | Capt. Seabury. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, Yokohama, Japan | | | | | 41 | 5.0 | | E | | | 5 | | 6 | | NE | | | D. clouds | Capt. Maury. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Auriatic, N. 48° 31', W. 33° 23' | | | 30.70* | 779.8* | | | | WSW | | | 6 | | 10 | | W | Heavy | W | Cloudy | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. W. H. Thompson |
| S. S. Celtic, Liverpool | | | 30.30† | 771.9† | 50 | 10.0 | | WSW | | | 6 | | | | WSW | | | D. clouds | Capt. B. Gleadell. |
| S. S. Germanic, N. 41° 07', W. 55° 06' | | | 29.72† | 754.9† | 59 | 15.0 | 94 | SSW | | | 6 | | 10 | | S | Heavy cross. | SSW; SE | Drizzling | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. *Aneroid; corrected for elevation; instrumental error not known. †Aneroid.

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

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, N. 22° 27', E. 114° 27' | | | 30.16* | 766.1* | | | | Var. | | | 3 | | Heavy | | Var. | Smooth | | Raining | Capt. John Metcalf. |
| S. S. Gaelic, N. 31° 00', W. 171° 50' | | | 29.97† | 761.2† | 64 | 17.8 | ?? | Var. | | | 4 | | n;s | | NW | Long heavy | NNW | Gloomy | Capt. W. H. Kidley |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

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

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 43° 24', W. 49° 52' | W½S | | 29.97 | 761.2 | 43.4 | 6.3 | 88 | S | | | 8 | | 10 | | | Heavy | SW; W | Haze& smoke | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

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

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | Force. | Clouds. | | | | Sea-swell. | | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | Character | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, Philadelphia, Pa | | | 30.36† | 771.1† | 39 | 3.9 | ?? | SW | | | 3 | | 2 | | SSE | | | Clear | Captain Sargent. |
| S. S. Ohio, Liverpool | | | 30.41 | 772.4 | 52 | 11.1 | 93 | WNW | | | 7 | | 2 | | WNW | | | Clear | Captain Morrison. |
| S. S. Pennsylvania, Liverpool | | | 30.38 | 771.6 | 52 | 11.1 | 86 | W | | | 5 | | 6 | | W | | | Partly clear | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. †Aneroid; unreliable, corrected for elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

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

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

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

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

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

**MARINE SERIES. (Miscellaneous.)**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Providence, R. I. | | | 30.02 | 762.5 | 29 | — 1.7 | 66 | NW | 9 | 4.0 | | | 0 | | | | | Clear | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.44 | 747.8 | —26 | —32.2 | 87* | Calm | 0 | 0 | | | 10s | | Calm | | | Cloudy | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Determined by use of hair hygrometer.

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

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

Albert J. Myer

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

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 6, 1878.

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

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

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

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

### ALGERIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.19 | 766.7 | 64.0 | 17.8 | ..... | NE | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Dr. Ollive. |
| Nemours | ..... | ..... | 30.39 | 771.8 | 59.0 | 15.0 | 78 | ENE | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0 | 0 | Covered | Michel. |
| Algiers | ..... | ..... | 30.32 | 770.2 | 59.7 | 15.4 | 80 | NE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Towilliere. |
| La Calle | ..... | ..... | 30.29 | 769.4 | 60.1 | 15.6 | 78 | NW | ..... | ..... | 5 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Boulangeot. |
| Tunis | ..... | ..... | 30.32 | 770.2 | 66.6 | 19.2 | 55 | W | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Jacques. |
| Sfax | ..... | ..... | 30.32 | 770.0 | 68.0 | 20.0 | ..... | NE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Gau. |
| Saida | ..... | ..... | 30.34 | 770.7 | 78.1 | 25.6 | 88 | WNW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Herbin. |
| Tebessa | ..... | ..... | 30.34 | 770.6 | ..... | ..... | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Bourgeois. |
| Geriville | ..... | ..... | 30.36 | 771.2 | 56.5 | 13.6 | 86 | NW | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Lemaillot. |
| Laghouat | ..... | ..... | 30.38 | 771.7 | 61.5 | 16.4 | 47 | E | ..... | ..... | 1 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Guyot. |
| Biskra | ..... | ..... | 30.33 | 770.3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

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

### AUSTRIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.58 | 751.3 | 30.13 | 765.2 | 56.8 | 13.8 | 49 | Calm | ..... | ..... | 0 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.17 | 741.0 | 29.95 | 760.7 | 47.8 | 8.8 | 48 | W | ..... | ..... | 5 | ..... | 9 | ..... | ..... | 0.024 | 0.6 | ..... | Dr. Wierzbiski. |
| Eperies | 29.13 | 740.0 | 30.04 | 763.0 | 41.0 | 5.0 | 69 | S | ..... | ..... | 1 | ..... | 5c | ..... | ..... | 0.016 | 0.40 | ..... | Julius Mikolik. |
| Gratz | 28.81 | 731.8 | 30.06 | 763.5 | 55.9 | 13.8 | 53 | S | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.65 | 727.6 | 30.11 | 764.8 | 42.1 | 5.6 | 61 | SSW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.74 | 730.0 | 30.10 | 764.4 | 49.3 | 9.6 | 64 | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.472 | 12.0 | ..... | Prof. C. Wagner |
| Lemberg | 28.92 | 734.6 | 29.93 | 760.1 | 44.2 | 6.8 | 60 | NW | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0.016 | 0.4 | ..... | Dr. T. Stanecki. |
| Pola | 30.05 | 763.2 | 30.16 | 766.0 | 56.7 | 13.7 | 71 | W | ..... | ..... | 1 | ..... | 1s | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.64 | 752.8 | 30.11 | 764.8 | 46.4 | 8.0 | 52 | SW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.86 | 758.5 | 30.15 | 765.7 | 53.6 | 12.0 | 71 | SE | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Karl Stancel. |
| Trieste | 30.05 | 763.2 | 30.15 | 765.8 | 53.8 | 12.1 | 73 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | P. Busin. |
| Vienna | 29.34 | 745.3 | 30.07 | 763.6 | 52.0 | 11.1 | 51 | W | ..... | ..... | 6 | ..... | 9 | ..... | ..... | 0.063 | 1.6 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.67 | 725.7 | 30.12 | 765.0 | 41.5 | 5.3 | 98 | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.488 | 11.4 | Raining | Prof. M. Passau. |
| Brussels | 29.77 | 756.1 | 29.97 | 761.2 | 50.5 | 10.3 | 82 | WSW | ..... | ..... | 5 | ..... | 10 | ..... | WSW | 0.138 | 3.5 | Light rain | Royal Observatory. |
| Furnes | 29.97 | 761.1 | 29.99 | 761.7 | 50.9 | 10.5 | 79 | W | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0.008 | 0.2 | ..... | M. E. de Cae. |
| Maeseyck | 29.77 | 756.1 | 29.89 | 759.3 | 48.4 | 9.1 | 95 | SW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0.169 | 4.3 | Raining | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

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

## BRITISH SERIES.

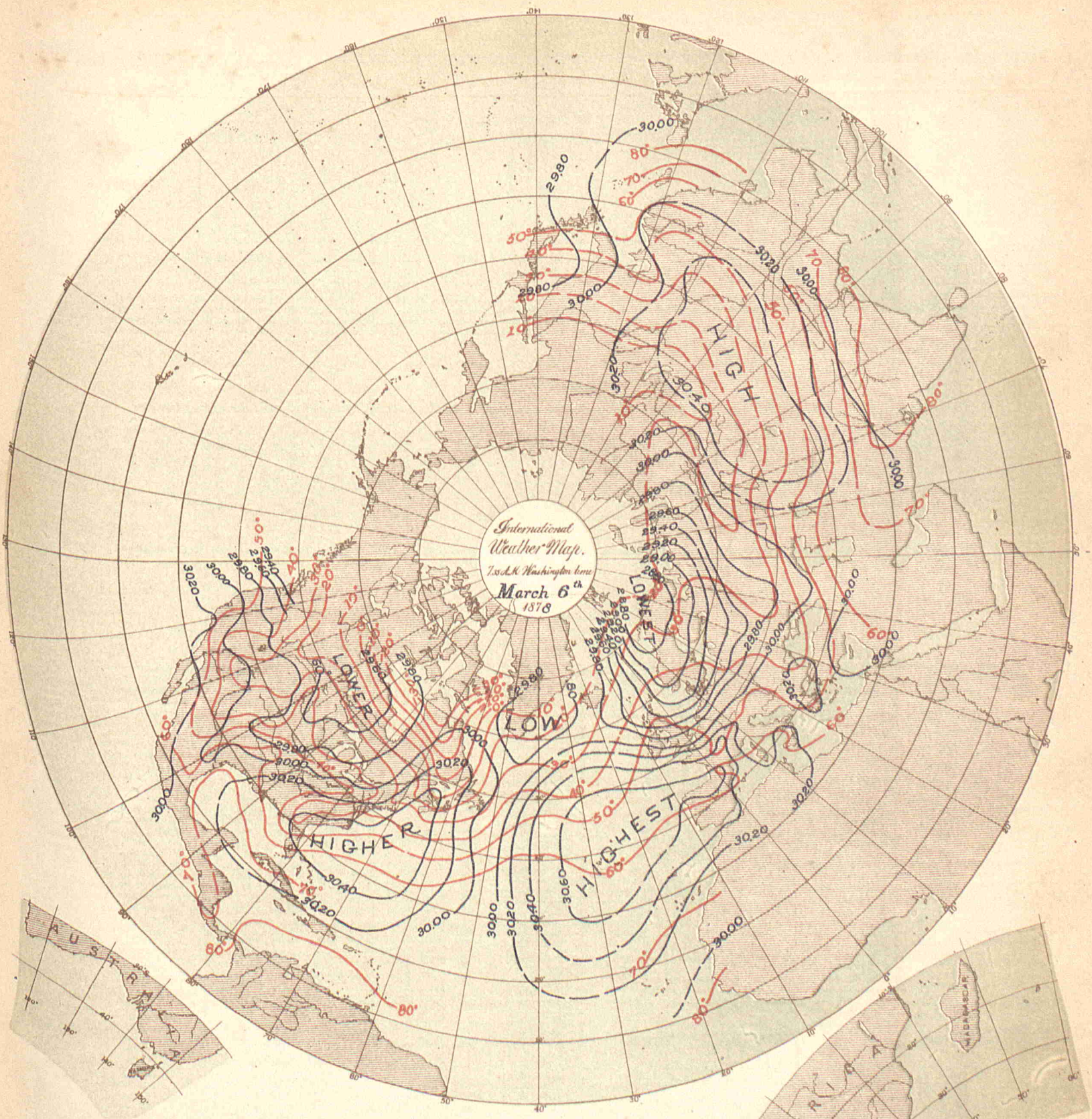
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E. Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.28 | 743.7 | 29.38 | 746.2 | 50.0 | 10.0 | ..... | WNW | 47 | 21.0 | ..... | ..... | 4 | ..... | ..... | 0.120 | 3.05 | Squally..... | W. Boswell. |
| Ardrossan | 29.67 | 753.9 | 29.69 | 754.1 | 49 | 9.4 | ..... | WNW | ..... | ..... | 8 | ..... | 8 | ..... | ..... | ..... | ..... | Raining..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.93 | 760.2 | 50.7 | 10.4 | ..... | W | 32 | 14.3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Squally..... | S. Call, for Dr. Robinson |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.86 | 758.4 | 50.0 | 10.0 | ..... | WSW | 52 | 23.2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Hartnup. |
| Birr Castle, (Parsonstown) | 29.95 | 760.7 | 30.15 | 765.8 | 53.4 | 11.9 | ..... | W | ..... | ..... | 4–5 | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds..... | J. Dreyer. |
| Bradford, Yorkshire | 29.35 | 745.5 | 29.74 | 755.4 | 50.4 | 10.2 | ..... | W | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.08 | 2.0 | Raining..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 30.01 | 762.2 | 30.04 | 763.0 | 79.0 | 26.1 | ..... | NE | ..... | ..... | 2 | ..... | 5 ? | ..... | ..... | ..... | ..... | Overcast?.... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.87 | 758.7 | 55.0 | 12.8 | ..... | WSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast .... | H. Todd. [H.O. |
| Cardington | ..... | ..... | 29.89 | 759.2 | 58.0 | 14.4 | ..... | W | ..... | ..... | 7 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | John McLaren. |
| Chatham, School M. E. | 29.84 | 757.9 | 29.97 | 761.2 | 52.2 | 11.2 | ..... | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.92 | 734.6 | 30.44 | 773.2 | 45.4 | 7.4 | ..... | NW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | Fine..... | Alexander Watt. |
| Donaghadee | 29.82 | 757.4 | 29.85 | 758.2 | 51 | 10.6 | ..... | WNW | ..... | ..... | 7 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | J. Mac Gowan. |
| Dover | 29.95 | 760.7 | 29.98 | 761.5 | 52 | 11.1 | ..... | W | ..... | ..... | 5 | ..... | 7 | ..... | ..... | ..... | ..... | ¾ clouded... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.84 | 757.9 | 50.2 | 10.1 | ..... | NW | 15.0 | 6.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Squally..... | Thomas Mackereth. |
| Falmouth, Observatory | 30.09 | 764.3 | 30.32 | 770.1 | 52.5 | 11.4 | ..... | W | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy ..... | The Staff. |
| Fort Napier, (Natal) | 27.80 | 706.1 | 30.04 | 763.0 | 65.0 | 18.3 | ..... | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Showery..... | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.68 | 753.9 | 29.91 | 759.7 | 86.0 | 30.0 | ..... | NW | ..... | ..... | 0 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's College | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.34 | 770.6 | 30.39 | 771.9 | 61.0 | 16.1 | ..... | E | ..... | ..... | 5 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds..... | Corpl. C. Aitken, A.H.C. |
| Glasgow, Observatory | 29.41 | 747.0 | 29.61 | 752.1 | 49.2 | 9.6 | ..... | WNW | ..... | ..... | 8 | ..... | 8 | ..... | ..... | ..... | ..... | Raining..... | D. G. Maclean. |
| Great Yarmouth | 29.79 | 756.7 | 29.80 | 756.9 | 52 | 11.1 | ..... | W | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.77 | 756.1 | 29.94 | 760.5 | 51.6 | 10.9 | ..... | WSW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | The Staff, for G. B. Airy. |
| Guernsey | 30.07 | 763.8 | 30.30 | 769.6 | 51 | 10.6 | ..... | WSW | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 30.42 | 772.7 | 54 | 12.2 | ..... | W | ..... | ..... | 7 | ..... | 3k | ..... | ..... | 0.08 | 2.0 | Fine..... | M. P. Moyle. |
| Holyhead | 29.54? | 750.3? | 29.49? | 749.0? | 51 | 10.6 | ..... | W | ..... | ..... | 5 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast..... | John Tilston. |
| Jersey | 30.05 | 763.3 | 30.35 | 770.9 | 50.3 | 10.2 | ..... | W | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Hazy ..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 29.98 | 761.5 | 52.3 | 11.3 | ..... | WSW | 26 | 11.6 | ..... | ..... | 10kd | ..... | ..... | ..... | ..... | Threatening | The Staff. |
| Kingstown | 29.95 | 760.7 | 29.97 | 761.2 | 54 | 12.2 | ..... | WNW | ..... | ..... | 7 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast..... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.87 | 758.7 | 54.0 | 12.2 | ..... | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 30.17 | 766.3 | 30.25 | 768.3 | 60.0 | 15.6 | ..... | NE | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | Sgt. Fred. Travis, A. H. |
| Nairn | 29.37 | 746.0 | 29.47 | 748.5 | 50 | 10.0 | ..... | NW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded.. | W. D. Penny. [O. |
| Nassau, (Bahamas) | ..... | ..... | 30.30 | 769.6 | 66.8 | 19.3 | ..... | E | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | C. S. Duncombe. |
| Nottingham, Observatory | 29.62 | 752.3 | 29.81 | 757.2 | 56.2 | 13.4 | ..... | W | ..... | ..... | 7 | ..... | 7k;d | ..... | WNW | 0 | 0 | D. clouds..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.38 | 746.2 | 29.90 | 759.4 | 51.8 | 11.0 | ..... | W | ..... | ..... | 7 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling.... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.87 | 758.7 | 55 | 12.8 | ..... | W | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | Mr. Lucas |
| Plymouth | 30.18 | 766.6 | 30.26 | 768.6 | 53.3 | 11.8 | ..... | W | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Squally..... | John Merrifield. |
| Roche's Point | 30.19 | 766.8 | 30.24 | 768.1 | 55 | 12.8 | ..... | NW | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded.. | W. Kennedy. |
| Saint Ann's Head | 29.99 | 761.7 | 30.16 | 766.1 | 50 | 10.0 | ..... | W | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 29.44 | 747.8 | 40.4 | 4.7 | ..... | N | 33 | 14.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Showery..... | Rev. C. Clouston, L.L. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 30.15 | 765.8 | 44.0 | 6.7 | ..... | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling.... | Sergt. W. H. Lyne. |
| Sheffield | 29.53 | 750.0 | 29.81 | 757.2 | 52.7 | 11.5 | ..... | W | ..... | ..... | 8 | ..... | 9 | ..... | ..... | 0.01 | 0.3 | Showery..... | W. F. Cooper. |
| Silloth Rectory | 29.66 | 753.4 | 29.70 | 754.4 | 50.6 | 10.3 | 76 | W | ..... | ..... | 7 | ..... | 4 | ..... | ..... | 0.050 | 1.27 | D. clouds.... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.40 | 746.7 | 29.80 | 756.9 | 47.5 | 8.6 | ..... | W | ..... | ..... | 6 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | Rev. S. J. Perry. |
| Stonorway, Lews C., (Hebr.) | ..... | ..... | 29.45 | 748.0 | 49 | 9.4 | ..... | WNW | ..... | ..... | 7 | ..... | 5 | ..... | ..... | ..... | ..... | Showery..... | John Smith. |
| Stratfield Turgiss | 29.84 | 757.9 | 30.06 | 763.5 | 50.8 | 10.4 | ..... | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Squally..... | Rev. C. H. Griffith, F.M.S. |
| Thurso | ..... | ..... | 29.33 | 745.0 | 46 | 7.8 | ..... | NW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 30.27 | 768.8 | 54 | 12.2 | ..... | W | ..... | ..... | 7 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 30.36 | 771.1 | 52.2 | 11.2 | ..... | W | 34 | 15.2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.14 | 765.5 | 68.0 | 20.0 | 82 | SE | ..... | ..... | 2 | ..... | 5k | ..... | ..... | 0 | 0 | ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.76 | 755.9 | 29.95 | 760.7 | 82.7 | 28.2 | 67 | ESE | 8.0 | 3.6 | ..... | ..... | 10 | ..... | ESE | 0 | 0 | Cloudy..... | C. Meldrum. |
| Melbourne, Observatory | 30.02 | 762.5 | 30.11 | 764.8 | 66.2 | 19.0 | 80 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0.02 | 0.5 | Dull..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |

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

| Marine Series. Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Algeria, N. 41° 26′ W. 64° 55′ | ..... | ..... | 30.47 | 773.9 | 37.0 | 28 | ..... | NW | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 5* | SW | D. clouds..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. Cato. |
| Barque Maroon, N. 16° 40′, W. 61° 8′ | ..... | ..... | 30.12 | 765.0 | 74 | 23.3 | ..... | E | ..... | ..... | 5 | ..... | 9 | ..... | ..... | 4 | E | Showery..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. C. Prehn. [R. |
| S. S. Peruvian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Alex. Simpson |
| Yorkshire, N. 40° 50′ W. 37° 50′ | ..... | ..... | 30.51 | 774.9 | 63 | 17.2 | ..... | SSE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 3 | SSE | Showery... | |

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.




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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Upper. 0—10. | Clouds. Amount. Lower. 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | OBSERVER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.25 | 666.7 | ..... | ..... | 65.3 | 18.5 | 78 | NE | ..... | ..... | 3 | p | ..... | ..... | ..... | 0 | 0 | ..... | Federico Maison. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.19 | 741.4 | 29.24 | 742.6 | 43.3 | 6.3 | 93 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | ..... |
| Fanöe | 29.26 | 743.1 | 29.28 | 743.6 | 44.2 | 6.8 | 94 | W | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.75 | 755.7 | 29.80 | 756.8 | 18.3 | — 7.6 | 83 | WSW | ..... | ..... | 6 | ..... | 9 | ..... | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | 29.79 | 756.7 | 29.84 | 757.8 | 21.7 | — 5.7 | 96 | SE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Faröe) | 29.54 | 750.3 | 29.58 | 751.2 | 31.5 | — 0.3 | 83 | NE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 28.97 | 735.8 | 29.14 | 740.1 | 43.2 | 6.2 | 99 | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.85 | 758.2 | 30.40 | 772.2 | 51.8 | 11 | 82 | W | ..... | ..... | 4 | ..... | 8 | ..... | W | 0.020 | 0.5 | Very cloudy | Collignon, Director. |
| Amiens, Normal School | 30.02 | 762.6 | 30.13 | 765.4 | 52.5 | 11.4 | 80 | W | ..... | ..... | 6 | ..... | 8 | ..... | W | 0 | 0 | Very cloudy | Bonvarne, Director. |
| Avignon, Normal School | 30.26 | 768.4 | 30.33 | 770.4 | 60.4 | 15.8 | 27 | N | ..... | ..... | 8 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Mr. Giraud, Director |
| Bar-sur-Seine | 29.74 | 755.3 | 30.32 | 770.2 | 44.8 | 7.1 | 93 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | C. Saillard. |
| Beaumette Obs'y (Angers) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Albert Cheux. |
| Beauvais | ..... | ..... | ..... | ..... | 52.5 | 11.4 | 70 | W | ..... | ..... | 6 | ..... | 10 | ..... | W | 0.30 | 0.75 | Covered | Normal School. |
| Besançon | 29.48 | 748.8 | 30.40 | 772.2 | 46.4 | 8 | 89 | SW | ..... | ..... | 3 | ..... | 8 | ..... | SW | 0.04 | 1. | Very cloudy | Normal School. |
| Bourg-en-Bresse | 29.57 | 751.1 | 30.50 | 774.6 | 48.0 | 8.9 | 58 | W | ..... | ..... | 2 | ..... | 10n | ..... | ..... | 0 | 0 | Covered | Normal School. |
| Bourges, Normal School | 29.82 | 757.5 | 30.39 | 771.9 | 47.5 | 8.6 | 94 | NE | ..... | ..... | 4 | ..... | 10 | ..... | SSW | 0 | 0 | Covered | A. Wagner, Director. |
| Brest, Naval Observatory | 30.17 | 766.4 | 30.39 | 772.0 | 53.4 | 11.9 | 73 | W | ..... | ..... | 5 | ..... | 9 | ..... | W | 0.020 | 0.50 | Misty | The Staff. |
| Carcassonne, Normal School | 30.16 | 766.1 | 30.58 | 776.8 | 56.1 | 13.4 | 69 | W | ..... | ..... | 4 | ..... | 2 | ..... | W | 0 | 0 | Slightly cl'dy | Vateau, Director. |
| Caen | 30.21 | 767.2 | 30.28 | 769.1 | 53.2 | 11.8 | 79 | W | ..... | ..... | 2 | ..... | 5 | ..... | W | 0 | 0 | Cloudy | Normal School. |
| Chartres, Normal School | 29.73 | 755.2 | 30.31 | 769.9 | 51.1 | 10.6 | 81 | W | ..... | ..... | 4 | ..... | 9 | ..... | W | 0 | 0 | ..... | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.90 | 759.4 | 30.23 | 767.7 | 47.7 | 8.7 | 92 | SW | ..... | ..... | 3 | ..... | 10n | ..... | NW | 0.016 | 0.4 | Covered | L. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 29.08 | 738.7 | 30.47 | 773.9 | 52.0 | 11.1 | 59 | N | ..... | ..... | 3 | ..... | 10 | ..... | NW | 0 | 0 | Covered | Alluard, Director. |
| Commercy, Normal School | 29.88 | 746.2 | 30.29 | 769.3 | 42.4 | 5.8 | 86 | SW | ..... | ..... | 6 | ..... | 10 | ..... | SW | 0 | 0 | Covered | Dr. Goulet, Director. |
| Commune de Gréasque* | 29.12 | 739.7 | 30.26 | 768.7 | 58.5 | 14.7 | 34 | NW | ..... | ..... | 4 | ..... | 2 | ..... | NW | 0 | 0 | ¼ Covered | M. Kina. |
| Grenoble | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| La Roche-sur-Yon, N. School | 30.36 | 771.1 | 30.58 | 776.7 | 52.9 | 11.6 | 80 | S | ..... | ..... | 4 | ..... | 5 | ..... | S | 0.039 | 1.0 | Cloudy | Mouillot, Director. |
| Le Mans, Normal School | 30.10 | 764.4 | 30.41 | 772.4 | 51.8 | 11 | 71 | W | ..... | ..... | 4 | ..... | 8 | ..... | W | 0 | 0 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.47 | 748.6 | 30.42 | 772.6 | 47.1 | 8.4 | 75 | S | ..... | ..... | 2 | ..... | 10 | ..... | N | 0.059 | 1.50 | Covered | Voudez, Director. |
| Lorient, Naval Observatory | 30.41 | 772.4 | 30.50 | 774.8 | 53.6 | 12.0 | 74 | W | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0.031 | 0.8 | Covered | T. Carré, Director. |
| Mâcon, Normal School | 29.91 | 762.1 | 30.32 | 770.1 | 47.3 | 8.5 | 86 | SW | ..... | ..... | 2 | ..... | 10 | ..... | NNW | 0 | 0 | Covered | M. Marchal, Director. |
| Metz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. A. Schuster, Dir. |
| Mirecourt | 29.21 | 741.9 | 30.29 | 769.4 | 41.4 | 5.2 | 97 | SW | ..... | ..... | 8 | ..... | 10 | ..... | NE | 0 | 0 | Covered | Normal School. |
| Nismes, Normal School | 30.16 | 766.0 | 30.36 | 771.2 | 64.0 | 17.8 | 49 | N | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Boyer, Director. |
| Orleans, Normal School | 30.21 | 767.2 | 30.40 | 772.2 | 59.7 | 10.4 | 80 | SW | ..... | ..... | ..... | ..... | 5 | ..... | SW | 0.20 | 5. | Cloudy | Bernard, Director. |
| Paris, Observatory | 30.01 | 762.3 | 30.26 | 768.5 | 52.2 | 11.2 | 72 | W | ..... | ..... | 4 | ..... | 10 | ..... | W | 0 | 0 | Covered | National Observatory. |
| Privas | 29.45 | 748.0 | 30.53 | 775.5 | 56.1 | 13.4 | 43 | N | ..... | ..... | 6 | ..... | 2 | ..... | N | 0 | 0 | Slightly cl'dy | Normal School |
| Puy de Dome (Summit) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.54 | 775.8 | 30.58 | 776.6 | 52.7 | 11.5 | 90 | WSW | ..... | ..... | 3 | ..... | 10 | ..... | WSW | ..... | ..... | Raining | Lt. Decante, Director. |
| Rouen, Normal School | 30.15 | 765.7 | 30.23 | 767.9 | 51.8 | 11.0 | 80 | W | ..... | ..... | 8 | ..... | 10 | ..... | W | 0.063 | 1.6 | Covered | F. Lucard, Director. |
| Saint Malo (Port) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. H. Hercouet. |
| Tarbes, Normal School | 29.51 | 749.6 | 30.62 | 777.7 | 53.6 | 12 | 54 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | T. Hugues, Director. |
| Villefranche | 29.72 | 754.8 | 30.48 | 774.1 | 49.5 | 9.7 | 90 | NW | ..... | ..... | 1 | ..... | 5 | ..... | Calm | 0 | 0 | Cloudy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.84 | 758.0 | 29.87 | 758.7 | 75.2 | 24 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.04 | 1. | ..... | L'Abbé Marchést. |
| Lyons | ..... | ..... | 30.50 | 774.8 | 50.4 | 10.2 | ..... | ..... | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Covered | M. Jeys. |
| Marseilles, Observatory | ..... | ..... | 30.21 | 767.3 | 61.5 | 16.4 | 48 | NW | ..... | ..... | 4–6 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Mont-Louis | 25.21 | 640.3 | 30.52 | 775.3 | 46.9 | 8.3 | 35 | WNW | 11.2 | 5.00 | ..... | ..... | 2 | ..... | NW | 0 | 0 | ..... | Mr. Falguère. |
| Nice | 30.08 | 764.1 | 30.16 | 766.1 | 61.2 | 16.2 | 69 | S | ..... | ..... | 4 | ..... | 1 | ..... | W | 0 | 0 | Clear | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.97 | 761.1 | 30.24 | 768.1 | 51.8 | 11.0 | 75 | W | ..... | ..... | 4 | ..... | 10 | ..... | WSW | Inap. | Inap. | ..... | Marié Davy, Director. |
| Perpignan | ..... | ..... | 30.43 | 772.8 | 61.2 | 16.2 | 42 | NW | 28.0 | 12.50 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.84 | 580.2 | ..... | ..... | 35.6 | 2.0 | ..... | NNE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Clear | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 30.10 | 764.4 | 30.26 | 768.6 | 51.8 | 11.0 | 75 | WSW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.024 | 0.6 | ..... | E. Renou. |
| Toulouse, Observatory | 29.88 | 759.0 | 30.61 | 777.5 | 52.5 | 11.4 | 50 | NW | ..... | ..... | 6 | ..... | 3 | ..... | ..... | 0.049 | 1.25 | ..... | The Staff. |
| Tours | 30.21 | 767.4 | 30.41 | 772.4 | 52.0 | 11.6 | 85 | WNW | ..... | ..... | 3 | ..... | 10 | ..... | WNW | 0.016 | 0.4 | ..... | C. Marquet. |
| Versailles, (near Paris) | ..... | ..... | 30.24 | 768.0 | 51.8 | 11.0 | 75 | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.004 | 0.10 | Covered | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.28 | 769.1 | 30.30 | 769.7 | 39.2 | 4.0 | 93 | W | 5.6 | 2.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Marc Dechevrens, S. J. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | 0.180 | 4.72 | Raining | Prof. Dr. Hoh. |
| Berlin | 29.66 | 753.4 | 29.84 | 757.9 | 42.1 | 5.6 | 87 | SW | | | 7 | | 10 | | | Blank | Blank | | Prof. Arndt. |
| Breslau | 29.35 | 745.4 | 29.87 | 758.8 | 46.6 | 8.1 | 48 | SW | | | 7 | | 10 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.71 | 754.5 | 30.14 | 765.6 | 47.8 | 8.8 | 58 | SW | | | 8 | | 10 | | | 0 | 0 | | Albert Senz. |
| Cassel | 29.26 | 743.2 | 29.86 | 758.5 | 43.3 | 6.3 | 91 | SW | | | 4 | | 10 | W | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.70 | 754.4 | 29.86 | 758.5 | 48.9 | 9.4 | 93 | W | | | 6 | | 10 | | | 0.08 | 2. | Raining | Director Lose. |
| Emden | 29.60 | 751.8 | 29.63 | 752.7 | 49.3 | 9.6 | 87 | W | | | 7 | | 10 | | | 0.256 | 6.5 | | Prof. Prestel. |
| Frankfort on the Main | 29.72 | 754.8 | 30.09 | 764.3 | 43.2 | 6.2 | 79 | SSW | | | 5 | | 10 | | | Inap. | Inap. | | Physical Society. |
| Friedrichshafen | 28.80 | 731.4 | 30.25 | 768.4 | 49.6 | 9.8 | 60 | W | | | 8 | | 8 | WNW | | 0.220 | 5.6 | | M. Wilhelm. |
| Hamburg | 29.46 | 748.3 | 29.53 | 750.1 | 46.9 | 8.3 | 99 | WSW | | | 7 | | 10 | | | 0.244 | 6.2 | Squally | Captain F. Hegemann. |
| Kiel | 29.39 | 746.6 | 29.41 | 747.0 | 46.2 | 7.9 | 93 | WSW | | | 8 | | 10 | | | 0.392 | 9.95 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.46 | 748.3 | 29.54 | 750.3 | 38.8 | 3.8 | 89 | SW | | | | | | | | 0.149 | 3.79 | Cloudy | Prof. E. Luther. |
| Köslin | | | 29.50 | 749.2 | 38.3 | 3.5 | | SW | | | 6 | | 4 | | | 0.465 | 11.8 | | H. Müller. |
| Leipsic, Observatory | 29.46 | 748.3 | 29.89 | 759.3 | 40.1 | 4.5 | 96 | SW | | | 5 | | 10 | WSW | | | | Raining | Prof. Bruhns. |
| Memel, Naval School | 29.43 | 747.6 | 29.48 | 748.8 | 37.2 | 2.9 | 93 | SW | | | 6 | | 10ks | | | | | | Reinbrech von Skalweit. |
| Neufahrwasser | 29.53 | 750.1 | 29.55 | 750.5 | 41.5 | 5.3 | 85 | SW | | | 4 | | 10 | | | 0.110 | 2.8 | Raining | A. Lothes. |
| Posen | 29.50 | 749.3 | 29.80 | 756.9 | 41.4 | 5.2 | 84 | W | | | 8 | | 10 | | | 0.315 | 8.01 | Covered | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.69 | 754.1 | 30.25 | 768.4 | 48.4 | 9.1 | 60 | SW | | | 5 | | 10 | SW | | | | Raining | Dr. Schur. |
| Stuttgart | 29.20 | 741.7 | 30.15 | 765.9 | 49.1 | 9.5 | 53 | W | | | 6 | | 10 | | | 0.276 | 7.0 | | Prof. Schoder. |
| Treves, (Trier) | 29.47 | 748.5 | 29.99 | 761.8 | 44.2 | 6.8 | 89 | WSW | | | 8 | | 10 | | | 0.346 | 8.80 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.58 | 726.0 | 30.11 | 764.9 | 46.4 | 8.0 | 51 | W | 13 | 6 | | | 10 | | WNW | 0 | 0 | Squally | Dr. Von Bebber. |
| Wustrow, Naval School | 29.52 | 749.8 | 29.56 | 750.8 | 43.0 | 6.1 | 92 | SW | | | 6 | | 10 | | | 0.119 | 3.01 | Raining | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.80 | 757.0 | 30.20 | 767.1 | 50.4 | 10.2 | | NE | | | 3.0 | | | | | | | Clear | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

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

## INDIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.93 | 760.3 | 29.98 | 761.6 | 77.6 | 25.3 | 62 | WSW | 30.0? | 13.4? | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.60 | 749.2 | 29.97 | 761.3 | 85.9 | 29.9 | 22 | W | | | | | 1 | WNW | | 0 | 0 | D. clouds | |
| Bombay | 29.94 | 760.6 | 29.98 | 761.5 | 79.1 | 26.2 | 66 | NNW | 10.0 | 4.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.84 | 707.2 | 29.82 | 757.4 | 86.1 | 30.1 | 33 | NW | | | | | 4 | W | | 0 | 0 | D. clouds | |
| Lahore | 29.25 | 742.8 | 30.00 | 762.0 | 75.0 | 23.9 | 35 | NW | 3.4 | 1.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.43 | 696.8 | 29.94 | 760.4 | 84.9 | 29.4 | 37 | W | 5.0 | 2.2 | | | 3 | W | | 0 | 0 | Misty | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Boorkee | 29.02 | 737.1 | 29.94 | 760.3 | 72.8 | 22.7 | 43 | Calm | 1.2 | 0.5 | | | | | | 0 | 0 | | |
| Agra | 29.37 | 746.1 | 29.94 | 760.4 | 83.7 | 28.7 | 23 | W | | | | | | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.87 | 733.3 | 29.90 | 759.4 | 88.5 | 31.4 | 18 | Calm | 3.4 | 1.5 | | | | | | 0 | 0 | Blue sky | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.56 | 750.8 | 29.93 | 760.3 | 80.3 | 26.8 | 42 | WNW | 3.5 | 1.6 | | | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.62 | 752.2 | 29.93 | 760.2 | 78.3 | 25.7 | 34 | Calm | | | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.74 | 755.3 | 29.92 | 760.0 | 80.1 | 26.7 | 26 | W | 1.2 | 0.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.91 | 708.9 | 29.94 | 760.4 | 76.0 | 24.4 | 15 | NW | 7.3 | 3.3 | | | 0 | | | 0 | 0 | Misty | |
| Cuttack | 29.83 | 757.7 | 29.91 | 759.8 | 87.0 | 30.6 | 52 | SSW | 2.2 | 1.0 | | | 2 | | | 0 | 0 | Misty | |
| Calcutta (Alipore) | 29.92 | 759.9 | 29.94 | 760.5 | 78.1 | 25.6 | 46 | W | 3.0 | 1.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.55 | 750.5 | 29.94 | 760.6 | 74.4 | 23.6 | 45 | Calm | 2.7 | 1.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.89 | 759.2 | 29.99 | 761.6 | 75.8 | 24.3 | 82 | WSW | 4.4 | 2.0 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.66 | 753.4 | 30.01 | 762.3 | 64.9 | 18.3 | 78 | ENE | 2.3 | 1.0 | | | 10 | W | W | 0 | 0 | Overcast | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.61 | 726.7 | 29.98 | 761.4 | 82.5 | 28.1 | 21 | NE | 2.0 | 0.9 | | | | | | 0 | 0 | Blue sky | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.70 | 754.4 | 30.11 | 764.9 | 60.1 | 15.6 | 43 | SW | 1.8 | 0.8 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 30.00 | 762.1 | 30.11 | 764.9 | 58.3 | 14.6 | 40 | SSW | 3.1 | 1.4 | ..... | ..... | 6 | N | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.91 | 759.8 | 30.11 | 764.7 | 62.8 | 17.1 | 34 | SW | 5.6 | 2.5 | ..... | ..... | 4 | W | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.81 | 731.7 | 30.13 | 765.2 | 59.4 | 15.2 | 39 | SW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | Prof. Trionfini Carlo. |
| Milan | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.25 | 742.9 | 30.15 | 765.8 | 60.1 | 15.6 | 53 | SSE | 2.5 | 1.1 | ..... | ..... | 7 | NE | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 28.24 | 717.2 | 30.13 | 765.2 | 60.1 | 15.6 | 33 | NW | ..... | ..... | 2 | ..... | 5 | NW | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.96 | 761 0 | 30.19 | 766.7 | 58.1 | 14.5 | 69 | SW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 30.00 | 761.9 | 30.17 | 766.3 | 58.8 | 14.9 | 62 | SE | 4.9 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.85 | 758.3 | 30.17 | 766.4 | 62.6 | 17.0 | 34 | NW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.91 | 759.6 | 30.17 | 766.2 | 57.2 | 14.0 | 62 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 30.09 | 764.2 | 30.17 | 766.4 | 56.7 | 13.7 | 76 | NE | 4.9 | 2.2 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 30.11 | 764.7 | 30.16 | 766.0 | 51.3 | 10.7 | 76 | E | 26.2 | 11.7 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.58 | 725.9 | 30.13 | 765.3 | 58 6 | 14.8 | 45 | SW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 30.05 | 763.3 | 30.17 | 766.2 | 57.2 | 14.0 | 77 | WSW | ..... | ..... | 2 | ..... | 4 | S | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.96 | 760.8 | 30.13 | 765.3 | 59.7 | 15.4 | 65 | S | 9.8 | 4 4 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U | 30.03 | 762.7 | 30.23 | 767 9 | 60.8 | 16.0 | 63 | WSW | ..... | ..... | 6 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 56.3 | 13.5 | 33 | NE | 4.9 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 30.00 | 762.0 | 30.19 | 766.9 | 59.9 | 15.5 | 54 | NW | ..... | ..... | 4 | ..... | 2 | NW | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.33 | 744.9 | 30.22 | 767.6 | 61.9 | 16.6 | 72 | NW | 1.8 | 0.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.97 | 761.1 | 30.22 | 767.6 | 57.6 | 14.2 | 58 | E | 4.3 | 1.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 30.05 | 763.2 | 30.12 | 765.1 | 58.5 | 14.7 | 61 | NE | ..... | ..... | 4 | ..... | 4 | SW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.66 | 753.4 | 30.22 | 767.5 | 58.1 | 14.5 | 72 | S | 0.7 | 0.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 879.6 m., or 1,245.8 ft.; Mondovi, 556 m., or 1,824. ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 29.63 | 752.6 | 29.70 | 754.4 | 48.7 | 9 3 | 80 | S | 6.3 | 2.8 | ..... | ..... | 10s | ..... | ..... | 0.045 | 1.1 | Cloudy..... | The Observatory. |
| Tokei (Yeddo) University | 29.58 | 751 3 | 29.69 | 754.2 | 50.7 | 10.4 | 62 | NW | 7 | 3.1 | ..... | ..... | 8ks | ..... | ..... | 0.82 | 20.8 | Cloudy..... | Prof. P. V. Veeder. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | 25.16 | 639.0 | 29.96 | 761.0 | 64.4 | 18.0 | 44 | N | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Foggy ..... | L. Castillo, A. E. |
| Guadalajara | 25.17 | 639.2 | 30.24 | 767.9 | 48.2 | 9.0 | 63 | Calm | 0 | 0 | ..... | 0 | 1 | ..... | ..... | 0 | 0 | Clear ..... | Prof. L. Perez. |
| Guanajuato | 23.78 | 604.2 | 30.04 | 763.2 | 59.2 | 15.1 | 57 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Very clear... | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 61.2 | 16.2 | 63 | NW | 0.9 | 0.4 | ..... | 3cs | 0 | SW | ..... | Inap. | Inap. | Clear..... | Prof. M. Leal. |
| Mexico | 23.18 | 588.8 | 30.35 | 771.0 | 49.1 | 9.5 | 77 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.2 | Slightly hazy | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 55.4 | 13.0 | 48 | E | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear... | M. Y. de Leon, M. E. |
| Puebla | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 30.07 | 763.8 | 30.08 | 764.1 | 63.5 | 17.5 | 82 | S | 0.9 | 0.4 | ..... | 3ck | 7k | SW | NE | 0 | 0 | Covered..... | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 30.08 | 764.1 | 30.11 | 764.8 | 68.9 | 20.5 | 81 | Calm | 0 | 0 | ..... | 2c | 4sk | ..... | ..... | 0 | 0 | ½cloudy..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 50.9 | 10.5 | 64 | SW | 1.8 | 0.8 | ..... | 4k | 0 | SW | ..... | 0 | 0 | Clear ..... | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.37 | 593.5 | 30.13 | 765.3 | 46.4 | 8.0 | 44 | NNE | 4.5 | 2.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | P. Spina. [M. M. D. D. |
| Morelia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Tena, F. L. Param. |

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,771 m., or 5,829 ft.; Mexico, 2,284.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known The data are published as given.

## NETHERLANDS' SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.93 | 760.3 | 29.93 | 760.3 | 48.2 | 9.0 | ..... | W | ..... | ..... | 6 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 29.60 | 751.8 | 29.65 | 753.2 | 48.7 | 9.3 | ..... | W | ..... | ..... | 6 | ..... | ..... | ..... | ..... | 0.189 | 4.8 | ..... | |
| Helder | 29.70 | 754.3 | 29.70 | 754.3 | 48.0 | 8.9 | ..... | SW | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0.102 | 2.6 | ..... | |
| Hellevoetsluis | 29.87 | 758.6 | 29.87 | 758.6 | 48.6 | 9.2 | 86 | WSW | ..... | ..... | 6 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.80 | 756.9 | 29.85 | 758.1 | 49.5 | 9.7 | 84 | WSW | ..... | ..... | 6 | ..... | 8 | ..... | ..... | 0.106 | 2.7 | Very cloudy | H. v d Brink. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; tor Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

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

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 28.94 | 735.1 | 29.00 | 736.5 | 40.6 | 4.8 | 81 | NNW | 12.1 | 5.4 | ..... | ..... | 9 | ..... | ..... | 0.118 | 3.0 | ..... | |
| Bröno | 28.77 | 730.8 | 28.81 | 731.8 | 32.9 | 0.5 | 87 | W | 18 | 8 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 28.86 | 733.1 | 29.01 | 736.8 | 39.7 | 4.3 | 76 | SSW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | 0.016 | 0.4 | Light rain.... | |
| Tromsö | 28.61 | 726.7 | 28.65 | 727.8 | 33.1 | 0.6 | 89 | SW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | 0.110 | 2.8 | ..... | |

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

## PORTUGUESE SERIES.

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

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.57 | 776.4 | 30.76 | 781.3 | 57.0 | 13.9 | 74 | E | 16.1 | 7.2 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.42 | 747.3 | 30.44 | 773.1 | 65.3 | 18.5 | 36 | NNE | 15.4 | 6.9 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos |
| Funchal, (Madeira) | 30.28 | 769.0 | 30.36 | 771.2 | 68.4 | 20.2 | 62 | NNW | 2.5 | 1.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 30.08 | 763.9 | 30.43 | 773.0 | 64.4 | 18.0 | 40 | NNE | 19.9 | 8.9 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.65 | 778.6 | 30.74 | 780.8 | 60.1 | 15.6 | 59 | ENE | 11.9 | 5.3 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |

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

| Naval Series. Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd't |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello, Mozambique, Mozambique | 29.67 | 753.6 | 29.68 | 753.8 | 85.1 | 29.5 | ..... | E | ..... | ..... | 1 | ..... | 0 | ..... | E | 1 | ..... | Blue sky | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Sado, Bissao, Senegambia | 30.00* | 762.0* | 30.01* | 762.3* | 85.6 | 29.8 | ..... | SSW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 2 | ..... | Blue sky | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.78 | 756.5 | 29.79 | 756.7 | 86.0 | 30.0 | ..... | W | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreira, dos Anuas, Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

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

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.35 | 745.6 | 29.78 | 756.5 | 43.9 | 6.6 | 59 | SW | 25 | 11 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.17 | 740.9 | 29.60 | 751.9 | 35.8 | 2.1 | 93 | SW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Astronomical Obs. |
| Dorpat | 29.08 | 738.6 | 29.33 | 745.0 | 36.1 | 2.3 | 90 | SSW | 7 | 3 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Light rain | Prof. Dr. Welhrauch. |
| St. Petersburg | 29.27 | 743.5 | 29.29 | 743.9 | 35.2 | 1.8 | 85 | WSW | 13 | 6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Light rain | Central Physical Obs. |
| Kuopio | 28.72 | 729.5 | 29.05 | 737.8 | 32.5 | 0.3 | 100 | SW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Ch. Forsten. |
| Kieff | 29.22 | 742.1 | 29.87 | 758.6 | 38.5 | 3.6 | 80 | WNW | 9 | 4 | ..... | ..... | 5k;c;cs | ..... | ..... | ..... | ..... | Light clouds | Physical Cabinet. |
| Nikolaiev | 29.99 | 761.7 | 30.06 | 763.5 | 35.4 | 1.9 | 80 | S | 4 | 2 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.11 | 764.8 | 30.13 | 765.3 | 35.2 | 1.8 | 90 | NNW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.12 | 739.6 | 29.69 | 754.0 | 34.0 | 1 1 | 79 | S | 7 | 3 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.76 | 755.8 | 29.97 | 761.2 | 32.5 | 0.3 | 92 | E | 2 | 1 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Meteorological Obs. |
| Archangel | 28.92 | 734.5 | 28.94 | 735 0 | 30.6 | — 0.8 | 96 | SSW | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.61 | 726.7 | 30.02 | 762.5 | 58.5 | 14.7 | 41 | Calm | 0 | 0 | ..... | ..... | 8ck | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.11 | 764.7 | 30.02 | 762.6 | 43.7 | 6.5 | 67 | NE | 7 | 3 | ..... | ..... | 4cs;ck | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Kasan | 29.53 | 750.1 | 29.82 | 757.3 | 28.4 | — 2.0 | 82 | S | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.97 | 735.8 | 29.98 | 761.4 | 18.9 | — 7.3 | 64 | SW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.91 | 759.7 | 30.11 | 765.6 | 60.8 | 16.0 | 34 | SE | 13 | 6 | ..... | ..... | 4ks | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.76 | 730.5 | 30.50 | 774.7 | 51.4 | 10.8 | 60 | NW | 4 | 2 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 30.00 | 762.1 | 30.58 | 776.7 | 13.1 | —10.5 | 83 | SW | 0 | 0 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.84 | 757.9 | 30.18 | 766.5 | 25.0 | — 3.9 | 86 | SE | 9 | 4 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Krotkowo* | 29.49 | 749.0 | 29.98 | 761.6 | 28.0 | — 2.2 | 84 | SSW | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Peking, (China) | 30.05 | 763.2 | 30.19 | 766.8 | 49.1 | 9.5 | 16 | NW | 22 | 10 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.94 | 709.6 | 30.20 | 767.1 | 4.1 | —15.5 | 61 | N | 2 | 1 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 6.4 | —14.2 | 87 | W | 16 | 7 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47', E. 48° 34'.

## SPANISH SERIES.

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

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 30.24 | 768.2 | 30.35 | 770.9 | 57.2 | 14 | 69 | E | 1.7 | 0.75 | ..... | 3ck | 0 | NW | ..... | 0 | 0 | Light mist | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.61 | 777.4 | 30.66 | 778.8 | 58.3 | 14.6 | 61 | NW | 2.0 | 0.89 | ..... | 3 | 0 | NW | ..... | 0.079 | 2.0 | Almost clear | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.55 | 699.8 | ..... | ..... | 48.2 | 9.0 | 76 | NE | 12.2 | 5.47 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 28.21 | 716.4 | 30.43 | 773.0 | 64.6 | 18.1 | 25 | NE | 12.0 | 5.34 | ..... | 1 | 0 | S | ..... | 0 | 0 | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 30.30 | 769.6 | 30.45 | 773.4 | 67.1 | 19.5 | 55 | NE | 1.4 | 0.61 | ..... | 3 | 5 | W | ..... | 0 | 0 | Cloudy | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.66 | 753.3 | 30.57 | 776.4 | 58.6 | 14.8 | 48 | NE | 25.5 | 11.39 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 30.20 | 767.0 | 30.27 | 768.7 | 66.4 | 19.1 | 71 | E | 7.6 | 3.4 | ..... | 4ck | 0 | E | ..... | 0 | 0 | Fair | Benito Vines, S. J. |
| San Fernando, Naval Obs'y | 30.31 | 769.8 | 30.41 | 772.3 | 66.0 | 18.9 | 56 | ENE | 24.6 | 11.0 | ..... | 0 | 1 | ..... | SE | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 30.00 | 762.0 | 30.09 | 764.3 | 78.1 | 25.6 | 81 | SE | 0 | 0 | ..... | 5k | 3kn | SE | SE | 0.108 | 2.75 | Cloudy | Leonardo de Tejeda, Chief of Engineers. |

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

## SWEDISH SERIES.

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

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 28.83 | 732.3 | 28.87 | 733.3 | 28.4 | — 2.0 | ..... | S | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0.236 | 6.0 | ..... | |
| Umea | 28.84 | 732.6 | 28.89 | 733.9 | 36.7 | 2.6 | 72 | SW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 28.84 | 732.5 | 28.89 | 733.8 | 38.5 | 3.6 | 63 | S | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0.020 | 0.5 | ..... | |
| Stockholm | 28.91 | 734 3 | 28.09 | 738.8 | 42.1 | 5.6 | 61 | W | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.059 | 1.5 | ..... | |
| Wisby | 29.21 | 741.8 | 29.26 | 743.3 | 41.0 | 5.0 | 72 | WSW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.004 | 0.1 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.00 | 736.6 | 29.08 | 738.5 | 38.8 | 3.8 | 71 | SW | 13.0 | 5.8 | ..... | ..... | 8 | ..... | ..... | 0.241 | 6.12 | ..... | Dr. Hildebrandsson. |

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

## SWISS SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.95 | 735.3 | 30.37 | 771.5 | 54.1 | 12.3 | 37 | SSW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0 | 0 | Covered | The Observatory. |
| Zurich | 28.63 | 727.1 | 30.28 | 769.0 | 50.5 | 10.3 | 55 | W | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0.055 | 1.4 | Cloudy | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +10.1 mm.; Thermometer, +6.0 cent.; Relative Humidity, —27 per cent.

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

## TURKISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.20 | 767.1 | 42.4 | 5.8 | 73 | N | 12 | 5.5 | ..... | ..... | 10 | ..... | N | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanides. |
| Valona | ..... | ..... | 30.18 | 766.5 | 54.1 | 12.3 | ..... | W | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | A. Bertrand. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.80 | 756.9 | 29.92 | 759.9 | 53.2 | 11.8 | 80 | NW | ..... | ..... | 2 | ..... | 10n | SW | N | 1.05 | 26.7 | Raining | Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.72 | 754.9 | 30.03 | 762.7 | 39 | 3.9 | ..... | Calm | 0 | 0 | ..... | 0 | 5s | ..... | W | 0 | 0 | Fair | W. R. Bigg. |
| *Chatham, N B | ..... | ..... | 30.41 | 772.4 | — 1 | —18.3 | 96 | SW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | G. A. Blair. |
| Charlottetown, P. E. Island | 30.35 | 770.9 | 30.40 | 772.1 | 19 | — 7.2 | 82 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.80 | 756.9 | 29.99 | 761.7 | 36.8 | 2.7 | 56 | E | ..... | ..... | 1 | 7cs | 3s | W | ..... | 0 | 0 | Fair | James Smith, M. A. |
| Dalhousie, N. B | 30.34 | 770.6 | 30.38 | 771.6 | — 3.7 | —19.8 | 96 | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | Clear | H. A. Johnson. |
| Esquimault, B. C | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.31 | 7.9 | ..... | W. H. Bevis. |
| *Father Point, Quebec | 30.16 | 766.1 | 30.23 | 767.8 | 20 | — 6.7 | 80 | S | 17 | 7.6 | ..... | ..... | 10n | ..... | Calm | 0 | 0 | Threatening | J. McWilliams. |
| Fredericton, N. B | 30.40 | 772.1 | 30.48 | 774.2 | 6.2 | —14.3 | 100 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. Harrison. |
| *Fort Garry Manitoba | 28.71 | 729.2 | 29.55 | 750.6 | 30 | — 1.1 | 89 | W | 6 | 2.7 | ..... | 2cs | 2s | W | W | 0 | 0 | Fair | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.82 | 732.0 | 29.95 | 760.7 | 39 | 3.5 | 73 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Grant. |
| *Halifax, N. S | 30.26 | 768.6 | 30.40 | 772.1 | 22 | — 5.6 | 84 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | F. Allison, M. A. |
| Hamilton, Ontario | 29.80 | 751.8 | 29.97 | 761.2 | 44.7 | 7.1 | 63 | SW | ..... | ..... | 1 | 10cs | 0 | ..... | ..... | 0 | 0 | Cloudy | Geo. Dickson, M. A. |
| Heart's Content, N. F | 30.08 | 764.0 | 30.10 | 764.5 | 28 | — 2.2 | 82 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.25 | 6.3 | Overcast | E. Weedon. |
| *Kingston, Ontario | 29.67 | 753.6 | 30.02 | 762.5 | 37 | 2.8 | 77 | S | 6 | 2.7 | ..... | 10cs | 0 | SW | ..... | 0 | 0 | Fair | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.29 | 769.4 | 30.33 | 770.4 | 25 | — 3.9 | ..... | NW | 8 | 3.6 | ..... | 3k | 0 | NW | ..... | 0 | 0 | Fair | C. H. Rigby. |
| *Montreal, Quebec | 29.63 | 757.7 | 30.04 | 763.0 | 35 | 1.7 | 69 | S | 20 | 8.9 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.17 | 740.9 | 29.88 | 758.9 | 38 | 3.3 | 86 | S | 6 | 2.7 | ..... | 2cs | 2ks | SW | SW | 0 | 0 | Fair | Rev. R. Mosley. |
| Peterboro, Ontario | 29.20 | 741.7 | 29.97 | 761.2 | 38.9 | 3.8 | 91 | S | ..... | ..... | ..... | 2c | 6k | ..... | ..... | 0 | 0 | Hazy | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.29 | 744.0 | 30.00 | 762.0 | 41 | 5.0 | 76 | S | 13 | 5.8 | ..... | 10k | 0 | SW | ..... | 0 | 0 | Cloudy | H. Morgan. |
| Port Hastings, N. S | 30.32 | 770.1 | 30.37 | 771.4 | 22.7 | — 5.2 | ..... | NW | 7 | 3.1 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.33 | 745.0 | 30.00 | 762.0 | 36 | 2.2 | 83 | SW | 5 | 2.2 | ..... | 2ck | Haze | SW | ..... | 0 | 0 | Hazy | M. Payne. |
| *Quebec, Quebec | 29.84 | 757.9 | 30.18 | 766.6 | 26 | — 3.3 | 75 | NE | ..... | ..... | 5 | 2c | 8n | NE | NE | 0 | 0 | Fair | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.45 | 748.0 | 29.92 | 760.0 | 35 | 1.7 | 80 | SE | 4 | 1.8 | ..... | ..... | 8s | ..... | W | 0 | 0 | Cloudy | W. H. McIntyre. |
| St. Andrews, N. B | 30.36 | 771.1 | 30.41 | 772.4 | 28 | — 2.2 | 88 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Dr. Gove. |
| St. John, N. B | 30.28 | 769.1 | 30.46 | 773.7 | 18 | — 7.8 | 92 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.15 | 740.4 | 29.87 | 758.7 | 42 | 5.6 | 79 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | K. Stewart. |
| Stayner, Ontario | 29.13 | 739.9 | 29.91 | 759.7 | 43 | 6.1 | 66 | SE | 1 | 0.4 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Fair | R. J. Cole. |
| Stratford, Ontario | 28.63 | 727.2 | 29.94 | 760.5 | 37.0 | 2.8 | 81 | SW | 9 | 4.0 | ..... | 0 | 2s | ..... | ..... | 0 | 0 | Fair | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.29 | 769.4 | 30.32 | 770.1 | 26 | — 3.3 | 64 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | T. C. Hill. |
| *Toronto, Ontario | 29.59 | 751.6 | 29.99 | 761.7 | 38 | 3.3 | 74 | SW | 4 | 1.8 | ..... | 5ck | 5s | SW | SW | 0 | 0 | Cloudy | Magnetic Observatory. |
| Windsor, N. S | 30.32 | 770.1 | 30.42 | 772.7 | 22.5 | — 5.3 | 93 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 33.0 | 0.6 | 100 | NE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.23 | 5.8 | Overcast | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182ft. or 360.3 m.

1878.—March 6.

UNITED STATES SERIES.

By authority of the SECRETARY OF WAR.

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

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | Millimeters. | Reduced to sea-level. Inches. | Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | Velocity. Miles per hour. | Meters per second. | Force. 0–10 | CLOUDS. Amount. Up'er 0–10 | Low'r 0–10 | Direction. Upper. From— | Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.94 | 760.5 | 30.18 | 766.6 | 38 | 3.3 | 63 | S | 12 | 5.4 | ..... | 5cs | 2s | W | Calm | 0 | 0 | Fair | |
| Alpena, Michigan | 29.09 | 738.9 | 29.73 | 755.1 | 38 | 3.3 | 81 | SW | 2 | 0.9 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Atlantic City, New Jersey | 30.32 | 770.1 | 30.34 | 770.6 | 42 | 5.6 | 91 | S | 19 | 8.5 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Augusta, Georgia | 30.26 | 768.6 | 30.45 | 773.4 | 41 | 5.0 | 82 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | S | 0 | 0 | Smoky | |
| Baltimore, Maryland | 30.24 | 768.1 | 30.29 | 769.4 | 40 | 4.4 | 73 | S | 4 | 1.8 | ..... | 2c | Sm'e | Calm | Calm | 0 | 0 | Fair | |
| Barnegat, New Jersey | 30.32 | 770.1 | 30.34 | 770.6 | 42 | 5.6 | 91 | S | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Bismarck, Dakota | 27.86 | 707.6 | 29.71 | 754.6 | 41 | 5.0 | 81 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Boise City, Idaho | 26.97 | 685.0 | 29.85 | 758.2 | 43 | 6.1 | 58 | S | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0.11 | 2.8 | Cloudy | |
| Boston, Massachusetts | 30.16 | 766.1 | 30.33 | 770.4 | 37.5 | 3.1 | 86 | S | 10 | 4.5 | ..... | 8cs | Haze | W | ..... | 0 | 0 | Fair | |
| Brackettville, Texas | 28.86 | 733.0 | 29.87 | 758.7 | 68 | 17.2 | 83 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 28.60 | 726.4 | 29.60 | 751.8 | 33 | 0.6 | 89 | E | 7 | 3.1 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Brownsville, Texas | 29.96 | 761.0 | 30.02 | 762.5 | 70 | 21.1 | 84 | SE | 12 | 5.4 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 29.29 | 744.0 | 29.99 | 761.7 | 46 | 7.8 | 54 | S | 12 | 5.4 | ..... | 5c | 5s | W | W | 0 | 0 | Cloudy | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 46 | 7.8 | 77 | NW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.85 | 758.2 | 30.12 | 765.0 | 30 | 3.9 | 63 | S | 20 | 8.9 | ..... | 10c | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Cairo, Illinois | 29.62 | 754.1 | 30.09 | 764.3 | 54 | 12.2 | 61 | S | 12 | 5.4 | ..... | 8ck | 0 | S | ..... | 0 | 0 | Fair | |
| Camp Grant, Arizona | 25.30 | 642.6 | 30.10 | 764.5 | 45 | 7.2 | 24 | NE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | 26.93 | 684.0 | 30.41 | 772.4 | 36 | 2 2 | 71 | NW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.52 | 699.0 | 30.08 | 764.0 | 34 | 1.1 | 79 | E | 2 | 0.9 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.46 | 773.7 | 30.47 | 773.9 | 47 | 8.3 | 92 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Henry, Virginia | 30.36 | 771.1 | 30.39 | 771.9 | 44 | 6.7 | 76 | S | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | |
| Cape Lookout, N. Carolina | 30.46 | 773.7 | 30.48 | 774.2 | 50 | 10.0 | 86 | W | 4 | 1.8 | ..... | 2c | 0 | W | ..... | 0 | 0 | Clear | |
| Cape May, New Jersey | 30.32 | 770.1 | 30.35 | 770.9 | 45 | 7.2 | 84 | S | 22 | 9.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | |
| Charleston, South Carolina | 30.41 | 772.4 | 30.48 | 774.2 | 50 | 10.0 | 86 | NW | 4 | 1.8 | ..... | 0 | 8ks | ..... | SW | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 23.90 | 607.0 | 29.84 | 757.9 | 27 | — 2.8 | 76 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Cloudy | |
| Chicago, Illinois | 29.13 | 739.9 | 29.82 | 757.4 | 46 | 7.8 | 69 | S | 5 | 2.2 | ..... | 10cs | Sm'e | Calm | ..... | 0 | 0 | Cloudy | |
| Cincinnati Ohio | 29.11 | 747.0 | 30.05 | 763.3 | 50 | 10.0 | 58 | S | 3 | 1.3 | ..... | 10c | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Cleveland, Ohio | 29.30 | 744.2 | 30.02 | 762.5 | 49 | 9.4 | 64 | S | 18 | 8.0 | ..... | 5ck | 2s | SW | Calm | 0 | 0 | Fair | |
| Concho, Texas | 28.02 | 711.7 | 29.67 | 753.6 | 64 | 17.8 | 78 | SW | 8 | 3.6 | ..... | 8k | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Corsicana, Texas | 29.58 | 751.3 | 30.04 | 763.0 | 63 | 17.2 | 83 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Davenport, Iowa | 29.10 | 739.1 | 29.74 | 755.4 | 40 | 4.4 | 82 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Deadwood, Dakota | 25.21 | 640.3 | ..... | ..... | 29 | — 1.7 | 67 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denison, Texas | 29.19 | 741.4 | 29.98 | 761.5 | 61 | 16.1 | 85 | S | 16 | 7.2 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Denver, Colorado | 24.64 | 625.8 | 29.86 | 758.4 | 38 | 3.3 | 31 | S | 8 | 3.6 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Detroit, Michigan | 29.25 | 742.9 | 29.92 | 760.0 | 45 | 7.2 | 92 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dodge City, Kansas | 27.31 | 693.7 | 29.63 | 752.6 | 39 | 3.9 | 79 | N | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 29.11 | 739.4 | 29.82 | 757.4 | 35 | 1.7 | 70 | SW | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Duluth, Minnesota | 28.99 | 736.3 | 29.67 | 753.6 | 37 | 2.8 | 71 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eagle Pass, Texas | 29.12 | 739.6 | 29.85 | 758.2 | 63 | 17.2 | 89 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Hazy | |
| Eastport, Maine | 30.34 | 770.6 | 30.41 | 772.4 | 30 | — 1.1 | 62 | SE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.25 | 743.7 | 30.00 | 762.0 | 50 | 10.0 | 45 | S | 15 | 6.7 | ..... | 10cs | Haze | SW | ..... | 0 | 0 | Cloudy | |
| Escanaba, Michigan | 29.11 | 739.4 | 29.78 | 756.4 | 34 | 1.1 | 79 | S | 6 | 2.7 | ..... | 5c | 0 | S | ..... | 0 | 0 | Fair | |
| Florence, Arizona | 28.44 | 722.4 | 30.04 | 763.0 | 45 | 7.2 | 61 | W | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | 24.17 | 613.9 | 30.17 | 766.3 | 40 | 4.4 | 32 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.60 | 650.2 | ..... | ..... | 34 | 1.1 | 62 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.36 | 745.7 | 29.88 | 758.9 | 62 | 16.7 | 72 | S | 14 | 6.3 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Fort Griffin, Texas | 28.67 | 728.2 | 29.93 | 760.2 | 57 | 13.9 | 68 | S | 3 | 1.3 | ..... | 8k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Fort St. Michael, Alaska | 29.24 | 742.7 | 29.28 | 743.7 | 6 | —14.4 | 100 | E | 0.5 | 0.2 | ..... | ..... | 10s | ..... | Calm | 0.12 | 3.0 | Cloudy | |
| Fort Sill, Indian Territory | 28.72 | 729.5 | 29.82 | 757.4 | 54 | 12.2 | 67 | SW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Galveston, Texas | 30.08 | 764.0 | 30.12 | 765.0 | 62 | 16.7 | 88 | S | 6 | 2.7 | ..... | 5ck | 0 | S | ..... | 0 | 0 | Fair | |
| Grand Haven, Michigan | 29.20 | 741.7 | 29.85 | 758.2 | 43 | 6.1 | 83 | SW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Indianapolis, Indiana | 29.19 | 741.4 | 29.96 | 761.0 | 54 | 12.2 | 55 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Indianola, Texas | 30.06 | 763.5 | 30.09 | 764.3 | 65 | 18.3 | 84 | SE | 13 | 5.8 | ..... | 5k | 0 | W | ..... | 0 | 0 | Fair | |
| Jacksboro, Texas | 28.82 | 732.0 | 29.94 | 760.5 | 58 | 14.4 | 76 | S | 12 | 5.4 | ..... | 4c | 0 | SW | ..... | 0 | 0 | Fair | |
| Jacksonville, Florida | 30.38 | 771.6 | 30.41 | 772.4 | 47 | 8.3 | 85 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.15 | 740.4 | 29.77 | 756.1 | 46 | 7.8 | 77 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Key West, Florida | 30.26 | 768.6 | 30.29 | 769.4 | 66 | 18.9 | 68 | NE | 9 | 4.0 | ..... | ..... | 8s | ..... | E | 0 | 0 | Cloudy | |
| Kittyhawk, North Carolina | 30.43 | 772.9 | 30.46 | 773.7 | 46 | 7.8 | 92 | SW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Knoxville, Tennessee | 29.31 | 744.5 | 30.37 | 771.4 | 36 | 2.2 | 80 | E | 1 | 0.4 | ..... | 3c | 0 | NW | ..... | 0 | 0 | Fair | |
| La Crosse, Wisconsin | 29.03 | 737.3 | 29.78 | 756.4 | 37 | 2.8 | 81 | S | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 26.18 | 665.0 | 30.33 | 770.4 | 35 | 1.7 | 61 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.56 | 750.8 | 29.90 | 759.4 | 65 | 18.3 | 81 | Calm | 0 | 0 | ..... | 0 | 0 | S | ..... | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 28.92 | 734.6 | 29.77 | 756.1 | 41 | 5.0 | 82 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.76 | 755.9 | 30.11 | 764.8 | 48 | 8.9 | 81 | NE | 6 | 2.7 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.52 | 749.8 | 30.08 | 764.0 | 53 | 11.7 | 54 | S | 12 | 5.4 | ..... | Haze | Sm'e | Calm | Calm | 0 | 0 | Smoky | |
| Lynchburg, Virginia | 29.61 | 752.1 | 30.32 | 770.1 | 37 | 2.8 | 62 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Maricopa Wells, Arizona | ..... | ..... | ..... | ..... | 38 | 3.3 | 54 | S | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.01 | 736.8 | 29.70 | 754.4 | 42 | 5.6 | 68 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Cloudy | |
| Mason, Texas | 28.40 | 721.3 | 30.14 | 765.5 | 61 | 16.1 | 88 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Memphis, Tennessee | 29.82 | 757.4 | 30.15 | 765.8 | 55 | 12.8 | 62 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Milwaukee, Wisconsin | 29.16 | 740.7 | 29.85 | 758.2 | 39 | 3.9 | 91 | W | 7 | 3.1 | ..... | 10as | Haze | ..... | ..... | 0.02 | 0.5 | Cloudy | |
| Mobile, Alabama | 30.26 | 768.6 | 30.30 | 769.6 | 57.5 | 14 2 | 87 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Montgomery, Alabama | 30.13 | 765.3 | 30.38 | 771.6 | 46 | 7.8 | 80 | E | 1 | 0.4 | ..... | 0 | Fg;sm' | ..... | Calm | 0 | 0 | Hazy | |
| Morgantown, West Virginia | 29.10 | 739.1 | 30.17 | 766.3 | 49 | 9.4 | 51 | S | 6 | 2.7 | ..... | 8c | Sm'e | W | ..... | 0 | 0 | Fair | |
| Mt. Washington, N. H. | 23.78 | 604.0 | 30.14 | 765.5 | 18 | — 7.8 | 68 | SW | 48 | 21.5 | ..... | 10cs | 0 | W | ..... | 0 | 0 | Cloudy | |
| Nashville, Tennessee | 29.67 | 753.6 | 30.22 | 767.6 | 50 | 10.0 | 72 | E | 4 | 1.8 | ..... | 5c | 0 | W | ..... | 0 | 0 | Clear | |
| New Haven, Connecticut | 30.22 | 767.6 | 30.35 | 770.9 | 41 | 5.0 | 82 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| New London, Connecticut | 30.31 | 769.9 | 30.36 | 771.1 | 39 | 3.9 | 82 | S | 8 | 3.6 | ..... | 8cs | Haze | W | Calm | 0 | 0 | Fair | |
| New Orleans, Louisiana | 30.17 | 766.3 | 30.23 | 767.8 | 59 | 15.0 | 76 | SE | 4 | 1.8 | ..... | 8k | 2ks | SE | S | 0 | 0 | Cloudy | |
| Newport, Rhode Island | 30.32 | 770.1 | 30.37 | 771.4 | 39 | 3.9 | 82 | S | 10 | 4.5 | ..... | 2cs | 8ks | S | S | 0 | 0 | Threatening | |
| New York, New York | 30.14 | 765.5 | 30.33 | 770.4 | 38 | 3.3 | 80 | SE | 3 | 1.3 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Norfolk, Virginia | 30.35 | 770.9 | 30.41 | 772.4 | 42 | 5.6 | 83 | S | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| North Platte, Nebraska | 26.99 | 685.5 | 29.61 | 752.1 | 33 | 0.6 | 61 | W | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 29.50 | 749.3 | 29.54 | 750.3 | 43 | 6.1 | 83 | S | 5 | 2.2 | ..... | ..... | 10n | ..... | Calm | 0.90 | 22.9 | Light rain | |
| Omaha, Nebraska | 28.64 | 727.4 | 29.70 | 754.4 | 46 | 7.8 | 77 | S | 1 | 0.4 | ..... | 5c | 5s | Calm | Calm | 0 | 0 | Cloudy | |
| Oswego, New York | 29.72 | 754.9 | 30.04 | 763.0 | 46 | 7.8 | 54 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Pembina, Dakota | 28.74 | 730.0 | 29.58 | 751.3 | 32 | 0.0 | 79 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Clear | |
| Philadelphia, Pennsylvania | 30.28 | 769.1 | 30.33 | 770.4 | 39 | 3.9 | 82 | S | 7 | 3.1 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Phœnix, Arizona | 28.95 | 735.3 | 30.82 | 782.8 | 47 | 8.3 | 70 | E | ..... | ..... | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.56 | 446.0 | 29.77 | 756.1 | 3 | —16.1 | 46 | SW | 56 | 25.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Ploche, Nevada | 24.02 | 610.1 | 29.79 | 756.7 | 38 | 3.3 | 54 | S | 10 | 4.5 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| Pittsburg, Pennsylvania | 29.30 | 744.2 | 30.11 | 764.8 | 50 | 10.0 | 39 | SW | 12 | 5.4 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear | |
| Port Huron, Michigan | 29.24 | 742.7 | 29.90 | 759.4 | 43 | 6.1 | 67 | S | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Portland, Maine | 30.25 | 768.3 | 30.31 | 769.9 | 37 | 2.8 | 81 | S | 4 | 1.8 | ..... | 8k | Haze | W | ..... | 0 | 0 | Cloudy | |
| Portland, Oregon | 29.68 | 753.9 | 29.79 | 756.7 | 45 | 7.2 | 84 | S | 12 | 5.4 | ..... | ..... | 8s | ..... | S | 0.90 | 22.9 | Cloudy | |
| Prescott, Arizona | 24.88 | 631.9 | 30.24 | 768.1 | 31 | — 0.6 | 69 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Punta Rassa, Florida | 30.30 | 769.6 | 30.32 | 770.1 | 60 | 15.6 | 66 | NE | 8 | 3.6 | ..... | ..... | 0 | Haze | ..... | 0 | 0 | Clear | |
| Red Bluff, California | 29.64 | 752.8 | 30.00 | 762.0 | 53 | 11.7 | 93 | SE | 23 | 10.3 | ..... | ..... | 10n | ..... | Calm | 0.04 | 1.0 | Light rain | |

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rochester, New York | 29.37 | 746.0 | 29.99 | 761.7 | 47 | 8.3 | 48 | SW | 7 | 3.1 | ..... | 8cs | 0 | W | ..... | 0 | 0 | Fair | |
| Roseburg, Oregon | 29.35 | 745.5 | 29.92 | 760.0 | 43 | 6.1 | 89 | E | 1 | 0.4 | ..... | 1k | 0 | Calm | ..... | 0.69 | 17.5 | Clear | |
| Sacramento, California | 30.04 | 763.0 | 30.13 | 765.3 | 64.5 | 12.5 | 90 | S | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | Inap | Inap. | Light rain | |
| St. Louis, Missouri | 29.34 | 745.2 | 29.90 | 759.4 | 55 | 12.8 | 56 | S | 14 | 6.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| St. Marks, Florida | 30.38 | 771.6 | 30.39 | 771.9 | 39 | 3.9 | 100 | N | 2 | 0.9 | ..... | 0 | Fog | ..... | ..... | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.83 | 732.3 | 29.66 | 753.4 | 37 | 2.8 | 75 | SE | 7 | 3.1 | ..... | 0 | 8s | ..... | SW | 0 | 0 | Cloudy | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.64 | 651.2 | 29.97 | 761.2 | 39 | 3.9 | 55 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| San Antonio, Texas | 29.34 | 745.2 | 29.92 | 760.0 | 64 | 17.8 | 94 | SE | 3 | 1.3 | ..... | ..... | 10ks | ..... | SE | 0 | 0 | Threatening | |
| San Diego, California | 30.01 | 762.2 | 30.16 | 766.1 | 50 | 10.0 | 93 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandusky, Ohio | 29.34 | 745.2 | 30.02 | 762.5 | 46 | 7.8 | 55 | SW | 20 | 8.9 | ..... | 4ck | 0 | SW | ..... | 0 | 0 | Fair | |
| Sandy Hook, New Jersey | 30.30 | 769.6 | 30.32 | 770.1 | 43 | 6.1 | 83 | SW | 16 | 7.2 | ..... | 1c | Haze | SW | ..... | 0 | 0 | Clear | |
| San Francisco, California | 30.07 | 763.8 | 30.13 | 765.3 | 56 | 13.3 | 94 | S | 8 | 3.6 | ..... | ..... | 19n | ..... | Calm | 0.07 | 1.8 | Light rain | |
| Santa Fé, New Mexico | 23.27 | 591.0 | 29.81 | 757.2 | 35 | 1.7 | 53 | N | 6 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 30.35 | 770.9 | 30.44 | 773.2 | 47 | 8.3 | 85 | Calm | 0 | 0 | ..... | 5ck | Fog | S | ..... | 0 | 0 | Fair | |
| Shreveport, Louisiana | 29.91 | 759.7 | 30.13 | 765.3 | 59 | 15.0 | 82 | S | 7 | 3.1 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Smithville, North Carolina | 30.44 | 773.2 | 30.48 | 774.2 | 49 | 9.4 | 93 | NE | 5 | 2.2 | ..... | 5k | Fog | SW | SW | 0 | 0 | Fair | |
| Springfield, Massachusetts | 30.10 | 764.5 | 30.23 | 767.8 | 38 | 3.3 | 81 | S | 3 | 1.3 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Stockton, Texas | 27.02 | 686.3 | 30.02 | 762.5 | 48 | 8.9 | 28 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 30.27 | 768.8 | 30.33 | 770.4 | 38 | 3.3 | 81 | S | 16 | 7.2 | ..... | 2cs | 8s | S | S | 0 | 0 | Fair | |
| Toledo, Ohio | 29.26 | 743.2 | 29.94 | 760.5 | 48 | 8.9 | 56 | SW | 12 | 5.4 | ..... | 2cs | Haze | Calm | Calm | 0 | 0 | Fair | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 45 | 7.2 | 75 | W | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tybee Island, Georgia | 30.40 | 772.1 | 30.44 | 773.2 | 53 | 11.7 | 79 | E | 2 | 0.9 | ..... | 5k | 0 | S | ..... | 0 | 0 | Fair | |
| Umatilla, Oregon | 29.60 | 749.3 | ..... | ..... | 40 | 4.4 | 82 | W | 8 | 3.6 | ..... | 0 | 8ks | ..... | W | 0.05 | 1.3 | Cloudy | |
| Vicksburg, Mississippi | 29.99 | 761.7 | 30.25 | 768.3 | 55 | 12.8 | 81 | SE | 7 | 3.1 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Virginia City, Montana | 24.05 | 610.9 | 29.58 | 750.0 | 26 | — 3.9 | 62 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Clear | |
| Visalia, California | 29.83 | 757.7 | 30.22 | 767.6 | 45 | 7.2 | 92 | NE | 1 | 0.4 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Washington, D. C. | 30.19 | 766.8 | 30.31 | 769.9 | 41 | 5.0 | 74 | S | 7 | 3.1 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Smoky | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 57 | 2.8 | 63 | NW | ..... | ..... | ..... | 0 | 2ks | ..... | Calm | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 30.39 | 771.9 | 30.47 | 773.9 | 42 | 5.6 | 83 | Calm | 0 | 0 | ..... | 2k | Fog | SW | Calm | 0 | 0 | Fair | |
| Winnemucca, Nevada | 25.53 | 648.4 | 29.89 | 759.2 | 45 | 7.2 | 81 | SW | 20 | 8.9 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Wood's Holl, Mass | 30.34 | 770.6 | 30.40 | 772.1 | 39 | 3.9 | 81 | S | 16 | 7.2 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Fair | |
| Yankton, Dakota | 28.39 | 721.1 | 29.66 | 753.4 | 47 | 8.3 | 62 | SW | 13 | 5.8 | ..... | 1cs | 0 | SW | ..... | 0 | 0 | Clear | |
| Yuma, Arizona | 29.99 | 761.7 | 30.16 | 766.1 | 55 | 12.8 | 57 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 29.52 | 749.8 | 29.58 | 751.3 | — 7.5 | —21.9 | 100 | NE | 4 | 1.8 | ..... | ..... | 10n | ..... | NE | 0.17 | 4.3 | Snowing | J. Fortescue, W. Wood |
| Havana, Cuba, W. I. | 30.21 | 767.3 | 30.23 | 767.8 | 68 | 20.0 | 68 | SE | 1.2 | 0.5 | ..... | 8k | 0 | SE | ..... | 0 | 0 | Cloudy | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.16 | 765.8 | 30.16 | 766.1 | 76 | 23.9 | 90 | Calm | 0 | 0 | ..... | 2c | 2s | NE | Calm | 0 | 0 | ..... | James Gall. |
| Nassau, W. I. | 29.97 | 761.2 | 30.05 | 763.3 | 76 | 24.4 | ..... | NE | 15 | 6.7 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | ..... | ..... | 30.02 | 762.5 | 82 | 27.8 | 83 | N | ..... | ..... | 2 | 5k | 6ks | E | ..... | 0 | 0 | Cloudy | C. J. Hering. |
| Batavia, Dutch Guiana, S. A. | 30.07 | 763.7 | 30.08 | 763.9 | 84.2 | 29 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.20 | 640.1 | ..... | ..... | 67.5 | 19.7 | 76 | Calm | ..... | ..... | 0 | 0 | Haze | ..... | ..... | ..... | ..... | ..... | Thomas Herran |
| Honolulu, Oahu, H. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Daniel Smith. |
| Makawao, Maui, H. I. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. L. Clarke |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medillin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,883 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Florence, 1,550 (?) ft., or 472.5 (?) or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Medellin, 4,876 ft., or m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Pike's Peak, 14,160.7 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,916.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,160.7 ft., or 4,318.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,862.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,546 (?) ft., or 776.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.6 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.56 in.; Salt Lake City, 4.83 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | BAROMETER. As read off. Inches. | BAROMETER. As read off. Millimeters | BAROMETER. Attached Thermometer. Fahrenheit. | BAROMETER. Attached Thermometer. Centigrade. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er. C—10. | CLOUDS. Amount. Low'r. 0—10. | CLOUDS. Direction. Up'er. From— | CLOUDS. Direction. Low'r. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | SEA-SWELL. Character. | SEA-SWELL. Direction from— | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.10 | 764.5 | 54 | 12.2 | 53 | 11.7 | 100 | SSW | 10 | 4.5 | ..... | ..... | 10n | ..... | S | 0.007 | 0.18 | ..... | ..... | Rain-squall.. | |
| Navy Yard, Pensacola, Fla. | 30.38 | 771.6 | 60 | 15.6 | 60 | 15.6 | 88 | SE | 4 | 1.8 | ..... | ..... | 8 | ..... | S | 0 | 0 | ..... | ..... | Cloudy..... | |
| Navy Yard, Portsmouth, N.H. | 30.32 | 770.1 | 67 | 19.4 | 35 | 1.7 | 80 | SW | 4 | 1.8 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Naval Hospital, Yokohama, Japan..... | 29.66* | 753.4* | 55 | 12.8 | 52.5 | 11.4 | 67 | Calm | ..... | ..... | 0 | ..... | 10s | ..... | S | 1.04 | 26.4 | ..... | ..... | Threatening | |
| Adams. Panama..... | 29.95 | 760.7 | 81 | 27.2 | 81 | 27.2 | 78 | NNW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | |
| Alliance, Vourla, Turkey..... | 30.12‡ | 765.0‡ | ..... | ..... | 47 | 8.3 | 77 | NNE | ..... | ..... | 6-7 | ..... | 5 | ..... | N | ..... | ..... | ..... | ..... | Squally..... | |
| Ashuelot. Shanghai, China ..... | 30.30* | 769.6* | 50 | 10.0 | 42 | 5.6 | 83 | W | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | D. clouds..... | |
| Canonicus, New Orleans, La..... | 30.17 | 766.3 | 45 | 7.2 | 56 | 13.3 | 87 | SSE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | ..... | ..... | Pleasant..... | |
| Colorado. New York, N. Y..... | 30.30‡ | 769.6‡ | ..... | ..... | 39 | 3.9 | 91 | S | 5 | 2.2 | ..... | ..... | 2 | ..... | S | 0 | 0 | ..... | ..... | Hazy..... | |
| Constitution, N. 39° 41′ W. 66° 58′..... | 30.51‡ | 774.9‡ | ..... | ..... | 40 | 4.4 | 73 | NE | ..... | ..... | 3 | ..... | 1 | ..... | NE | ..... | ..... | Smooth | N | Clear..... | |
| Despatch, Constantinople, Turkey. | 30.32 | 770.1 | 77 | 25.0 | 44 | 6.7 | 76 | NNE | ..... | ..... | 4 | ..... | 8 | ..... | NE | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Enterprise, New Orleans, La..... | 30.25‡ | 768.3‡ | ..... | ..... | 58 | 14.4 | 88 | SSE | ..... | ..... | 0-1 | ..... | 8 | ..... | S | ..... | ..... | ..... | ..... | Cloudy..... | |
| Franklin, Norfolk, Va..... | 30.40‡ | 772.1‡ | ..... | ..... | 45 | 7.2 | 76 | SSW | ..... | ..... | ..... | ..... | 10? | ..... | ..... | 0 | 0 | ..... | ..... | Blue sky..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.09 | 764.3 | 75 | 23.9 | 74 | 23.3 | 72 | NNE | ..... | ..... | 2 | ..... | 2 | ..... | NNE | ..... | ..... | Mod'ate Ground | NW | Clear..... | |
| Marion, Piraeus, Greece..... | 30.20 | 767.1 | 53 | 11.7 | 52 | 11.1 | 47 | NW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | Mod'ate | Mod'ate | ..... | ..... | Clear..... | |
| Michigan, Erie, Pa..... ..... | 29.49 | 749.0 | 60 | 15.6 | 49 | 9.4 | 44 | SW | ..... | ..... | 4 | ..... | 10 | ..... | SW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monongahela. Manila, Phillipine Islands. | 30.10* | 764.5* | 83 | 28.3 | 83 | 28.3 | 87 | S&E | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | Smooth | ..... | D. clouds..... | |
| New Hampshire, Port Royal, S. C..... | 30.62 | 777.7 | 52 | 11.1 | 50 | 10.0 | 93 | NE | 5 | 2.2 | ..... | ..... | 8 | ..... | NE | 0 | 0 | ..... | ..... | Cloudy..... | |
| Omaha, S. 21° 00′, W. 30° 31′..... | 30.18* | 766.6* | 82.5 | 28.1 | 81.5 | 27.5 | 63 | NE | 4 | 1.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Pleasant..... | |
| Onward, Callao, Peru..... | 30.01† | 762.2† | ..... | ..... | 72 | 22.2 | 90 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, N. 21° 51′, W. 86° 46′..... | 30.26‡ | 768.6‡ | ..... | ..... | 72 | 22.2 | 71 | E | ..... | ..... | 5 | ..... | 8 | ..... | ENE | ..... | ..... | Long | ENE | Cloudy..... | |
| Palos, Shanghai, China..... | 30.40* | 772.1* | 70 | 21.1 | 40 | 4.4 | 91 | WSW | ..... | ..... | 2 | ..... | 2 | ..... | NW | ..... | ..... | ..... | ..... | Clear. ..... | |
| Pensacola, Honolulu, H. I..... | 30.24 | 768.1 | 74 | 23.3 | 70 | 21.1 | 90 | Calm | 0 | 0 | ..... | ..... | 2 | ..... | NE | 0 | 0 | ..... | ..... | Clear..... | |
| Plymouth. Norfolk, Va..... | 30.34‡ | 770.6‡ | ..... | ..... | 46 | 7.8 | 69 | SSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Powhatan, N. 15° 05′ 00″, W. 67° 50′ 15″. | 30.06‡ | 763.5‡ | ..... | ..... | 80 | 26.7 | 96 | E | 12.0 | 5.4 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Mod'ate | ..... | Clear ..... | |
| Ranger. Takankow, Formosa, China. | 30.21* | 767.3* | ..... | ..... | 69 | 20.6 | 85 | NNW | ..... | ..... | 3 | ..... | 4 | ..... | NNW | ..... | ..... | Mod'ate | S | Cloudy..... | |
| Rio Bravo, Brownsville, Texas..... | ..... | ..... | ..... | ..... | 67 | 19.4 | 95 | ESE | ..... | ..... | 3 | ..... | 2 | ..... | SE | ..... | ..... | ..... | ..... | Clear..... | |
| Santee, Annapolis, Md..... | 30.38* | 771.6* | 68 | 20.0 | 43 | 6.1 | 75 | SW | ..... | ..... | 2 | ..... | 1 | ..... | SW | 0 | 0 | ..... | ..... | Hazy..... | |
| Saratoga, Washington, D. C..... | 30.20* | 767.1* | ..... | ..... | 47 | 8.3 | 92 | W | ..... | ..... | 2 | ..... | 2 | ..... | Calm | 0 | 0 | ..... | ..... | Clear..... | |
| St. Louis, League Island, Pa ..... | 30.22 | 767.6 | 55 | 12.8 | 39 | 3 9 | 91 | SSW | 4 | 1.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear ..... | |
| Supply, N. 45° 42′ W. 43° 20′..... | 30.30 | 769.6 | 62 | 16.7 | 60 | 15.6 | 94 | SSE | ..... | ..... | 7 | ..... | 10 | ..... | SSE | ..... | ..... | Rough | SSE | Rainy ..... | |
| Swatara, N. 18° 49′ W. 74° 51′..... | 30.25* | 768 3* | ..... | ..... | 76 | 24.4 | 77 | ENE | ..... | ..... | 6 | ..... | 5 | ..... | S&E | ..... | ..... | Rough | N&E | Squally..... | |
| Tennessee, N. 16° 19′, E. 113° 16′..... | 30.09* | 764.3* | 82 | 27.2 | 82 | 27.8 | 75 | E | 1 | 0.4 | ..... | ..... | 3 | ..... | E | 0 | 0 | Slight | E | D. clouds..... | |
| Trenton, Smyrna, Turkey..... ..... | 30.08‡ | 764.0‡ | ..... | ..... | 49 | 9.4 | 71 | N | ..... | ..... | 3 | ..... | 8 | ..... | NE | 0 | 0 | Mod'ate | NE | Squally..... | |
| Tuscarora, N. 30° 59,′ W. 118° 39′..... | 30.30 | 769.6 | 61 | 16.1 | 60 | 15.6 | 82 | WNW | ..... | ..... | 3-4 | ..... | 5 | ..... | WNW | 0 | 0 | Long Rolling | WNW | Fair ..... | |
| Vandalia, Constantinople, Turkey. | 30.13‡ | 765.3‡ | ..... | ..... | 45 | 7.2 | 76 | N | ..... | ..... | 4 | ..... | 10 | ..... | N | ..... | ..... | ..... | ..... | Cloudy..... | |
| Wabash, Boston, Mass..... | 30.35‡ | 770.9‡ | ..... | ..... | 39 | 3.9 | 73 | SW | 12 | 5.4 | ..... | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Clearing..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level: corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

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

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | Character. | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0 10. | From— | From— | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | |
| S. S. City of Panama, Esquimault, B. C. | | | 29.88† | 746.2† | | | | SE | | | 5 | | | | | | | Rainy | Capt. Seabury. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, Yokohama, Japan | | | | | 45 | 7.2 | | NE | | | 4 | | 5 | | E | | | D. clouds | Capt. Maury. |
| S. S. Colima, N. 35° 13′, W. 121° 59′ | | | 30.19† | 766.8† | 59 | 15.0 | 100 | SW | | | 2 | | 9 | | NNE | Mod'ate | W | Foggy | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic, N. 46° 47′, W. 39° 51′ | | | 30.52* | 775.2* | | | | S | | | 6 | | 5 | | SW | Mod'ate | WSW | Clear | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. W. H. Thompson |
| S. S. Celtic, Liverpool | | | 30.17† | 766.3† | 49 | 9.4 | | WSW | | | 6 | | | WSW | | | | Showery | Capt. B. Gleadell. |
| S. S. Germanic, N. 42° 32′, W. 48° 00′ | | | 29.92† | 760.0† | 56 | 13.3 | 46 | SSE | | | 5 | | 10 | | S | Heavy cross | SSW;SE | D. clouds | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. *Aneroid; corrected for elevation; instrumental error not known. †Aneroid.

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

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, Hong-Kong, China | | | 30.19* | 766.8* | | | | Var. | | | 2 | | Heavy | | Var. | | | Variable | Capt. John Metcalf. |
| S. S. Gaelic, N. 31° 00′, W. 175° 45′ | | | 29.92† | 760.0† | 60 | 15.6 | ?? | W | | | 6 | | k | | W | High | W | Raining | Capt. W. H. Kidley |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

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

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 42° 54′, W. 54° 59′ | S80W | | 30.19 | 766.8 | 34.4 | 1.3 | 84 | NNW | | | 6 | | kd | | N | Rough | W;NW | Threatening | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—CONTINUED.

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

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | Character | Direction From— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, Philadelphia, Pa | | | 30.45† | 773.4† | 42 | 5.6 | 74 | SSW | | | 4 | | 5 | | SE | | | Cloudy | Captain Sargent. |
| S. S. Ohio, Liverpool | | | 29.93 | 760.2 | 52 | 11.1 | 86 | WNW | | | 7 | | 10 | | WNW | | | Stormy | Captain Morrison. |
| S. S. Pennsylvania, Liverpool | | | 29.89 | 759.2 | 49 | 9.4 | 100 | WSW | | | 8 | | 10 | | W | | | Stormy | Captain Harris. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. †Aneroid; unreliable, corrected for elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

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

**ALLAN LINE MARINE SERIES.**

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

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

**MARINE SERIES. (Miscellaneous.)**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Providence, R. I. | | | 30.28 | 769.1 | 38 | 3.3 | 90 | S | 8 | 3.6 | | | 10ck | | SW | | | Damp | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.86 | 758 4 | —39 | —39.4 | 87* | Calm | 0 | 0 | | 0 | 6s | | SW | | | Fair | O. T. Sherman. |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Determined by use of hair hygrometer.

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

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

Albert J. Myer

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

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 7, 1878.

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

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.26 | 768.5 | 64.0 | 17.8 | ..... | NE | ..... | ..... | 5 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Dr. Ollive. |
| Nemours | ..... | ..... | 30.31 | 769.8 | 64.0 | 17.8 | 68 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Michel. |
| Algiers | ..... | ..... | 30.23 | 767.9 | 61.5 | 16.4 | 69 | W | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Towillere. |
| La Calle | ..... | ..... | 30.16 | 766.0 | 58.5 | 14.7 | 76 | W | ..... | ..... | 5 | ..... | 7 | ..... | ..... | 0 | 0 | Very cloudy | Boulangeot. |
| Tunis | ..... | ..... | 30.04 | 763.1 | 59.5 | 15.3 | 63 | NW | ..... | ..... | 9 | ..... | 10 | ..... | ..... | 0.008 | 0.2 | Covered | Jacques. |
| Sfax | ..... | ..... | 30.18 | 766.5 | 66.2 | 19.0 | ..... | NE | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Gau. |
| Saida | ..... | ..... | 30.29 | 769.4 | 62.8 | 17.1 | 90 | NNW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Herbin. |
| Tebessa | ..... | ..... | 30.24 | 768.1 | ..... | ..... | ..... | NW | ..... | ..... | 7 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair | Bourgeois. |
| Geriville | ..... | ..... | 30.33 | 770.3 | 59.4 | 15.2 | 87 | NE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Lemaillot. |
| Laghouat | ..... | ..... | 30.32 | 770.2 | 66.9 | 19.4 | 36 | WNW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Guyot. |
| Biskra | ..... | ..... | 30.21 | 767.4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

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

### AUSTRIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.10 | 739.1 | 29.64 | 752.9 | 55.2 | 12.9 | 50 | SW | ..... | ..... | 5 | ..... | 6 | ..... | ..... | 0.024 | 0.6 | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 28.71 | 729.3 | 29.50 | 749.2 | 38.8 | 3.8 | 60 | W | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0.346 | 8.8 | ..... | Dr. Wierzbiski. |
| Eperies | 28.54 | 724.8 | 29.42 | 747.3 | 41.4 | 5.2 | 77 | S | ..... | ..... | 4 | ..... | 10k | ..... | ..... | 0.041 | 1.05 | ..... | Julius Mikolik. |
| Gratz | 28.47 | 723.0 | 29.71 | 754.7 | 51.1 | 10.6 | 56 | NW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0.001 | 0.02 | ..... | Andreas Rospini. |
| Hermannstadt | 28.10 | 713.6 | 29.52 | 749.9 | 45.1 | 7.3 | 67 | WNW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.047 | 1.20 | Raining | Prof. Reissenberg |
| Kremsmünster | 28.47 | 723.2 | 29.85 | 758.1 | 38.8 | 3.8 | 87 | NW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.374 | 9.5 | ..... | Prof. C. Wagner |
| Lemberg | 28.31 | 719.1 | 29.31 | 744.4 | 40.1 | 4.5 | 70 | NW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0.067 | 1.7 | ..... | Dr. T. Stanecki. |
| Pola | 29.59 | 751.5 | 29.70 | 754.3 | 56.8 | 13.8 | 68 | S | ..... | ..... | 1 | ..... | 5cs | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | 28.98 | 736.0 | 29.44 | 747.7 | 48.9 | 9.4 | 82 | W | ..... | ..... | 6 | ..... | 9 | ..... | ..... | 0.130 | 2.3 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.30 | 744.3 | 29.58 | 751.4 | 52.0 | 11.1 | 79 | S | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0.181 | 4.60 | ..... | Karl Stancel. |
| Trieste | 29.63 | 752.5 | 29.73 | 755.1 | 52.2 | 11.2 | 85 | WSW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | Clear | P. Busin. |
| Vienna | 28.95 | 735.4 | 29.08 | 753.8 | 43.5 | 6.4 | 57 | NW | ..... | ..... | 6 | ..... | 2 | ..... | ..... | 0.197 | 5.0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.50 | 724.0 | 30.04 | 763.1 | 43.3 | 6.3 | 73 | WNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.264 | 6.7 | ..... | Prof. M. Passau. |
| Brussels | 29.79 | 756.7 | 30.00 | 761.9 | 47.5 | 8.6 | 77 | W | ..... | ..... | 2 | ..... | 10 | ..... | WNW; W | 0.130 | 3.3 | ..... | Royal Observatory. |
| Furnes | 29.99 | 761.8 | 30.02 | 762.4 | 52.3 | 11.3 | 70 | WSW | ..... | ..... | 7 | ..... | 8 | ..... | ..... | 0.024 | 0.6 | ..... | M. E. de Cae. |
| Maeseyck | 29.85 | 758.1 | 29.97 | 761.3 | 46.9 | 8.3 | 82 | WSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.181 | 4.6 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.47 set. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

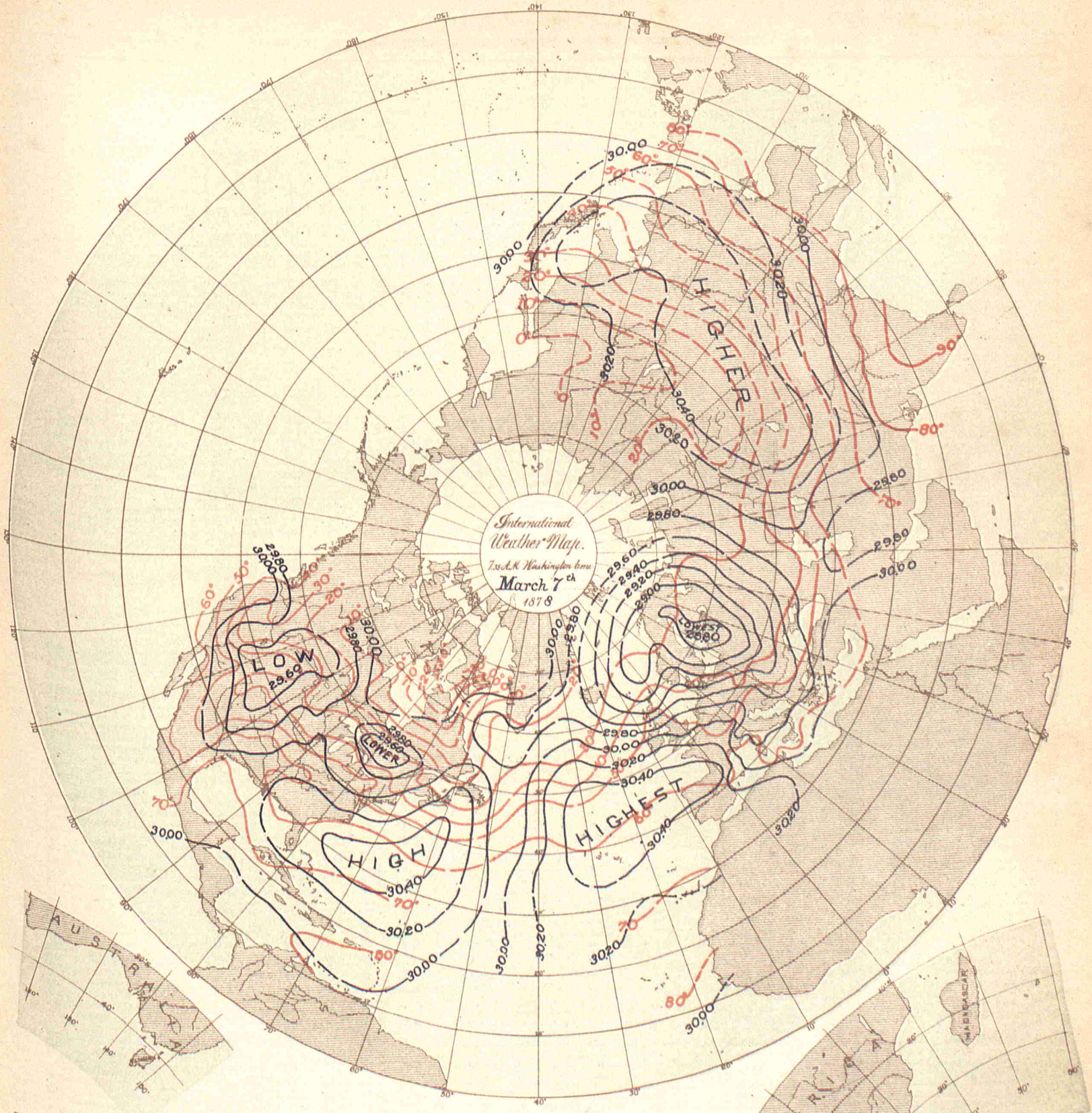
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Upper 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.35 | 745.5 | 29.45 | 748.0 | 52.4 | 11.3 | ..... | W | 40 | 17.9 | ..... | ..... | 5 | ..... | ..... | 0.200 | 5.08 | Blue sky | W. Boswell. |
| Ardrossan | 29.74 | 755.4 | 29.75 | 755.6 | 51 | 10.6 | ..... | WNW | ..... | ..... | 7 | ..... | 8 | ..... | ..... | ..... | ..... | Squally | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.05 | 763.3 | 51.2 | 10.7 | ..... | W | 26 | 11.6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Squally | S. Call, for Dr. Robinson. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.94 | 760.5 | 50.3 | 10.2 | ..... | W | 45 | 20.1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Hartnup. |
| Birr Castle, (Parsonstown) | 29.97 | 761.2 | 30.17 | 766.3 | 53.5 | 11.9 | ..... | W | ..... | ..... | 6 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds | J. Dreyer. |
| Bradford, Yorkshire | 29.45 | 748.0 | 29.85 | 758.2 | 51.1 | 10.6 | ..... | W | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.08 | 2.0 | Overcast | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.97 | 761.2 | 30.00 | 762.0 | 82.5 | 28.1 | ..... | NE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.96 | 761.0 | 54.0 | 12.2 | ..... | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Threatening | H. Todd. [H.C. |
| Cardington | ..... | ..... | 29.96 | 761.0 | 55.0 | 12.8 | ..... | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John McLaren. |
| Chatham, School M. E. | 29.58 | 758.9 | 30.01 | 762.2 | 53.2 | 11.8 | ..... | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.77 | 730.7 | 30.28 | 769.1 | 44.4 | 6.9 | ..... | W | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Alexander Watt. |
| Donaghadee | 29.91 | 759.7 | 29.94 | 760.5 | 52 | 11.1 | ..... | NW | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | J. Mac Gowan. |
| Dover | 29.98 | 761.5 | 30.10 | 764.5 | 54 | 12.2 | ..... | WNW | ..... | ..... | 5 | ..... | 9 | ..... | ..... | ..... | ..... | Squally | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.92 | 760.0 | 51.2 | 10.7 | ..... | W | 16.6 | 7.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Squally | Thomas Mackereth. |
| Falmouth, Observatory | 30.09 | 764.3 | 30.32 | 770.1 | 54.4 | 12.4 | ..... | WNW | ..... | ..... | 5 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | The Staff. |
| Fort Napier, (Natal) | 27.77 | 705.4 | 30.01 | 762.2 | 68.2 | 20.1 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.75 | 755.6 | 29.98 | 761.5 | 87.0 | 30.6 | ..... | W | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's College | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.19 | 766.8 | 30.25 | 768.3 | 64.7 | 18.2 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Corpl. C. Aitken, A.H.C. |
| Glasgow, Observatory | 29.50 | 749.3 | 29.71 | 754.6 | 51.7 | 10.9 | ..... | W | ..... | ..... | 8 | ..... | 10 | ..... | ..... | ..... | ..... | Squally | D. G. Maclean. |
| Great Yarmouth | 29.86 | 758.4 | 29.87 | 758.7 | 48 | 8.9 | ..... | W | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | Drizzling | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.83 | 757.7 | 30.00 | 762.0 | 52.5 | 11.4 | ..... | WSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | The Staff, for G. B. Airy. |
| Guernsey | 30.03 | 762.7 | 30.25 | 768.3 | 52 | 11.1 | ..... | WNW | ..... | ..... | 5 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 30.35 | 770.9 | 55 | 12.8 | ..... | W | ..... | ..... | 6 | ..... | 2c | ..... | ..... | 0 | 0 | Fine | M. P. Moyle. |
| Holyhead | 29.96 | 761.0 | 30.02 | 762.5 | 49 | 9.4 | ..... | W | ..... | ..... | 6 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | John Tilston. |
| Jersey | 29.99 | 761.7 | 30.29 | 769.4 | 51.3 | 10.7 | ..... | WNW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Hazy | J. Fisher. |
| Kew, Observatory | ..... | ..... | 30.02 | 762.5 | 54.1 | 12.3 | ..... | WSW | 14 | 6.3 | ..... | ..... | 10kd | ..... | ..... | ..... | ..... | Overcast | The Staff. |
| Kingstown | 30.04 | 763.0 | 30.07 | 763.8 | 56 | 13.3 | ..... | WNW | ..... | ..... | 7 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.96 | 761.0 | 51.5 | 10.8 | ..... | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.84 | 757.9 | 29.92 | 760.0 | 59.0 | 15.0 | ..... | NW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | Sgt. Fred. Travis, A. H. |
| Nairn | 29.40 | 746.7 | 29.50 | 749.3 | 50 | 10.0 | ..... | W | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 30.20 | 767.1 | 69.0 | 20.6 | ..... | SE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.73 | 755.1 | 29.92 | 760.0 | 52.8 | 11.6 | ..... | WNW | ..... | ..... | 6 | ..... | 10d | ..... | WNW | 0 | 0 | Overcast | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.46 | 748.3 | 29.98 | 761.5 | 52.2 | 11.2 | ..... | W | ..... | ..... | 5-6 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.03 | 762.7 | 56 | 13.3 | ..... | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | Mr. Lucas. |
| Plymouth | 30.18 | 766.6 | 30.25 | 768.3 | 58.8 | 14.9 | ..... | NW | ..... | ..... | 5 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds | John Merrifield. |
| Roche's Point | 30.20 | 767.1 | 30.25 | 768.3 | 54 | 12.2 | ..... | NW | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | ¾ clouded | W. Kennedy. |
| Saint Ann's Head | 30.04 | 763.0 | 30.20 | 767.1 | 50 | 10.0 | ..... | W | ..... | ..... | 5 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | John C. Walker. |
| Sandwick Manse, (Orkneys.) | ..... | ..... | 29.30 | 744.2 | 46 | 7.8 | ..... | W | 44 | 19.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Showery | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.78 | 756.4 | 48.8 | 9.3 | ..... | SW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Sergt. W. H. Lyne. |
| Sheffield | 29.63 | 752.6 | 29.91 | 759.7 | 52.0 | 11.1 | ..... | WNW | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 0.01 | 0.3 | Threatening | W. F. Cooper. |
| Silloth Rectory | 29.79 | 756.7 | 29.82 | 757.4 | 51.4 | 10.8 | 78 | W | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0 | 0 | D. clouds | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.49 | 749.0 | 29.89 | 759.2 | 48.4 | 9.1 | ..... | W | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Rev. S. J. Perry. |
| Stornorway, Lews C. (Hebr.) | ..... | ..... | 29.42 | 747.8 | 47 | 8.3 | ..... | W | ..... | ..... | 8 | ..... | 10 | ..... | ..... | ..... | ..... | Very stormy | John Smith. |
| Stratfield Turgiss | 29.88 | 758.9 | 30.10 | 764.5 | 53.6 | 12.0 | ..... | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Squally | Rev. C. H. Griffith, F.M.S |
| Thurso | ..... | ..... | 29.37 | 746.0 | 47 | 8.3 | ..... | W | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Showery | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 30.28 | 769.1 | 54 | 12.2 | ..... | W | ..... | ..... | 7 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 30.29 | 769.4 | 52.8 | 11.6 | ..... | W | 23 | 10.3 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | The Staff. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.92 | 760.0 | 69.5 | 20.8 | 94 | NW | ..... | ..... | 3 | ..... | 7kn | ..... | ..... | 0 | 0 | ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.71 | 754.6 | 29.89 | 759.2 | 84.8 | 29.3 | 60 | WNW | 7.5 | 3.4 | ..... | 1 | 8 | ..... | NE | 0 | 0 | Cloudy; fine | C. Meldrum. |
| Melbourne, Observatory | 30.09 | 764.3 | 30.18 | 766.6 | 62.0 | 16.7 | 75 | SSW | 14 | 6.3 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Dull | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

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

| MARINE SERIES. VESSELS. | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|
| S. S. Algeria, N. 46° 36′ W. 71° 54′ | Smooth | SW | Hazy | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | Capt. W. R. Cato. |
| Barque Maroon, N. 16° 42′, W. 64° 5′ | 3 | E | D. clouds | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | Capt. C. C. Prehn. [R. |
| S. S. Peruvian | ..... | ..... | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | Capt. Alex. Simpson. |
| Yorkshire, N. 39° 20′ W. 42° 5′ | 4 | SSW | Overcast | |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.




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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.23 | 666.2 | | | 68.9 | 20.5 | 77 | E | | | 2 | | 7ks | | E | 0 | 0 | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.32 | 744.7 | 29.37 | 745.9 | 41.4 | 5.2 | 54 | NW | | | 6 | | 1 | | | | | | |
| Fanöe | 29.55 | 750.5 | 29.57 | 751.0 | 39.9 | 4.4 | 89 | W | | | 6 | | 7 | | | | | | |
| Godthaab, (Greenland) | 29.92 | 760.0 | 29.97 | 761.1 | 19.8 | — 6.8 | 97 | SSE | | | 4 | | 10 | | | | | | Snowing |
| Stykkisholm, (Iceland) | 29.56 | 750.7 | 29.60 | 751.8 | 26.8 | — 2.9 | 100 | W | | | 8 | | 8 | | | | | | Snowing |
| Thorshavn, (Faröe) | 29.10 | 739.2 | 29.14 | 740.1 | 38.8 | 3.8 | 70 | N | | | 4 | | 6 | | | | | | |
| Vestervig | 29.30 | 744.1 | 29.47 | 748.4 | 38.8 | 3.8 | 80 | NW | | | 6 | | 8 | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.77 | 756.1 | 30.32 | 770.1 | 57.2 | 14 | 63 | NW | | | 4 | | 8 | | | 0.020 | 0.5 | Very cloudy | Collignon, Director. |
| Amiens, Normal School | 29.99 | 761.8 | 30.10 | 764.6 | 56.1 | 13.4 | 62 | W | | | 2 | | 5 | | W | 0 | 0 | Cloudy | Bonvarne, Director. |
| Avignon, Normal School | 29.98 | 761.4 | 30.06 | 763.4 | 62.6 | 17 | 34 | NNW | | | 8 | | 2 | | NNW | 0 | 0 | Partly cl'dy | Mr. Giraud, Director |
| Bar-sur-Seine | 29.59 | 751.6 | 30.17 | 766.2 | 50.4 | 10.2 | 62 | NNE | | | 2 | | 8km | | | 0.039 | 1.0 | Very cloudy | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 54.0 | 12.2 | 52 | NW | | | 4 | | 8 | | WNW | 0.020 | 0.50 | Very cloudy | Normal School. |
| Besançon | 29.19 | 741.3 | 30.09 | 764.2 | 48.9 | 9.4 | 84 | W | | | 3 | | 5 | | W | 0.417 | 10.6 | Cloudy | Normal School. |
| Bourg-en-Bresse | 29.37 | 746.1 | 30.30 | 769.6 | 49.1 | 9.5 | 73 | W | | | 2 | | 8km | | W | 0.142 | 3.6 | Very cloudy | Normal School. |
| Bourges, Normal School | 29.71 | 754.5 | 30.26 | 768.7 | 51.8 | 11 | 95 | SW | | | 2 | | 5 | | W | 0.16 | 4. | Cloudy | A. Wagner, Director. |
| Brest, Naval Observatory | 30.11 | 764.8 | 30.33 | 770.4 | 53.1 | 11.7 | 83 | NW | | | 2 | | 10 | | NW | 0.080 | 0.75 | Misty | The Staff. |
| Carcassonne, Normal School | 29.90 | 759.5 | 30.31 | 769.9 | 66.7 | 19.3 | 87 | W | | | 4 | | 0 | | | 0 | 0 | Clear | Vatean, Director. |
| Caen | 30.14 | 765.5 | 30.21 | 767.4 | 55.4 | 13 | 84 | W | | | 2 | | 2 | | W | 0 | 0 | Slightly cl'dy | Normal School. |
| Chartres, Normal School | 29.63 | 752.7 | 30.21 | 767.3 | 54.9 | 12.7 | 83 | NW | | | 4 | | 8 | | NW | 0.059 | 1.5 | | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.71 | 754.5 | 30.03 | 762.7 | 47.7 | 8.7 | 71 | NW | | | 6 | | 5k | | NW | 0.087 | 2.2 | Cloudy | Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.88 | 733.6 | 30.26 | 768.6 | 51.6 | 10.9 | 54 | NW | | | 3 | | 10 | | WNW | 0 | 0 | Covered | Huard, Director. |
| Commercy, Normal School | 29.27 | 743.5 | 30.17 | 766.3 | 46.4 | 8 | 84 | W | | | 6 | | 10 | | W | 0.071 | 1.8 | Covered | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.86 | 733.1 | 30.00 | 762.1 | 58.1 | 14.5 | 68 | NW | | | 8 | | 2 | | NW | 0 | 0 | ¾ covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 30.26 | 768.6 | 30.48 | 774.1 | 54.0 | 12.2 | 81 | N | | | 4 | | 5 | | N | 0 | 0 | Partly cl'dy | Mouillot, Director. |
| Le Mans, Normal School | 29.97 | 761.2 | 30.28 | 769.1 | 52.9 | 11.6 | 69 | NW | | | 4 | | 8 | | NW | 0 | 0 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.25 | 743.0 | 30.17 | 766.4 | 50.4 | 10.2 | 82 | NW | | | 6 | | 10 | | W | 0.165 | 4.20 | Covered | Voudez, Director. |
| Lorient, Naval Observatory | 30.32 | 770.2 | 30.42 | 772.7 | 57.6 | 14.2 | 72 | NW | | | 3 | | 8 | | NW | | | ¾ covered | T. Carré, Director. |
| Mâcon, Normal School | 29.52 | 749.8 | 30.18 | 766.6 | 50.9 | 10.5 | 80 | SW | | | 4 | | 5 | | NW | 0.122 | 3.1 | Cloudy | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | | | | | | | | | | | | | | | | | | | Normal School. |
| Nismes, Normal School | 29.06 | 738.1 | 30.12 | 765.1 | 46.8 | 8.2 | 86 | NW | | | 4 | | 2 | | SE | 0 | 0 | Slightly cov. | Boyer, Director. |
| Orleans, Normal School | 29.93 | 760.1 | 30.13 | 765.2 | 61.9 | 16.6 | 47 | NW | | | 6 | | 2 | | NW | 0 | 0 | Slightly cl'dy | Bernard, Director. |
| Paris, Observatory | 29.79 | 756.7 | 30.18 | 766.5 | 51.8 | 11 | 75 | W | | | | | 5 | | W | 0 | 0 | Cloudy | National Observatory. |
| Privas | 29.93 | 760.2 | 30.17 | 766.4 | 52.9 | 11.6 | 56 | WNW | | | 2 | | 8 | | WNW | 0.005 | 0.12 | Very cloudy | Normal School |
| Puy de Dome (Summit) | 29.17 | 741.0 | 30.24 | 768.2 | 55.4 | 13 | 48 | N | | | 8 | | 2 | | N | 0 | 0 | Slightly cl'dy | Alluard, Director. |
| Rochefort, Naval Obs'y | | | | | | | | | | | | | | | | | | | Lt. Decante, Director. |
| Rouen, Normal School | 30.35 | 771.0 | 30.39 | 771.8 | 57.2 | 14.0 | 78 | WNW | | | 2 | | 5 | | WNW | 0 | 0 | ⅛ covered | F. Lucard, Director. |
| Saint Malo (Port) | 30.08 | 763.9 | 30.16 | 766.1 | 52.5 | 11.4 | 69 | W | | | 3 | | 5 | | W | 0.016 | 0.4 | Cloudy | M. H. Hercouet. |
| Tarbes, Normal School | | | | | | | | | | | | | | | | | | | T. Hugues, Director. |
| Villefranche | 29.39 | 746.5 | 30.50 | 774.8 | 50.0 | 10 | 86 | SW | | | 4 | | 10 | | | 0 | 0 | Covered | Vilot, Director |
| | 29.52 | 749.7 | 30.27 | 768.8 | 50.9 | 10.5 | 81 | NW | | | 2 | | 10 | | N | 0.071 | 1.8 | Covered | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.84 | 758.0 | 29.87 | 758.7 | 75.2 | 24 | | | | | | | | | | 0 | 0 | | L'Abbé Marchési. |
| Lyons | | | 30.30 | 769.6 | 52.0 | 11.1 | | | | | | | 10 | | | 0.059 | 1.5 | Rainy | M. Jeys. |
| Marseilles, Observatory | | | 29.93 | 760.2 | 60.6 | 15.9 | 52 | NW | | | 8–10 | | 6 | | | 0 | 0 | Cloudy | The Staff. |
| Mont-Louis | 25.03 | 635.7 | 30.34 | 770.7 | 46.4 | 8.0 | 45 | NW | 7.4 | 3.33 | | | 3 | | NW | 0 | 0 | | Mr. Falguère. |
| Nice | 29.73 | 755.2 | 29.81 | 757.2 | 61.3 | 16.3 | 69 | SE | | | 6 | | | | NW | 0 | 0 | Fair | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.89 | 759.1 | 30.16 | 766.1 | 53.8 | 12.1 | 69 | W | | | 4 | | 8 | | NW | Inap. | Inap | | Marié Davy, Director. |
| Perpignan | | | 30.15 | 765.8 | 64.0 | 17.8 | 56 | NW | 44.7 | 20.00 | | | 5 | | NW | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.74 | 577.5 | | | 30.7 | — 0.7 | | NW | | | 4 | | 10 | | | 0.118 | 3.0 | Snowy | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 30.00 | 762.0 | 30.17 | 766.4 | 53.4 | 11.9 | 58 | W | | | 2 | | 8 | | NW | 0.035 | 0.9 | | E. Renou. |
| Toulouse, Observatory | 29.67 | 753.7 | 30.41 | 772.3 | 51.4 | 10.8 | 88 | NW | | | 6 | | 10 | | | 0.176 | 4.45 | Raining | The Staff. |
| Tours | 30.08 | 764.1 | 30.28 | 769.1 | 54.3 | 12.4 | 60 | W | | | 3 | | 5 | | WNW | 0.008 | 0.2 | | C. Marquet. |
| Versailles, (near Paris) | | | 30.17 | 766.4 | 53.2 | 11.8 | 57 | NW | | | 2 | | 9 | | | 0.017 | 0.44 | Almost cov'd | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.41 | 772.5 | 30.44 | 773.1 | 46.2 | 7.9 | 82 | ENE | 4.5 | 2.0 | | | 1 | | | 0 | 0 | Clear | Marc Dechevrens, S. J. |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Hoh. |
| Berlin | 29.43 | 747.5 | 29.60 | 751.8 | 44.6 | 7.0 | 66 | NW | ..... | ..... | 8 | ..... | 9 | ..... | ..... | 0.347 | 8.82 | ..... | Prof. Arndt. |
| Breslau | 29.00 | 736.5 | 29.52 | 749.8 | 41.0 | 5.0 | 46 | NW | ..... | ..... | 7 | ..... | 6 | ..... | ..... | 0.117 | 2.96 | ..... | Royal University Obs'y |
| Carlsruhe | 29.55 | 750.5 | 29.98 | 761.4 | 49.6 | 9.8 | 70 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.579 | 14.7 | ..... | Albert Senz. |
| Cassel | 29.24 | 742.7 | 29.84 | 758.0 | 42.3 | 5.7 | 61 | NW | ..... | ..... | 8 | ..... | 5 | W | ..... | 0.589 | 14.95 | ..... | Dr. H. Möhl. |
| Crefeld | 29.76 | 755.9 | 29.92 | 760.0 | 46.4 | 8 0 | 64 | NW | ..... | ..... | 6 | ..... | 9 | ..... | ..... | 0.28 | 7. | ..... | Director Lose. |
| Emden | 29.79 | 756.6 | 29.82 | 757.5 | 43.2 | 6.2 | 100 | NW | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 0.08 | 2. | ..... | Prof. Prestel. |
| Frankfort on the Main | 29.63 | 752.5 | 30.00 | 761.9 | 49.6 | 9.8 | 47 | W | ..... | ..... | 5 | ..... | 8 | ..... | ..... | 0.16 | 4. | ..... | Physical Society. |
| Friedrichshafen | 28.58 | 725.9 | 30.04 | 763.0 | 46 0 | 7.8 | 70 | W | ..... | ..... | 5 | ..... | 10 | NW | ..... | 0.083 | 2.1 | ..... | M. Wilhelm. |
| Hamburg | 29.61 | 752.0 | 29.68 | 753.8 | 41.7 | 5.4 | 60 | WNW | ..... | ..... | 6 | ..... | 8k | ..... | ..... | 0.394 | 10.0 | Squally..... | Captain F. Hegemann. |
| Kiel | 29.58 | 751.2 | 29.59 | 751.6 | 42.1 | 5.6 | 75 | WNW | ..... | ..... | 7 | ..... | 5 | ..... | ..... | 0.192 | 4.87 | ..... | Prof. G. Karsten. |
| Königsberg, (Prussia) | 28.95 | 735.3 | 29.03 | 737.3 | 32.0 | 0.0 | 91 | NW | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.431 | 10.94 | Covered ..... | Prof. E. Luther. |
| Kösiin | ..... | ..... | 29.25 | 743.0 | 39.4 | 4.1 | ..... | NW | ..... | ..... | 7 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | H. Müller. |
| Leipsic, Observatory | 29.35 | 745.5 | 29.78 | 756.4 | 42.8 | 5.8 | 50 | WNW | ..... | ..... | 6 | ..... | 8 | NW | ..... | 0.299 | 7.6 | Storm ..... | Prof. Bruhns. |
| Memel, Naval School | 28.80 | 731.6 | 28.85 | 732.7 | 33.4 | 0.8 | 92 | W | ..... | ..... | 8 | ..... | 10m | ..... | ..... | ..... | ..... | Rain & snow | Reinbrech von Skalweit. |
| Neufahrwasser | 29.13 | 739.9 | 29.15 | 740.3 | 33.1 | 0.6 | 82 | NW | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 0.083 | 2.1 | Snowing..... | A. Lothes. |
| Posen | 29.13 | 739.9 | 29.43 | 747.5 | 41.7 | 5.4 | 51 | NW | ..... | ..... | 9 | ..... | 10 | ..... | ..... | 0 | 0 | Covered..... | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.52 | 749.7 | 30.08 | 764.0 | 44.2 | 6.8 | 87 | NW | ..... | ..... | 3 | ..... | 10 | WNW | ..... | 0.050 | 1.28 | ..... | Dr. Schur. |
| Stuttgart | 29.02 | 737.0 | 29.37 | 761.3 | 45.9 | 7.7 | 73 | W | ..... | ..... | 4 | ..... | 9 | W | ..... | 0.236 | 6.0 | Raining..... | Prof. Schoder. |
| Treves, (Trier) | 29.39 | 746.6 | 29.91 | 759.8 | 48.9 | 9.4 | 59 | SW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0.104 | 2.64 | ..... | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.39 | 721.0 | 29.92 | 759.9 | 42.1 | 5.6 | 62 | NW | 13 | 6 | ..... | ..... | 9k | ..... | NW | 0.161 | 4.1 | Raining..... | Dr. Von Bebber. |
| Wustrow, Naval School | 29.50 | 749.3 | 29.54 | 750.3 | 40.8 | 4.9 | 76 | WNW | ..... | ..... | 7 | ..... | 8 | ..... | ..... | 0.070 | 1.79 | Cloudy..... | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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| ..... | | | | | | | | | | | | | | | | | | | |

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.49 | 749.0 | 29.89 | 759.1 | 55.0 | 12.8 | ..... | SW | ..... | ..... | 1.5 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | Dr. J. F. J. Schmidt. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

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

## INDIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.93 | 760.3 | 29.98 | 761.6 | 78.5 | 25.8 | 52 | W | 20.0? | 8.9? | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | |
| Deesa | 29.48 | 748.6 | 29.95 | 760.6 | 88.7 | 31.5 | 13 | N | ..... | ..... | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | |
| Bombay | 29.89 | 759.2 | 29.93 | 760.1 | 79.3 | 26.3 | 74 | WNW | 13.0 | 5.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | |
| Poona | 27.86 | 707.5 | 29.82 | 757.5 | 68.0 | 31.1 | 31 | WSW | ..... | ..... | ..... | ..... | 3 | S | ..... | 0 | 0 | D. clouds..... | |
| Lahore | 29.33 | 745.1 | 30.09 | 764.4 | 73.8 | 23.2 | 32 | NW | 2.9 | 1.3 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Blue sky..... | |
| Belgaum | 27.39 | 695.7 | 29.90 | 759.4 | 83.8 | 28.8 | 43 | W | 6.0 | 2.7 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | D. clouds..... | |
| Bangalore | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Roorkee | 29.01 | 736.8 | 29.92 | 760.0 | 71.8 | 22.1 | 36 | NW | 3.8 | 1.7 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Agra | 29.36 | 745.7 | 29.92 | 760.0 | 81.7 | 27.6 | 19 | W | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Trichinopoly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nagpur | 28.81 | 731.7 | 29.83 | 757.6 | 90.5 | 32.5 | 24 | W | 4.1 | 1.8 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Blue sky..... | |
| Madras | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Lucknow | 29.52 | 749.9 | 29.90 | 759.4 | 79.3 | 26.3 | 30 | NW | 2.0 | 0.9 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Blue sky..... | |
| Allahabad | 29.56 | 760.9 | 29.88 | 758.8 | 80.7 | 27.1 | 35 | Calm | 0.6 | 0.3 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | D. clouds..... | |
| Patna | 29.70 | 754.3 | 29.88 | 758.9 | 81.7 | 27.6 | 23 | W | 1.0 | 0.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | |
| Hazaribagh | 27.88 | 708.2 | 29.90 | 759.5 | 78.0 | 25.6 | 14 | NNW | 4.9 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | |
| Cuttack | 29.81 | 757.1 | 29.89 | 759.2 | 84.0 | 28.9 | 64 | SSW | 4.3 | 1.9 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | D. clouds..... | |
| Calcutta (Alipore) | 29.90 | 759.5 | 29.92 | 760.1 | 80.2 | 26.8 | 55 | WSW | 4.0 | 1.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | |
| Goalpara | 29.49 | 749.0 | 29.88 | 759.0 | 76.6 | 24.8 | 38 | Calm | 3.3 | 1.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | |
| Chittagong | 29.88 | 759.1 | 29.98 | 761.4 | 76.8 | 24.9 | 79 | SW | 4.5 | 2.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | |
| Sibsagar | 29.63 | 752.6 | 29.98 | 761.4 | 64.5 | 18.1 | 88 | ENE | 3.9 | 1.7 | ..... | ..... | 10 | W | W | 0.04 | 1.0 | Gloomy..... | |
| Rangoon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Jubbulpore | 28.51 | 724.1 | 29.86 | 758.3 | 87.0 | 30.6 | 17 | NW | 3.8 | 1.7 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Blue sky..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

## ITALIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.28 | 743 6 | 29.69 | 754.1 | 58.3 | 14.6 | 53 | S | 2.5 | 1.1 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 29.58 | 751.3 | 29.69 | 754.1 | 55.8 | 13.2 | 58 | N | 2.5 | 1.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.48 | 748.8 | 29.67 | 753.7 | 60.3 | 15.7 | 42 | SE | 2.5 | 1.1 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.44 | 722.4 | 29.76 | 755.9 | 60.8 | 16.0 | 17 | NW | ..... | ..... | 8 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. Schiaparelli. |
| Moncalieri | 28.88 | 733.6 | 29.76 | 755.8 | 70.5 | 21.4 | 29 | NNE | 9.4 | 4.2 | ..... | ..... | 8 | N | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 27.91 | 708.9 | 29.77 | 756.1 | 63.7 | 17.6 | 21 | NNW | ..... | ..... | 4 | ..... | 4 | N | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.61 | 752.2 | 29.84 | 757.9 | 68.1 | 14.5 | 73 | E | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.64 | 752.8 | 29.81 | 757.2 | 58.8 | 14.9 | 66 | SW | 5.6 | 2.5 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.52 | 749.8 | 29.84 | 757.9 | 65.1 | 18.4 | 26 | SW | ..... | ..... | 8 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.51 | 749.6 | 29.77 | 756.2 | 59.9 | 15.5 | 62 | SW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 29.73 | 755.1 | 29.82 | 757.3 | 57.7 | 14.3 | 68 | W | 6.9 | 3.1 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 29.67 | 753.6 | 29.72 | 754.9 | 58.3 | 14.6 | 50 | N | 32.2 | 14.4 | ..... | ..... | 7 | SW | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.10 | 713.9 | 29.73 | 755.1 | 54.5 | 12.5 | 54 | SW | ..... | ..... | 6 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.68 | 753.8 | 29.79 | 756.7 | 61.9 | 16.6 | 63 | WNW | ..... | ..... | 2 | ..... | 6 | S | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.63 | 752.6 | 29.81 | 757.1 | 58.1 | 14.5 | 65 | W | 4.3 | 1.9 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U. | 29.60 | 751.9 | 29.81 | 757.1 | 58.6 | 14.8 | 62 | WNW | ..... | ..... | 4 | ..... | 10 | NW | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 54.9 | 12.7 | 57 | SW | 11.9 | 5.3 | ..... | ..... | 10 | SW | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.67 | 753.6 | 29.86 | 758.5 | 57.9 | 14.4 | 68 | NW | ..... | ..... | 6 | ..... | 10 | NW | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 28.93 | 734.9 | 29.83 | 757.6 | 52.2 | 11.2 | 73 | SE | 1.3 | 0.6 | ..... | ..... | 10 | ..... | ..... | 0.185 | 4.7 | ..... | Prof. F. D. Conti. |
| Palermo | 29.56 | 750.7 | 29.81 | 757.2 | 67.2 | 14.0 | 60 | W | 3.1 | 1.4 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.77 | 756.1 | 29.84 | 758.0 | 60.8 | 16.0 | 59 | WSW | .. .... | ..... | 4 | ..... | 8 | W | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.26 | 743.2 | 29.82 | 757.3 | 55.4 | 13.0 | 68 | NE | 4.9 | 2.2 | ..... | ..... | 9 | E | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
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| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
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| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 370.6 m., or 1,245.2 ft.; Mondovi, 556 m., or 1,824. ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 29.75 | 755.6 | 29.82 | 757.4 | 39.2 | 4.0 | 98 | WSW | 3.3 | 1.5 | ..... | ..... | 0 | ..... | ..... | 0.010 | 0.3 | Clear..... | The Observatory. |
| Tokei (Yeddo) University | 29.71 | 754.6 | 29.81 | 757.2 | 41.7 | 5.4 | 91 | NNE | 3 | 1.3 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy..... | Prof. P. V. Veeder. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | 25.12 | 638.1 | 29.92 | 759.9 | 66.2 | 19.0 | 41 | N | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Foggy ..... | L. Castillo, A. E. |
| Guadalajara | 25.09 | 637.2 | 30.12 | 765.1 | 50.0 | 10.0 | 55 | NW | 0.9 | 0.4 | ..... | 0 | 9 | ..... | NW | 0 | 0 | Very cloudy | Prof. L. Perez. |
| Guanajuato | 23.78 | 602.9 | 29.94 | 760.5 | 60.6 | 15.9 | 50 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Foggy..... | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 58.6 | 14.8 | 45 | NW | 0.9 | 0.4 | ..... | 9cs | 0 | SW | ..... | 0 | 0 | Very cloudy | Prof. M. Leal. |
| Mexico | 23.14 | 587.7 | 30.20 | 767.1 | 55 4 | 13.0 | 53 | Calm | 0 | 0 | ..... | 0 | 1s | ..... | ..... | Inap. | Inap. | Clear ..... | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 50.6 | 10.3 | 41 | Calm | 0 | 0 | ..... | 8ck | 0 | SW | ..... | 0 | 0 | Cloudy ..... | M. V. de Leon, M. E. |
| Puebla | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 30.04 | 763.0 | 30.05 | 763 3 | 68.0 | 20.0 | 78 | Calm | 0 | 0 | ..... | 4c | 6n | ..... | S | 0 | 0 | Covered..... | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 30.03 | 762.7 | 30.06 | 763.4 | 73.4 | 23.0 | 87 | WNW | 5.6 | 2.5 | ..... | 0 | 10n | ..... | ..... | 0 | 0 | Overcast..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 52.7 | 11.5 | 46 | Calm | 0 | 0 | ..... | 0 | 8kn | ..... | ..... | 0 | 0 | Smoky..... | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.96 | 593.3 | 30.12 | 765.1 | 51.6 | 10.9 | 52 | NNE | 2.2 | 1.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Dry mist.... | P. Spina. [M. M. D. D. |
| Morelia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Tena, F. L. Param. |

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,232.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known The data are published as given.

## NETHERLANDS' SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.98 | 761.4 | 29.98 | 761.4 | 49.3 | 9.6 | ..... | W | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.110 | 2.8 | ..... | |
| Groningen | 29.70 | 756.0 | 29.82 | 757.4 | 43.5 | 6.4 | ..... | WNW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.055 | 1.4 | ..... | |
| Helder | 29.83 | 757.7 | 29.83 | 757.7 | 44.4 | 6.9 | ..... | SW | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0.102 | 2.6 | ..... | |
| Hellevoetsluis | 29.93 | 760.1 | 29.93 | 760 1 | 46.6 | 8.1 | 84 | WSW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.88 | 759.0 | 29.93 | 760.2 | 47.3 | 8.5 | 71 | WSW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0.075 | 1.9 | Very cloudy | H. v d Brink. |

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

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

| STATIONS | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.27 | 743.5 | 29.33 | 744.9 | 36.3 | 2.4 | 82 | S | 11.2 | 5.0 | ..... | ..... | 6 | ..... | ..... | 0.047 | 1.2 | Snowing..... | |
| Brône | 29.03 | 737.3 | 29.07 | 738.3 | 28.4 | — 2.0 | 80 | W | 18 | 8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light snow.. | |
| Christiania | 29.07 | 738.4 | 29.22 | 742.1 | 41.2 | 5.1 | 66 | W | 11 | 5 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Tromsô | 28.87 | 733.2 | 28.91 | 734.3 | 21.9 | — 5.6 | 70 | NE | 7 | 3 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |

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

## PORTUGUESE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.34 | 770.5 | 30.53 | 775.4 | 60.1 | 15.6 | 81 | ESE | 9.8 | 4.4 | ..... | ..... | 4 | ..... | ..... | 0.197 | 5.0 | ..... | Dr. J. A. Sampaio |
| Campo Major | 29.34 | 745.3 | 30.35 | 771.0 | 68.9 | 20.5 | 28 | ENE | 4.3 | 1.9 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos |
| Funchal, (Madeira) | 30.24 | 768.2 | 30.33 | 770.4 | 67.6 | 19.8 | 62 | SW | 8.7 | 3.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 30.00 | 762.1 | 30.36 | 771.2 | 66.9 | 19.4 | 32 | NE | 9.8 | 4.4 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.44 | 773.2 | 30.53 | 775.4 | 62.6 | 17.0 | 67 | ENE | 8.1 | 3.6 | ..... | ..... | 4 | ..... | ..... | 0.098 | 0.2 | ..... | |

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

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd't. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd t. |
| Mindello, Mozambique | 29.69 | 754.2 | 29.70 | 754.4 | 86 | 30.0 | ..... | ESE | ..... | ..... | 1 | ..... | 9 | ..... | ESE | 1 | ..... | Thunder-storm.. | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Sado, Bissao, Senegambia | 29.98* | 761.5* | 29.99* | 761.8* | 77.9 | 25.5 | ..... | WSW | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 2 | WSW | Blue sky..... | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.78 | 756.5 | 29.79 | 756.7 | 84.2 | 29.0 | ..... | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky.... | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreira, dos Amas, Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 28.80 | 731.5 | 29.22 | 742.3 | 36.1 | 2.3 | 68 | W | 27 | 12 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing..... | Astronomical Obs. |
| Wilna | 28.45 | 722.7 | 28.87 | 733.4 | 38.7 | 3.7 | 83 | WSW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 28.49 | 723.6 | 28.73 | 729.8 | 35 8 | 2.1 | 100 | ESE | 4 | 2 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 28.80 | 731.5 | 28.82 | 731.9 | 35.6 | 2.0 | 89 | SE | 11 | 5 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing..... | Central Physical Obs. |
| Kuopio | 28.49 | 723.6 | 28.81 | 731.7 | 34.2 | 1.2 | 96 | S | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ch. Forsten. |
| Kieff | 28.62 | 726.9 | 29.26 | 743.2 | 35.8 | 2.1 | 91 | S | 7 | 3 | ..... | ..... | 10n;ks | ..... | ..... | ..... | ..... | Raining..... | Physical Cabinet. |
| Nikolaiev | 29.49 | 749.1 | 29.56 | 750.9 | 42.3 | 5.7 | 86 | SSE | 31 | 14 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.80 | 757.0 | 29.82 | 757.5 | 43.2 | 6.2 | 78 | SSW | 9 | 4 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 28.74 | 730.0 | 29.30 | 744.3 | 33.8 | 1.0 | 87 | S | 13 | 6 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | Snowing..... | Meteorological Obs. |
| Lugan | 29.52 | 749.8 | 29.73 | 755.2 | 34.9 | 1.6 | 82 | SSW | 9 | 4 | ..... | ..... | 9s | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 28.99 | 736 3 | 29.01 | 736.8 | 34.9 | 1.6 | 78 | SE | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.40 | 721.4 | 29.81 | 757.2 | 55.6 | 13.1 | 43 | NW | 4 | 2 | ..... | ..... | 8ks. | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.00 | 761.9 | 29.91 | 759.8 | 35.6 | 2.0 | 85 | WNW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy clouds... | Sebastianof. |
| Kasan | 29.45 | 747.9 | 29.72 | 755.0 | 30.6 | — 0.8 | 87 | S | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.94 | 735.1 | 29.93 | 760.2 | 29.3 | — 1.5 | 68 | SSW | 4 | 2 | ..... | ..... | 8c;ck | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.68 | 753.9 | 29.91 | 759.7 | 67.1 | 19.5 | 38 | ESE | 9 | 4 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.65 | 727.6 | 30.39 | 771.9 | 50.9 | 10.5 | 38 | N | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.94 | 760.5 | 30.52 | 775.1 | 13.8 | —10.1 | 90 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 30.04 | 762.9 | 30.37 | 771.5 | 21.4 | — 5.9 | 85 | SW | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Krotkowo* | 29.31 | 744.5 | 29.80 | 756.8 | 34.9 | 1.6 | 70 | S | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Peking, (China) | 30.25 | 768.3 | 30.39 | 771.9 | 41.4 | 5.2 | 35 | SW | 18 | 8 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.97 | 710.4 | 30.21 | 767.2 | 10.4 | —12.0 | 70 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 2.3 | —16.5 | 90 | W | 20 | 9 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 30.07 | 763.6 | 30.17 | 766.3 | 67.6 | 14.2 | 67 | SE | 1.1 | 0.50 | ..... | 2c | 0 | W | ..... | 0 | 0 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.46 | 773.6 | 30.51 | 775.0 | 58.6 | 14.8 | 78 | NW | 3.8 | 1.72 | ..... | ..... | ..... | ..... | ..... | 0.004 | 0.1 | Covered ..... | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.46 | 697.5 | ..... | ..... | 50.0 | 10.0 | 86 | N | 8.2 | 3.69 | ..... | 0 | 8 | ..... | ..... | 0 | 0 | Cloudy..... | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 28.09 | 713.5 | 30.31 | 769.8 | 64.4 | 18.0 | 42 | N | 20.1 | 9.00 | ..... | 3 | 0 | NE | ..... | 0 | 0 | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 30.09 | 764.3 | 30.24 | 768.0 | 73.6 | 23.1 | 53 | NW | 5.1 | 2.31 | ..... | 0 | 3 | ..... | ..... | 0 | 0 | Almost clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.57 | 751.0 | 30.47 | 773.8 | 60.1 | 15.6 | 65 | NE | 16.8 | 7.50 | ..... | 1 | 0 | NE | ..... | 0 | 0 | Almost clear | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 30.13 | 765.2 | 30.19 | 766.9 | 64.8 | 18.2 | 80 | Calm | 0 | 0 | ..... | 2c | 0 | WNW | ..... | 0 | 0 | Clear ..... | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 30.21 | 767.4 | 30.31 | 769.9 | 66.0 | 18.9 | 71 | NW | 7.0 | 3.1 | ..... | 0 | 8 | ..... | W | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.98 | 761.6 | 30.08 | 763.9 | 75.9 | 24.4 | 87 | NE | 3.0 | 1.33 | ..... | 6kn | 3kn | NE | NE | 0.846 | 21.50 | Cloudy..... | Leonardo de Tejeda, Chief of Engineers. |

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

## SWEDISH SERIES.

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

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. ntigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–12. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 28.79 | 731.3 | 28.83 | 732 3 | 25.2 | — 3.8 | ..... | NW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 28.85 | 732.9 | 28.91 | 734.2 | 31.6 | — 0.2 | 96 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 28.88 | 733.5 | 28.93 | 734 8 | 37.4 | 3.0 | 59 | NW | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 28.80 | 731.6 | 28.98 | 736.0 | 30.9 | — 0.6 | 77 | NNW | ..... | ..... | 6 | ..... | 6 | ..... | ..... | 0.260 | 6.6 | ..... | |
| Wisby | 28.85 | 732.8 | 28.91 | 734 3 | 31.6 | — 0.2 | 81 | NNW | ..... | ..... | 8 | ..... | 7 | ..... | ..... | 0.185 | 4.7 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 28.92 | 734.5 | 28.99 | 736.4 | 31.8 | — 0.1 | 92 | NW | 14.1 | 6.3 | ..... | ..... | 5 | SW | ..... | 0.026 | 0.65 | ..... | Dr. Hildebrandsson. |

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

## SWISS SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.75 | 730.3 | 30.19 | 766.8 | 50.0 | 10.0 | 68 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.114 | 2.9 | Covered..... | The Observatory. |
| Zurich | 28.43 | 722.1 | 30.10 | 764.6 | 43.9 | 6.6 | 81 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.189 | 4.8 | Covered..... | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +5.1 mm.; Thermometer, +3.6 cent.; Relative Humidity, +4 per cent.

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

## TURKISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.84 | 758.0 | 50.9 | 10.5 | 60 | SW | 9 | 4.0 | ..... | ..... | 8 | ..... | SW | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanides. |
| Valona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. Bertrand. |
| Varna | ..... | ..... | 29.84 | 757.9 | 58.1 | 14.5 | ..... | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered.. | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.98 | 761.5 | 30.10 | 764.4 | 57.0 | 13.9 | 71 | SW | ..... | ..... | 3 | ..... | 8n | ..... | SW | 1.23 | 31.2 | Raining | Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.50 | 749.3 | 29.81 | 757.2 | 45 | 7.2 | ..... | SW | 1 | 0.4 | ..... | ..... | 10s | ..... | SW | 0.12 | 3.0 | Cloudy..... | W. R. Bigg. |
| *Chatham, N B | ..... | ..... | 30.08 | 764.0 | 35 | 1.7 | 74 | S | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy..... | G. A. Blair. |
| Charlottetown, P. E. Island | 30.14 | 765.5 | 30.18 | 766.6 | 33 | 0.6 | 96 | S | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.55 | 750.6 | 29.75 | 755.6 | 42.0 | 5.6 | 95 | W | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy..... | James Smith, M. A. |
| Dalhousie, N. B | 29.94 | 760.5 | 29.97 | 761.2 | 28 | — 2.2 | 88 | E | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.15 | 3.8 | Gloomy..... | H. A. Johnson. |
| Esquimault, B. C | 29.72 | 754.9 | 29.76 | 755.9 | 42.6 | 5.9 | 96 | SW | ..... | ..... | ..... | ..... | 10 | ..... | ..... | Inap. | Inap. | Rainy..... | W. H. Bevis. |
| *Father Point, Quebec | 29.90 | 759.4 | 29.96 | 761.0 | 33 | 0.6 | 91 | Calm | 0 | 0 | ..... | Haze | Haze | Calm | Calm | Inap. | Inap. | Hazy..... | J. McWilliams. |
| Fredericton, N. B | 30.02 | 762.5 | 30.09 | 764.3 | 34.5 | 1.6 | 92 | SE | 5 | 2.2 | ..... | ..... | 10n | ..... | ..... | 0.01 | 0.3 | Cloudy..... | Prof. Harrison. |
| *Fort Garry Manitoba | 28.84 | 732.5 | 29.09 | 754.1 | 29 | — 1.7 | 83 | S | 6 | 2.7 | ..... | 0 | 2ks | ..... | ..... | 0 | 0 | Fair..... | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.75 | 730.2 | 29.85 | 758.2 | 46 | 7.8 | 92 | W | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0.40 | 10.2 | Cloudy..... | James Grant. |
| *Halifax, N. S | 30.09 | 764.3 | 30.23 | 767.8 | 34 | 1.1 | 87 | S | 6 | 2.7 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy..... | F. Allison, M. A. |
| Hamilton, Ontario | 29.47 | 748.5 | 29.84 | 757.9 | 48.2 | 9.0 | 85 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | 30.18 | 766.3 | 30.16 | 766.1 | 25 | — 3.9 | 80 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear..... | E. Weedon. |
| *Kingston, Ontario | 29.47 | 748.5 | 29.81 | 757.2 | 41 | 5.0 | 89 | SW | 3 | 1.3 | ..... | ..... | 10ks | ..... | SW | 0.11 | 2.8 | Cloudy..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.21 | 767.3 | 30.25 | 768.3 | 31 | — 0.6 | ..... | W | 6 | 2.7 | ..... | 8k | 0 | W | ..... | 0 | 0 | Cloudy..... | C. H. Rigby. |
| *Montreal, Quebec | 29.59 | 751.6 | 29.80 | 756.9 | 40 | 4.4 | 93 | S | 17 | 7.6 | ..... | ..... | 10n | ..... | ..... | 0.15 | 3.8 | Cloudy..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.66 | 738.1 | 29.76 | 755.9 | 37 | 2.8 | 100 | W | 3 | 1.3 | ..... | ..... | 10n | ..... | SW | 0.34 | 8.6 | Light rain... | Rev. R. Mosley. |
| Peterboro, Ontario | 29.02 | 737.1 | 29.78 | 756.4 | 44.7 | 7.1 | 91 | SW | ..... | ..... | ..... | ..... | 10k | ..... | ..... | 0.17 | 4.3 | Cloudy..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.18 | 741.2 | 29.87 | 758.7 | 46 | 7.8 | 94 | SW | 7 | 3.1 | ..... | 10cs | 0 | SW | ..... | 0.18 | 4.6 | Fair..... | H. Morgan. |
| Port Hastings, N. S | 30.13 | 765.3 | 30.18 | 766.6 | 32.6 | 0.3 | ..... | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine..... | Peter Grant. |
| Port Stanley, Ontario | 29.24 | 742.7 | 29.90 | 759.4 | 39 | 3.9 | 97 | SW | 10 | 4.5 | ..... | 5c | Fog | SW | SW | 0.25 | 6.3 | Foggy..... | M. Payne. |
| *Quebec, Quebec | 29.58 | 751.3 | 29.91 | 759.7 | 33 | 0.6 | 100 | E | ..... | ..... | 5 | ..... | 10n | ..... | E | 0.05 | 1.3 | Light rain.. | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.09 | 738.9 | 29.56 | 750.8 | 36 | 2.2 | 100 | W | 2 | 0.9 | ..... | ..... | 10n | ..... | ..... | 0.37 | 9.4 | Light rain... | W. H. McIntyre. |
| St. Andrews, N. B | 30.01 | 762.2 | 30.06 | 763.5 | 38 | 3.3 | 93 | S | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Foggy..... | Dr. Gove. |
| St. John, N. B | 29.96 | 761.0 | 30.13 | 765.3 | 35 | 1.7 | 90 | SE | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0.140 | 3.56 | Overcast..... | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.09 | 738.9 | 29.82 | 757.4 | 38 | 3.3 | 95 | NW | 5 | 2.2 | ..... | ..... | 10ks | ..... | ..... | 0.47 | 11.9 | Cloudy..... | K. Stewart. |
| Stayner, Ontario | 29.03 | 737.8 | 29.81 | 757.2 | 43 | 6.1 | 92 | NW | 9 | 4.0 | ..... | ..... | 10n | ..... | W | 0.14 | 3.6 | Threatening | R. J. Cole. |
| Stratford, Ontario | 28.57 | 725.7 | 29.86 | 758.4 | 43.0 | 6.1 | 94 | W | 11 | 4.9 | ..... | 0 | 5n | ..... | ..... | 0.213 | 5.41 | Fair..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.25 | 768.3 | 30.28 | 769.1 | 27 | — 2.8 | 80 | S | 6 | 2.7 | ..... | 8k | 2s | NW | ..... | 0 | 0 | Cloudy..... | T. C. Hill. |
| *Toronto, Ontario | 29.45 | 748.0 | 29.84 | 757.9 | 43 | 6.1 | 92 | SW | 9 | 4.0 | ..... | 2c | 0 | W | ..... | 0.11 | 2.8 | Clear..... | Magnetic Observatory. |
| Windsor, N. S | 30.10 | 764.5 | 30.20 | 767.1 | 35.0 | 1.7 | 100 | SE | 12 | 5.4 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Fair..... | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 27.5 | — 2.5 | ..... | NE | ..... | ..... | ..... | 5k | 10s | ..... | ..... | Inap. | Inap. | Fair..... | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182ft. or 360.3 m.

1878.—March 7.

UNITED STATES SERIES.

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

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Upper. 0—10 | Clouds. Amount. Low'r. 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.69 | 754.1 | 29.92 | 760.0 | 42 | 5.6 | 83 | S | 12 | 5.4 | ..... | 2c | 2ks | SW | SW | 0.09 | 2.3 | Fair | |
| Alpena, Michigan | 29.15 | 740.4 | 29.80 | 756.9 | 40 | 4.4 | 91 | SW | 4 | 1.8 | ..... | 2ck | 5s | NW | W | 0.06 | 1.5 | Fair | |
| Atlantic City, New Jersey | 30.05 | 763.3 | 30.07 | 763.8 | 46 | 7.8 | 85 | S | 6 | 2.7 | ..... | 2k | Haze | Calm | Calm | 0 | 0 | Smoky | |
| Augusta, Georgia | 30.14 | 765.5 | 30.33 | 770.4 | 53 | 11.7 | 86 | S | 1 | 0.4 | ..... | 2cs | Fg;sm' | Calm | Calm | 0 | 0 | Fair | |
| Baltimore, Maryland | 30.01 | 762.2 | 30.06 | 763.5 | 53 | 11.7 | 61 | SW | 5 | 2.2 | ..... | 2k | Sm'e | NW | Calm | 0 | 0 | Clear | |
| Barnegat, New Jersey | 30.02 | 762.5 | 30.01 | 763.0 | 48 | 8.9 | 77 | S | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Bismarck, Dakota | 27.81 | 706.4 | 29.66 | 753.4 | 37 | 2.8 | 63 | SE | 14 | 6.3 | ..... | Haze | 8s;sm' | ..... | SE | Inap. | Inap. | Cloudy | |
| Boise City, Idaho | 27.07 | 687.6 | 29.95 | 760.7 | 31 | — 0.6 | 89 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.39 | 9.9 | Cloudy | |
| Boston, Massachusetts | 29.85 | 758.2 | 30.01 | 762.2 | 45 | 7.2 | 84 | S | 8 | 3.6 | ..... | Haze | Haze | ..... | ..... | 0 | 0 | Hazy | |
| Brackettville, Texas | 28.83 | 732.3 | 29.84 | 757.9 | 64 | 17.8 | 78 | E | 2 | 0.9 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Breckenridge, Minnesota | 28.76 | 730.5 | 29.78 | 756.4 | 29 | — 1.7 | 89 | SE | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0.08 | 2.0 | Clear | |
| Brownsville, Texas | 29.97 | 761.2 | 30.01 | 763.0 | 70 | 21.1 | 84 | SE | 4 | 1.8 | ..... | 2c | 2s | Calm | SE | 0 | 0 | Fair | |
| Buffalo, New York | 29.16 | 740.7 | 29.86 | 758.4 | 40 | 4.4 | 100 | SW | 15 | 6.7 | ..... | ..... | Fog | ..... | SW | 0.15 | 3.8 | Foggy | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 57 | 13.9 | 57 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.61 | 752.1 | 29.87 | 758.7 | 47 | 8.3 | 69 | S | 10 | 4.5 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Cairo, Illinois | 29.71 | 754.6 | 30.10 | 764.5 | 57 | 13.9 | 81 | S | 5 | 2.2 | ..... | 8c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Camp Grant, Arizona | 25.16 | 639.0 | 29.96 | 761.0 | 52 | 11.1 | 12 | N | ..... | ..... | 1 | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Camp Verde, Arizona | 26.63 | 676.4 | 30.12 | 765.0 | 52 | 11.1 | 47 | SE | ..... | ..... | ..... | 5c | 0 | SE | ..... | 0 | 0 | Fair | |
| Campo, California | 27.45 | 697.2 | 30.02 | 762.5 | 47 | 8.3 | 92 | W | 14 | 6.3 | ..... | ..... | 10s | ..... | W | 0.05 | 1.3 | Cloudy | |
| Cape Hatteras, N. Carolina | 30.32 | 770.1 | 30.33 | 770.4 | 55 | 12.8 | 93 | W | 7 | 3.1 | ..... | 5k | 5s | W | W | 0 | 0 | Cloudy | |
| Cape Henry, Virginia | 30.13 | 765.3 | 30.16 | 766.1 | 59 | 15.0 | 65 | SW | 19 | 8.5 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Cape Lookout, N. Carolina | 30.32 | 770.1 | 30.34 | 770.6 | 60 | 15.6 | 82 | W | 4 | 1.8 | ..... | 10k | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Cape May, New Jersey | 30.05 | 763.3 | 30.08 | 764.0 | 52 | 11.1 | 72 | SW | 20 | 8.9 | ..... | 8cs | Haze | W | ..... | 0 | 0 | Fair | |
| Charleston, South Carolina | 30.30 | 769 6 | 30.37 | 771.4 | 58 | 14.4 | 82 | W | 3 | 1.3 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Cheyenne, Wyoming | 23.64 | 600.4 | 29.58 | 751.3 | 36 | 2.2 | 45 | W | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Chicago, Illinois | 29.24 | 742.7 | 29.94 | 760.5 | 43 | 6.1 | 75 | SW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cincinnati Ohio | 29.36 | 745 7 | 30.00 | 762.0 | 59 | 15.0 | 70 | SW | 8 | 3.6 | ..... | 8cs;ck | 0 | W | ..... | 0 | 0 | Fair | |
| Clevelana, Ohio | 29.20 | 741.7 | 29.91 | 759.7 | 53 | 11.7 | 80 | SW | 12 | 5.4 | ..... | 5k | 5s | SW | SW | 0.35 | 8.9 | Cloudy | |
| Concho, Texas | 27.99 | 710.9 | 29.64 | 752.8 | 55 | 12.8 | 79 | S | 2 | 0.9 | ..... | 8k | 0 | S | ..... | 0 | 0 | Cloudy | |
| Corsicana, Texas | 29.52 | 749.8 | 29.98 | 761.5 | 63 | 17.2 | 89 | SE | 7 | 3.1 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Davenport, Iowa | 29.37 | 746.0 | 30.02 | 762.5 | 40 | 4.4 | 73 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | SW | 0 | 0 | Clear | |
| Deadwood, Dakota | 25.00 | 635.0 | ..... | ..... | 44 | 6.7 | 45 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Denison, Texas | 29.17 | 740.9 | 29.96 | 761.0 | 63 | 17.2 | 94 | S | 12 | 5.4 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Threatening | |
| Denver, Colorado | 24.39 | 619.5 | 29.61 | 752.1 | 42 | 5.6 | 34 | S | 5 | 2.2 | ..... | ..... | 8s | ..... | Calm | 0 | 0 | Cloudy | |
| Detroit, Michigan | 29.18 | 741.2 | 29.85 | 758.2 | 47 | 8.3 | 92 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.07 | 1.8 | Clear | |
| Dodge City, Kansas | 27.08 | 687.8 | 29.34 | 745.2 | 43 | 6.1 | 83 | S | 22 | 9.8 | ..... | 5ck | 2s | SW | SW | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.29 | 744.0 | 30.01 | 762.2 | 37 | 2.8 | 71 | W | 2 | 0.9 | ..... | 1c | 5s | SW | W | 0 | 0 | Fair | |
| Duluth, Minnesota | 29.18 | 741.2 | 29.87 | 758.7 | 35 | 1.7 | 80 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | Calm | 0.05 | 1.3 | Fair | |
| Eagle Pass, Texas | 29.22 | 742.2 | 29.93 | 760.2 | 56 | 13.3 | 100 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Foggy | |
| Eastport, Maine | 29.98 | 761.5 | 30.05 | 763.3 | 39 | 3.9 | 86 | S | 11 | 4.9 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| Erie, Pennsylvania | 29.17 | 740.9 | 29.87 | 758.7 | 55 | 12.8 | 81 | SW | 9 | 4.0 | ..... | 10k | Haze | W | W | 0.25 | 6.3 | Cloudy | |
| Escanaba, Michigan | 29.20 | 741.7 | 29.86 | 758.4 | 39 | 3.9 | 73 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Florence, Arizona | 28.29 | 718.6 | 29.89 | 759.2 | 50 | 10.0 | 65 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | 24.06 | 611.1 | 30.08 | 763.5 | 45 | 7.2 | 60 | NW | 8 | 3.6 | ..... | 9c | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Fort Craig, New Mexico | 25.35 | 643.9 | ..... | ..... | 50 | 10.0 | 34 | SE | 15 | 6.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Fort Gibson, Indian Ter | 29.39 | 746.5 | 29.91 | 759.7 | 52 | 16.7 | 83 | S | 12 | 5.4 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Fort Griffin, Texas | 28.63 | 727.2 | 29.89 | 759.2 | 52 | 11.1 | 35 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.56 | 750.8 | 29.89 | 759.2 | 7 | —13.9 | 77 | NE | 5 | 2.2 | ..... | ..... | 10s | ..... | NE | Inap. | Inap. | Cloudy | |
| Fort Sill, Indian Territory | 28.67 | 728.2 | 29.76 | 755.9 | 57 | 13.9 | 87 | S | 14 | 6.3 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Galveston, Texas | 30.03 | 762.7 | 30.07 | 763.8 | 63 | 17.2 | 94 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | S | 0.08 | 2.0 | Cloudy | |
| Grand Haven, Michigan | 29.24 | 742.7 | 29.89 | 759.2 | 43 | 6.1 | 83 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.42 | 10.7 | Clear | |
| Indianapolis, Indiana | 29.24 | 742.7 | 30.02 | 762.5 | 53 | 11.7 | 67 | SW | 2 | 0.9 | ..... | 1ck | 0 | W | ..... | 0.22 | 5.6 | Clear | |
| Indianola, Texas | 30.03 | 762.7 | 30.08 | 763.5 | 67 | 19.4 | 89 | S | 18 | 8.0 | ..... | ..... | 10ks | ..... | S | 0.17 | 4.3 | Cloudy | |
| Jacksboro, Texas | 28.78 | 731.0 | 29.90 | 759.4 | 59 | 15.0 | 71 | S | 12 | 5.4 | ..... | 0 | 4ks | ..... | S | 0 | 0 | Fair | |
| Jacksonville, Florida | 30.30 | 769.6 | 30.33 | 770.4 | 59 | 15.0 | 82 | E | 2 | 0.9 | ..... | 10k | 0 | SE | ..... | 0 | 0 | Cloudy | |
| Keokuk, Iowa | 29.35 | 745.5 | 29.97 | 761.2 | 45 | 7.2 | 68 | Calm | 0 | 0 | ..... | 0 | Haze | ..... | Calm | 0.12 | 3.0 | Clear | |
| Key West, Florida | 30.18 | 766.6 | 30.21 | 767.3 | 68 | 20.0 | 70 | NE | 7 | 3.1 | ..... | 2c | 8s | NW | SE | 0 | 0 | Cloudy | |
| Kittyhawk, North Carolina | 30.24 | 768.1 | 30.26 | 768.6 | 55 | 12.8 | 87 | SW | 17 | 7.6 | ..... | 10cs | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Knoxville, Tennessee | 29.21 | 741.9 | 30.22 | 767.6 | 54 | 12.2 | 87 | SW | 7 | 3.1 | ..... | ..... | 10n | ..... | SW | Inap. | Inap. | Misting | |
| La Crosse, Wisconsin | 29.19 | 741.4 | 29.93 | 760.2 | 43 | 6.1 | 75 | SW | 4 | 1.8 | ..... | ..... | 10s | ..... | NW | 0.03 | 0.8 | Cloudy | |
| La Mesilla, New Mexico | 26.02 | 660.9 | 30.17 | 766.3 | 42 | 5.6 | 63 | Calm | 0 | 0 | ..... | 0 | 8s | ..... | Calm | 0 | 0 | Cloudy | |
| Laredo, Texas | 29.58 | 751.3 | 29.93 | 760.2 | 60 | 15.6 | 94 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Leavenworth, Kansas | 29.05 | 737.9 | 29.91 | 759.7 | 37 | 2.8 | 90 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.71 | 754.6 | 30.01 | 763.0 | 55 | 12.8 | 90 | N | 1 | 0.4 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap | Light rain | |
| Louisville, Kentucky | 29.50 | 749.3 | 30.05 | 763.3 | 59 | 15.0 | 70 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Lynchburg, Virginia | 29.49 | 748.3 | 30.15 | 765.8 | 53 | 11.7 | 60 | SW | 2 | 0.9 | ..... | 0 | 5ks | ..... | Calm | 0 | 0 | Fair | |
| Maricopa Wells, Arizona | ..... | ..... | ..... | ..... | 40 | 4.4 | 39 | N | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.11 | 739.4 | 29.81 | 757.2 | 42 | 5.6 | 66 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mason, Texas | 28.33 | 719.6 | 30.05 | 763.3 | 61 | 16.1 | 82 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Memphis, Tennessee | 29.81 | 757.2 | 30.13 | 765.3 | 60 | 15.6 | 76 | S | 6 | 2.7 | ..... | ..... | 8ks | ..... | SW | 0 | 0 | Cloudy | |
| Milwaukee, Wisconsin | 29.21 | 741.9 | 29.90 | 759.4 | 41 | 5.0 | 82 | NW | 12 | 5.4 | ..... | 0 | Haze | ..... | ..... | 0.05 | 1.3 | Clear | |
| Mobile, Alabama | 30.20 | 767.1 | 30.25 | 768.3 | 59 | 15.0 | 94 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Montgomery, Alabama | 30.04 | 763.0 | 30.28 | 769.1 | 55.6 | 13.1 | 77 | E | 3 | 1.3 | ..... | 10cs | Haze | W | Calm | 0 | 0 | Cloudy | |
| Morgantown, West Virginia | 28.98 | 735.6 | 30.00 | 762.0 | 58 | 14.4 | 64 | SW | 12 | 5.4 | ..... | ..... | 10n | ..... | SW | Inap. | Inap. | Light rain | |
| Mt. Washington, N. H. | 23.63 | 600.2 | 29.99 | 761.7 | 31 | — 0.6 | 100 | NW | 54 | 24.1 | ..... | ..... | Fog | ..... | NW | 0 | 0 | Foggy | |
| Nashville, Tennessee | 29.58 | 751.3 | 30.1 | 764.8 | 60 | 15.6 | 71 | S | 2 | 0.9 | ..... | 10k | 0 | NW | ..... | Inap. | Inap. | Cloudy | |
| New Haven, Connecticut | 29.91 | 759.7 | 30.02 | 762.5 | 44 | 6.7 | 92 | Calm | 0 | 0 | ..... | ..... | Sm'e | ..... | ..... | 0 | 0 | Smoky | |
| New London, Connecticut | 30.00 | 762.0 | 30.05 | 763.3 | 43 | 6.1 | 92 | SE | 4 | 1.8 | ..... | Haze | Fog | Calm | Calm | 0 | 0 | Fair | |
| New Orleans, Louisiana | 30.10 | 764.5 | 30.16 | 766.1 | 61 | 16.1 | 88 | E | 6 | 2.7 | ..... | ..... | 10ks | ..... | NE | Inap. | Inap. | Cloudy | |
| Newport, Rhode Island | 29.98 | 761.5 | 30.03 | 762.7 | 42 | 5.6 | 91 | S | 6 | 2.7 | ..... | 2k | Haze | W | ..... | 0 | 0 | Hazy | |
| New York, New York | 29.84 | 757.9 | 30.02 | 762.5 | 47 | 8.3 | 77 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Norfolk, Virginia | 30.15 | 765.8 | 30.21 | 767.3 | 58 | 14.4 | 70 | SW | 17 | 7.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| North Platte, Nebraska | 26.81 | 681.0 | 29.34 | 745.7 | 39 | 3.9 | 64 | SE | 8 | 3.6 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Olympia, Washington Ter. | 29.88 | 758.9 | 29.92 | 760.0 | 36 | 2.2 | 90 | S | 7 | 3.1 | ..... | ..... | 10n | ..... | Calm | 0.80 | 20.3 | Light rain | |
| Omaha, Nebraska | 28.73 | 729.7 | 29.81 | 757.2 | 40 | 4.4 | 65 | Calm | 0 | 0 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Oswego, New York | 29.52 | 749.8 | 29.84 | 757.9 | 54 | 12.2 | 61 | SW | 12 | 5.4 | ..... | ..... | 10s | ..... | SW | 0.24 | 6.1 | Cloudy | |
| Pembina, Dakota | 28.84 | 732.5 | 29.69 | 754.1 | 29 | — 1.7 | 78 | SE | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Philadelphia, Pennsylvania | 30.01 | 762.2 | 30.06 | 763.5 | 49 | 9.4 | 71 | SW | 9 | 4.0 | ..... | 0 | 8s; fg | ..... | W;Calm | 0 | 0 | Cloudy | |
| Phœnix, Arizona | 28.76 | 730.5 | 30.60 | 777.2 | 47 | 8.3 | 62 | Calm | ..... | ..... | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Pike's Peak, Colorado | 17.34 | 440.4 | 29.55 | 750.6 | 5 | —15.0 | 75 | SW | 60 | 26.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Ploche, Nevada | 23.78 | 604.0 | 29.55 | 750.6 | 24 | — 4.4 | 100 | N | 32 | 14.3 | ..... | ..... | 10n | ..... | N | 0.11 | 2.8 | Heavy snow | |
| Pittsburg, Pennsylvania | 29.14 | 740.1 | 29.93 | 760.2 | 57 | 13.9 | 75 | SW | 7 | 3.1 | ..... | ..... | 10s | ..... | W | 0.02 | 0.5 | Cloudy | |
| Port Huron, Michigan | 29.18 | 741.2 | 29.84 | 757.9 | 46 | 7 8 | 92 | SW | 7 | 3.1 | ..... | 8k | Fog | W | Calm | 0.02 | 0.5 | Cloudy | |
| Portland, Maine | 29.94 | 760.5 | 30.00 | 762.0 | 41 | 5.0 | 91 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Dense fog | |
| Portland, Oregon | 29.96 | 761.0 | 30.07 | 763.8 | 37 | 2.8 | 100 | SE | 8 | 3.6 | ..... | ..... | 8s | ..... | S | 0.87 | 22.1 | Cloudy | |
| Prescott, Arizona | 24 63 | 625.6 | 29.99 | 761.7 | 44 | 6.7 | 52 | S | ..... | ..... | ..... | 8ok | 0 | SW | ..... | 0 | 0 | Fair | |
| Punta Rassa, Florida | 30.24 | 768.1 | 30.26 | 768.6 | 64 | 17.8 | 67 | NE | 4 | 1.8 | ..... | 5k | Haze | Calm | Calm | 0 | 0 | Fair | |
| Red Bluff, California | 29.74 | 755.4 | 30.11 | 764.8 | 40 | 4.4 | 82 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.22 | 5.6 | Clear | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rochester, New York | 29.21 | 741.9 | 29.81 | 757.2 | 53 | 11.7 | 86 | W | 5 | 2.2 | ..... | ..... | 10s | ..... | W | 0.03 | 0.8 | Cloudy | |
| Roseburg, Oregon | 29.50 | 749.3 | 30.09 | 764.3 | 38.5 | 3.6 | 91 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.18 | 3.3 | Cloudy | |
| Sacramento, California | 30.04 | 763.0 | 30.13 | 765.3 | 46 | 7.8 | 77 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.54 | 13.7 | Clear | |
| St. Louis, Missouri | 29.48 | 748.8 | 30.05 | 763.3 | 54 | 12.2 | 55 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Clear | |
| St. Marks, Florida | 30.30 | 769.6 | 30.31 | 769.9 | 53 | 11.7 | 93 | SE | 1 | 0.4 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| St. Paul, Minnesota | 29.04 | 737.6 | 29.89 | 759.2 | 32 | 0.0 | 89 | SE | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | Inap. | Inap. | Foggy | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.37 | 644.4 | 29.70 | 754.4 | 32 | 0.0 | 100 | NW | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.27 | 6.9 | Heavy snow | |
| San Antonio, Texas | 29.33 | 745.0 | 29.90 | 759.4 | 64 | 17.8 | 94 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | SE | Inap. | Inap. | Cloudy | |
| San Diego, California | 30.07 | 763.8 | 30.14 | 765.5 | 56 | 13.3 | 94 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.01 | 0.3 | Light rain | |
| Sandusky, Ohio | 29.27 | 743.4 | 29.93 | 760.2 | 54 | 12.2 | 80 | SW | 16 | 7.2 | ..... | 2k | Haze | Calm | Calm | 0.29 | 7.4 | Fair | |
| Sandy Hook, New Jersey | 30.01 | 762.2 | 30.08 | 762.7 | 48 | 8.9 | 78 | S | 8 | 3.6 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| San Francisco, California | 30.09 | 764.3 | 30.16 | 766.1 | 49 | 9.4 | 67 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0.94 | 23.9 | Clear | |
| Santa Fé, New Mexico | 23.11 | 587.0 | 29.65 | 753.1 | 32 | 0.0 | 50 | E | 4 | 1.8 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Savannah, Georgia | 30.25 | 768.3 | 30.35 | 770.9 | 57 | 13.9 | 75 | SW | 1 | 0.4 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Clearing | |
| Shreveport, Louisiana | 29.86 | 758.4 | 30.08 | 764.0 | 61 | 16.1 | 94 | SE | 7 | 3.1 | ..... | 5cs | 0 | S | ..... | 0 | 0 | Fair | |
| Smithville, North Carolina | 30.32 | 770.1 | 30.35 | 770.9 | 57 | 13.9 | 94 | S | 3 | 1.3 | ..... | 0 | 10ks | ..... | SW | 0 | 0 | Cloudy | |
| Springfield, Massachusetts | 29.81 | 757.2 | 29.94 | 760.5 | 43 | 6.1 | 83 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Stockton, Texas | 26.88 | 682.7 | 29.88 | 758.9 | 50 | 10.0 | 80 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass. | 29.94 | 760.5 | 30.00 | 762.0 | 40 | 4.4 | 91 | S | 12 | 5.4 | ..... | 5k | 2s | W | W | 0 | 0 | Foggy | |
| Toledo, Ohio | 29.22 | 742.2 | 29.88 | 758.9 | 53 | 11.7 | 79 | SW | 12 | 5.4 | ..... | 0 | Haze | ..... | Calm | 0.15 | 3.8 | Clear | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 48 | 8.9 | 77 | S | ..... | ..... | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Tybee Island, Georgia | 30.30 | 769.6 | 30.34 | 770.6 | 57 | 13.9 | 87 | W | 2 | 0.9 | ..... | 8k | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Umatilla, Oregon | 29.67 | 753.6 | ..... | ..... | 35 | 1.7 | 70 | SW | 4 | 1.8 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.92 | 760.0 | 30.18 | 766.6 | 59 | 15.0 | 94 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Virginia City, Montana | 23.85 | 605.8 | 29.38 | 745.0 | 26 | — 3.3 | 88 | W | 1 | 0.4 | ..... | ..... | 10n | ..... | Calm | 0.25 | 6.3 | Light snow | |
| Visalia, California | 29.74 | 755.4 | 30.12 | 765.0 | 46 | 7.8 | 88 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | |
| Washington, D. C. | 29.99 | 761.7 | 30.10 | 764.5 | 52.5 | 11.4 | 64 | S | 6 | 2.7 | ..... | 0 | 5s;sm | ..... | W | 0 | 0 | Smoky | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 41 | 5.0 | 57 | N | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.25 | 768.3 | 30.33 | 770.4 | 56 | 13.3 | 80 | SW | 6 | 2.7 | ..... | 8ck | Sm'e | W | Calm | 0 | 0 | Fair | |
| Winnemucca, Nevada | 25.67 | 649.5 | 29.93 | 760.2 | 25 | — 3.9 | 75 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.11 | 2.8 | Clear | |
| Wood's Holl, Mass. | 30.01 | 762.2 | 30.06 | 763.5 | 43 | 6.1 | 83 | SW | 12 | 5.4 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Fair | |
| Yankton, Dakota | 28.52 | 724.4 | 29.88 | 757.7 | 33 | 0.6 | 74 | E | 4 | 1.8 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| Yuma, Arizona | 29.83 | 757.7 | 30.00 | 762.0 | 58 | 14.4 | 44 | S | 4 | 1.8 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 30.04 | 763.0 | 30.10 | 764.5 | 13.5 | —10.3 | 74 | NE | 10 | 4.5 | ..... | 2ck | 3s | NE | ..... | Inap. | Inap. | Cloudy | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 30.15 | 765.8 | 30.17 | 766.3 | 67 | 19.4 | 79 | Calm | 0 | 0 | ..... | 4ck | 2cs | NE | NW | 0 | 0 | Fair | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.12 | 765.0 | 30.13 | 765.3 | 77 | 25.0 | 90 | Calm | 0 | 0 | ..... | 8c | 8s | Calm | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.93 | 760.2 | 30.01 | 762.2 | 78 | 25.6 | ..... | NE | 10 | 4.5 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | ..... | ..... | 30.06 | 763.5 | 82 | 27.8 | 83 | NE | ..... | ..... | 2 | 5k | 7ks | E | ..... | 0 | 0 | ½ cloudy | C. J. Hering. |
| Batavia, Dutch Guiana, S. A. | 30.04 | 763.1 | 30.05 | 763.3 | 84.2 | 29 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.20 | 640.1 | ..... | ..... | 67.2 | 19.6 | 73 | Calm | ..... | ..... | 0 | 1k | 0 | ..... | ..... | ..... | ..... | ..... | Thomas Herran. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medillin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,038 (?) ft., or 312.7 (?) m.; Camp Grant, 4,883 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,102 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,916.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,500 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,862.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,546 (?) ft., or 776.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er. 0—10. | Clouds. Amount. Low'r. 0—10. | Clouds. Direction. Up'er. From— | Clouds. Direction. Low'r. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.09 | 764.3 | 44 | 6.7 | 40 | 4.4 | 100 | WNW | 6 | 2.7 | ..... | ..... | 0 | ..... | ..... | 0.31 | 7.9 | ..... | ..... | Clear..... | |
| Navy Yard, Pensacola, Fla. | 30.37 | 771.4 | 61 | 16.1 | 60 | 15.6 | 94 | ENE | 5 | 2.2 | ..... | ..... | 5 | ..... | S&E | 0 | 0 | ..... | ..... | Fair ..... | |
| Navy Yard, Portsmouth, N.H | 30.04 | 763.0 | 71 | 21.7 | 40 | 4.4 | 91 | N | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Foggy ..... | |
| Naval Hospital, Yokohama, Japan..... | 29.74* | 755.4* | 53.5 | 11.9 | 43 | 6.1 | ? ? | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | Slight | Slight | ..... | ..... | Clear ..... | |
| Adams. Panama..... | 29.93 | 760.2 | 82 | 27.8 | 76 | 24.4 | 100 | WNW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy.. ..... | |
| Alliance, N. 38° 36′, E. 25° 52′..... | 29.91‡ | 759.7‡ | ..... | ..... | 58 | 14.4 | 64 | WSW | ..... | ..... | 3–4 | ..... | 8 | ..... | E | ..... | ..... | ..... | ..... | Cloudy..... | |
| Ashuelot. Shanghai, China ..... | 30.46* | 773.7* | 52 | 11.1 | 47 | 8.3 | 70 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Blue sky..... | |
| Canonicus, New Orleans, La..... | 30.14 | 765.5 | 46 | 7.8 | 58 | 14.4 | 94 | NE | ..... | ..... | 1 | ..... | 10 | ..... | N&E | ..... | ..... | ..... | ..... | Cloudy..... | |
| Colorado, New York, N. Y..... | 30.37‡ | 771.4‡ | ..... | ..... | 43 | 6.1 | 92 | SE | 1 | 0.4 | ..... | ..... | 10 | ..... | SE | 0.005 | 0.13 | ..... | ..... | Dense fog.... | |
| Constitution, N. 39° 59′ W. 64° 15′..... | 30.34‡ | 770.6‡ | ..... | ..... | 57 | 13.9 | 75 | S | ..... | ..... | 5 | ..... | 5 | ..... | S | ..... | ..... | Smooth | S | Fair..... | |
| Despatch, Constantinople, Turkey. | 29.94 | 760.5 | 66 | 18.9 | 49 | 9.4 | 71 | SW | ..... | ..... | 4 | ..... | 8 | ..... | SW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Enterprise, New Orleans, La..... | 30.19‡ | 766.8‡ | ..... | ..... | 62 | 16.7 | 88 | E | ..... | ..... | 1 | ..... | 8 | ..... | E | ..... | ..... | ..... | ..... | Misty..... | |
| Franklin, Norfolk, Va..... | 30.21‡ | 767.3‡ | ..... | ..... | 59 | 15.0 | 70 | SW | 6 | 2.7 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.11 | 764.8 | 74 | 23.3 | 73 | 22.8 | 81 | NNE | ..... | ..... | 3 | ..... | 2 | ..... | NNE | ..... | ..... | Mod'ate Ground | NW | Clear ..... | |
| Marion, Piraeus, Greece..... | 29.88 | 758.9 | 56 | 13.3 | 59 | 15.0 | 43 | S | ..... | ..... | 2 | ..... | 5 | ..... | W | 0 | 0 | ..... | ..... | Fair ..... | |
| Michigan, Erie, Pa..... | 29.40 | 746.7 | 75 | 23.9 | 54 | 12.2 | 67 | W | ..... | ..... | 3 | ..... | 10 | ..... | W | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monongahela, Manila, Phillipine Islands. | 30.21* | 767.3* | 83 | 28.3 | 83 | 28.3 | 70 | E | ..... | ..... | 2–3 | ..... | 2 | ..... | ..... | ..... | ..... | Smooth | ..... | D. clouds..... | |
| New Hampshire, Port Royal, S. C..... | 30.54 | 775.7 | 60 | 15.6 | 58 | 14.4 | 88 | W | 3 | 1.3 | ..... | ..... | 8 | ..... | SW | 0 | 0 | ..... | ..... | Cloudy.. ..... | |
| Omaha, S. 19° 00′, W. 30° 48′ ..... | 30.20* | 767.1* | 81 | 27.2 | 80 | 26.7 | 70 | E | 4 | 1.8 | ..... | ..... | 5 | ..... | W | 0 | 0 | Smooth | ..... | Pleasant..... | |
| Onward; Callao, Peru..... | 29.98† | 761.5† | ..... | ..... | 72 | 22.2 | 90 | Calm | ..... | ..... | 0 | ..... | 5 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, N. 21° 42′, W. 89° 10′..... | 30.12‡ | 765.0‡ | ..... | ..... | 73 | 22.8 | 95 | ENE | ..... | ..... | 4 | ..... | 2 | ..... | NW | ..... | ..... | Mod'ate | ENE | Clear..... | |
| Palos, Shanghai, China..... | 30.49* | 774.4* | 63 | 17.2 | 46 | 7.8 | 77 | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Pensacola, Honolulu, H. I..... | 30.25 | 768.3 | 75 | 23.9 | 72 | 22.2 | 80 | NE | 3 | 1.3 | ..... | ..... | 8 | ..... | NE | 0 | 0 | ..... | ..... | Cloudy..... | |
| Plymouth. Norfolk, Va..... | 30.16‡ | 766.1‡ | ..... | ..... | 59 | 15 0 | 70 | SW | ..... | ..... | 2–3 | ..... | 10 | ..... | SSE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Powhatan, N. 16° 39′ 27″, W. 71° 47′ 48″. | 30.04‡ | 763.0‡ | ..... | ..... | 77 | 25.0 | 95 | E | 9.6 | 4.3 | ..... | ..... | 8 | ..... | NE | 0.01 | 0.3 | Mod'ate | NE | Rainy ..... | |
| Ranger, N. 23° 49′, E. 118° 43′ ..... | 30.37* | 771.4* | ..... | ..... | 59 | 15.0 | 88 | NNE | ..... | ..... | 5–6 | ..... | 10 | ..... | NNE | ..... | ..... | Mod'ate | S | Overcast..... | |
| Rio Bravo, Brownsville, Texas..... | ..... | ..... | ..... | ..... | 66 | 18.9 | 94 | SSE | ..... | ..... | 1 | ..... | 2 | ..... | SE | ..... | ..... | ..... | ..... | Misty..... | |
| Santee, Annapolis, Md..... | 30.14* | 765.5* | 66 | 18.9 | 55 | 12.8 | 56 | WSW | ..... | ..... | 2 | ..... | 6 | ..... | S&W | 0 | 0 | ..... | ..... | Hazy..... | |
| Saratoga, Washington, D. C..... | 30.01* | 762.2* | ..... | ..... | 57 | 13.9 | 94 | SW | ..... | ..... | 1 | ..... | 4 | ..... | S&W | 0 | 0 | ..... | ..... | Clear..... | |
| St. Louis, League Island, Pa ..... | 30.01 | 762.2 | 62 | 16.7 | 49 | 9.4 | 78 | SW | 5 | 2.2 | ..... | ..... | 8 | ..... | WNW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Supply, N. 46° 40′ W. 40° 00′..... | 30.25 | 768.3 | 65 | 18.3 | 59 | 15.0 | 88 | SE | ..... | ..... | 6 | ..... | 8 | ..... | S | ..... | ..... | Rough | S | Fair..... | |
| Swatara, N. 18° 05′ W. 74° 32′..... | 30.10* | 764.5* | ..... | ..... | 79 | 26.1 | 82 | ENE | ..... | ..... | 2 | ..... | 3 | ..... | E | ..... | ..... | Long | E | D. clouds..... | |
| Tennessee, N. 13° 52′, E. 112° 34′..... | 30.08* | 764.0* | 82 | 27.8 | 81 | 27.2 | 100 | E | 4 | 1.8 | ..... | ..... | 3 | ..... | E | 0 | 0 | Mod'ate | E | D. clouds.... | |
| Trenton, Smyrna, Turkey..... | 29.99‡ | 761.7‡ | ..... | ..... | 57 | 13.9 | 100 | S | ..... | ..... | 2–4 | ..... | 8 | ..... | SE | 0 | 0 | Mod'ate | NE | Threatening | |
| Tuscarora, N. 30° 50,′ W. 116° 40′.... | 30.18 | 766.6 | 60 | 15.6 | 59 | 15.0 | 82 | NNW | ..... | ..... | 2–4 | ..... | 8 | ..... | NNW | 0 | 0 | Mod'ate | W | Cloudy..... | |
| Vandalia, N. 40° 01′, E. 26° 09′..... | 29.77‡ | 756.1‡ | ..... | ..... | 56 | 13.3 | 81 | SSW | ..... | ..... | 5 | ..... | 5 | ..... | SSW | ..... | ..... | ..... | ..... | Fair..... | |
| Wabash, Boston, Mass..... | 30.00‡ | 762.0‡ | ..... | ..... | 43 | 6.1 | 92 | SSW | 7 | 3.1 | ..... | ..... | 8 | ..... | S&W | 0 | 0 | ..... | ..... | Hazy..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

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

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | Character. | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Panama, West side San Juan Island | | | 29.76† | 755.9† | | | | SE | | | 4 | | 5 | | SE | | | Variable | Capt. Seabury. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, Yokohama, Japan | | | | | 43 | 6.1 | | NNW | | | 3 | | | | | | | Blue sky | Capt. Maury. |
| S. S. Colima, N. 31° 1′, W. 119° 30′ | | | 30.17† | 766.3† | 62 | 16.7 | 88 | NW | | | 3 | | 9 | | Calm | Mod'ate | NNW | D. clouds | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic, N. 44° 41′, W. 46° 34′ | | | 29.88* | 758.9* | | | | SW | | | 6 | | 10 | | SW | Mod'ate | WSW | Cloudy | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. W. H. Thompson |
| S. S. Celtic, Liverpool | | | 30.04† | 763.0† | 49 | 9.4 | | WSW | | | 6 | | | WSW | | | | Showery | Capt. B. Gleadell. |
| S. S. Germanic, N. 45° 12′, W. 41° 01′ | | | 30.07† | 763.8† | 61 | 16.1 | 88 | S | | | 6 | | 10 | | S | Heavy cross. | SSW; SE | D. clouds | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. *Aneroid; corrected for elevation; instrumental error not known. †Aneroid.

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

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic | | | | | | | | | | | | | | | | | | | Capt. John Metcalf. |
| S. S. Gaelic, N. 31° 00′, W. 179° 20′ | | | 30.09† | 764.3† | 62 | 16.7 | ?? | WSW | | | 6 | | ks | | W | High | W | Overcast | Capt. W. H. Kidley |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 42° 22′, W. 60° 34′ | S82W | | 30.43 | 772.9 | 47.0 | 8.3 | 88 | W | | | 2 | | c | | N | Smooth | W | Clearing | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

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

| NAMES OF VESSELS. | True course toward— ° | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | Character | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, Philadelphia, Pa | | | 30.03† | 762.7† | 59 | 15.0 | 87 | SW | | | 5 | | 2 | | W | | | Clear | Captain Sargent. |
| S. S. Ohio, Liverpool | | | 30.01 | 762.2 | 52 | 11.1 | 93 | WNW | | | 5 | | 10 | | WNW | | | Dull | Captain Morrison. |
| S. S. Pennsylvania, Queenstown, Ireland | | | 30.35 | 770.9 | 49 | 9.4 | 100 | NW | | | 6 | | 4 | | NW | Light | NW | Clear | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. †Aneroid; unreliable, corrected for elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

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

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

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

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

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

**MARINE SERIES.** (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Providence, R. I | | | 29.99 | 761.7 | 53 | 11.7 | 80 | SSW | 4 | 1.8 | | | 5ck;hz | | | | | Hazy | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 30.01 | 762 2 | —37 | —38.3 | 86* | Calm | 0 | 0 | | 0 | 0 | | | | | Clear | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Determined by use of hair hygrometer.

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

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

Albert J. Myer

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

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 8, 1878.

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

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.

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

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

## ALGERIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | | | 30.21 | 767.2 | 63.9 | 17.7 | | NE | | | 4 | | 1 | | | 0 | 0 | Very fair | Dr. Ollive. |
| Nemours | | | 30.21 | 767.3 | 64.8 | 18.2 | 78 | Calm | | | 0 | | 1 | | | 0 | 0 | Very fair | Michel. |
| Algiers | | | 30.16 | 766.0 | 64.4 | 18.0 | 65 | W | | | 1 | | 0 | | | 0 | 0 | Clear | Towiliere. |
| La Calle | | | 30.12 | 765.0 | 60.8 | 16.0 | 71 | NW | | | 5 | | 8 | | | 0 | 0 | Very cloudy | Boulangeot. |
| Tunis | | | 30.04 | 763.1 | 64.2 | 17.9 | 55 | NW | | | 9 | | 6 | | | 0 | 0 | Cloudy | Jacques. |
| Sfax | | | 30.08 | 764.0 | 69.8 | 21.0 | | W | | | 3 | | 2 | | | 0 | 0 | Fair | Gau. |
| Saida | | | 30.24 | 768.0 | 66.6 | 19.2 | 90 | NNW | | | 1 | | 2 | | | 0 | 0 | Fair | Herbin. |
| Tebessa | | | 30.25 | 768.4 | | | | NW | | | 5 | | 1 | | | 0 | 0 | Very fair | Bourgeois. |
| Geriville | | | 30.29 | 769.4 | 59.7 | 15.4 | 87 | W | | | 1 | | 1 | | | 0 | 0 | Very fair | Lemaillot. |
| Laghouat | | | 30.38 | 771.7 | 70.9 | 21.6 | 29 | NNW | | | 1 | | 0 | | | 0 | 0 | Clear | Guyot. |
| Biskra | | | 30.18 | 766.6 | | | | | | | | | | | | | | | Chanvaux. |

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

## AUSTRIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 28.79 | 731.2 | 29.32 | 744.6 | 62.6 | 17.0 | 31 | SW | | | 6 | | 8 | | | 0 | 0 | | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 28.36 | 720.3 | 29.13 | 740.0 | 34.5 | 1.4 | 87 | W | | | 3 | | 9 | | | 0.409 | 10.4 | | Dr. Wierzbiski. |
| Eperies | 28.28 | 718.4 | 29.16 | 740.6 | 39.6 | 4.2 | 85 | W | | | 3 | | 10k | | | 0.047 | 1.20 | | Julius Mikolik. |
| Gratz | 28.24 | 717.2 | 29.50 | 749.3 | 39.7 | 4.3 | 73 | NW | | | 6 | | 10 | | | 0.006 | 0.15 | | Andreas Rospini. |
| Hermannstadt | 27.96 | 710.3 | 29.39 | 746.5 | 43.3 | 6.3 | 54 | NNE | | | 1 | | 10 | | | 0.059 | 1.50 | | Prof. Reissenberg |
| Kremsmünster | 28.21 | 716.4 | 29.57 | 751.1 | 36.7 | 2.6 | 82 | WNW | | | 4 | | 10 | | | 0.322 | 8.2 | | Prof. C. Wagner |
| Lemberg | 28.04 | 712.2 | 29.03 | 737.3 | 37.2 | 2.9 | 98 | SW | | | 3 | | 10 | | | 0.071 | 1.8 | | Dr. T. Stanecki. |
| Pola | 29.37 | 746.0 | 29.48 | 748.8 | 58.8 | 14.9 | 57 | S | | | 2 | | 1s | | | 0.012 | 0.3 | | I.R.Hydrographic Office |
| Szathmar | 28.81 | 731.7 | 29.32 | 744.6 | 40.3 | 4.6 | 87 | S | | | 5 | | 8 | | | 0.094 | 2.4 | | Johann Tamas, S. J. |
| Szegedin | 29.04 | 737.5 | 29.32 | 744.6 | 48.2 | 9.0 | 73 | S | | | 4 | | 8 | | | 0.128 | 3.25 | | Karl Stancel. |
| Trieste | 29.37 | 746.1 | 29.48 | 748.7 | 51.6 | 10.9 | 85 | W | | | 1 | | 0 | | | 0 | 0 | Clear | P. Busin. |
| Vienna | 28.72 | 729.4 | 29.44 | 747.8 | 39.6 | 4.2 | 73 | WSW | | | 4 | | 9 | | | 0.354 | 9.0 | | I. R. Central Met. Obs'y. |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation: The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

## BELGIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.37 | 720.6 | 29.91 | 759.7 | 39.9 | 4.4 | 60 | NW | | | 5 | | 10 | | | 0.051 | 1.3 | | Prof. M. Passau. |
| Brussels | 29.71 | 754.5 | 29.91 | 759.7 | 44.4 | 6.9 | 50 | WNW | | | 6 | | 5 | | NW | 0.035 | 0.9 | | Royal Observatory. |
| Furnes | 29.99 | 761.8 | 30.02 | 762.4 | 48.4 | 9.1 | 51 | NW | | | 7 | | 2 | | | 0.004 | 0.1 | | M. E. de Cae. |
| Maeseyck | 29.69 | 754.1 | 29.82 | 757.3 | 40.8 | 4.9 | 85 | W | | | 4 | | 8 | | | 0.240 | 6.1 | | M. Pierrot. |

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

## BRITISH SERIES.

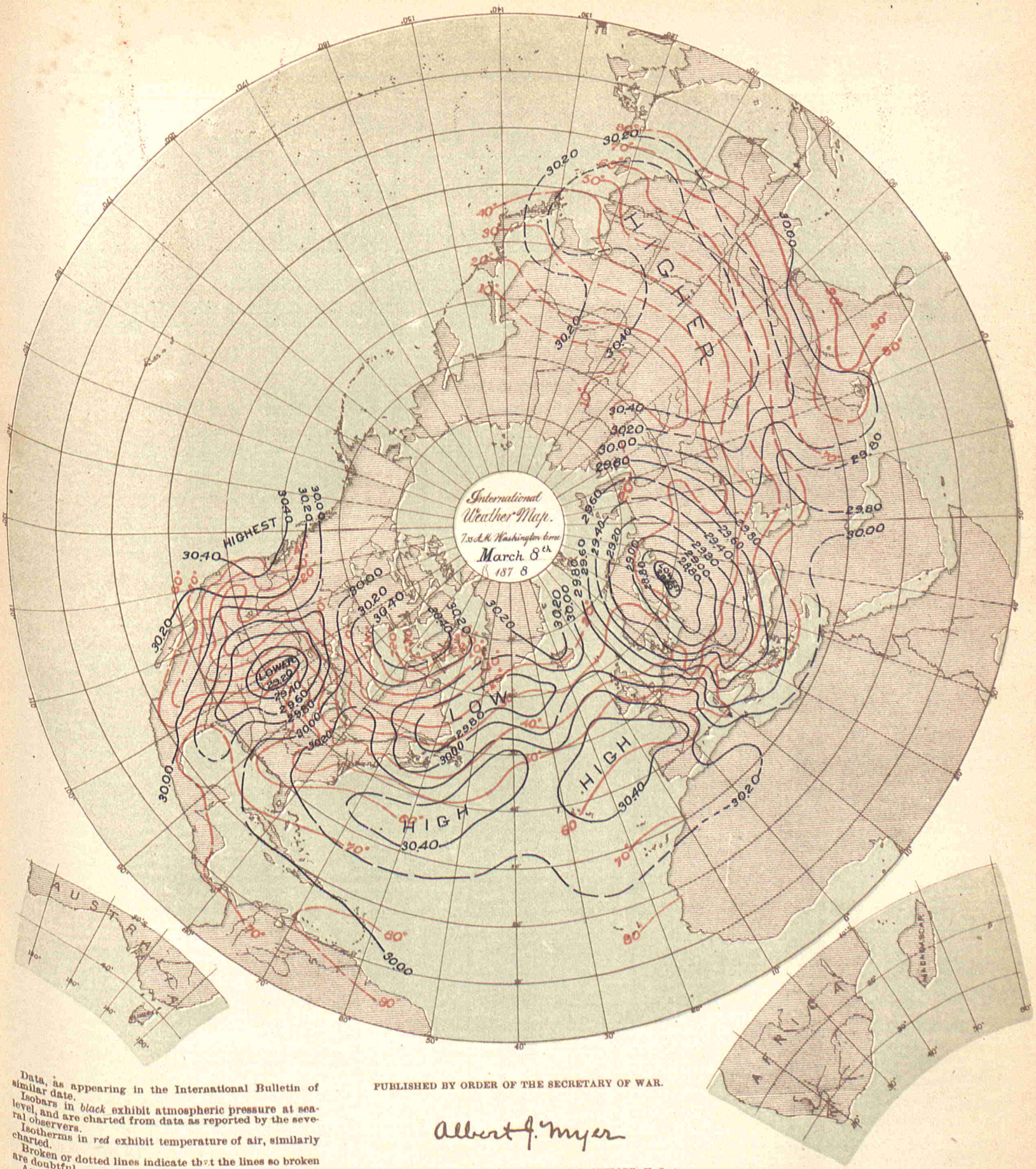
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.80 | 756.9 | 29.90 | 759.4 | 37.0 | 2.8 | ..... | NW | 33 | 14.8 | ..... | ..... | 6 | ..... | ..... | 0.020 | 0.51 | Squally | W. Boswell. |
| Ardrossan | 29.99 | 761.7 | 30.00 | 762.0 | 43 | 6.1 | ..... | NW | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | William McNeil, |
| Armagh, Observatory | ..... | ..... | 30.18 | 766.6 | 47.7 | 8.7 | ..... | WNW | 19 | 8.5 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Squally | S. Call, for Dr. Robinson. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.05 | 763.3 | 44.5 | 6.9 | ..... | W | 45 | 20.1 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | John Hartnup. |
| Birr Castle, (Parsonstown) | 30.07 | 763.8 | 30.27 | 768.8 | 50.8 | 10.4 | ..... | WNW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | J. Dreyer. |
| Bradford, Yorkshire | 29.61 | 752.1 | 30.01 | 762.2 | 44.1 | 6.7 | ..... | W | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0.03 | 0.8 | D. clouds | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.97 | 761.2 | 30.00 | 762.0 | 81.0 | 27.2 | ..... | NE | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D clouds | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 30.00 | 762.0 | 48.0 | 8.9 | ..... | NW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | Overcast | H. Todd. [H. C. |
| Cardington | ..... | ..... | 30.03 | 762.7 | 46.0 | 7.8 | ..... | NW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John McLaren. |
| Chatham, School M. E. | 29.91 | 759.7 | 30.04 | 763.0 | 49.2 | 9.6 | ..... | NW | ..... | ..... | 8 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.66 | 728.0 | 30.16 | 766.1 | 43.4 | 6.3 | ..... | NW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy | Alexander Watt. |
| Donaghadee | 30.09 | 764.3 | 30.12 | 765.0 | 46 | 7.8 | ..... | NW | ..... | ..... | 5 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | J. Mac Gowan. |
| Dover | 30.00 | 762.0 | 30.03 | 762.7 | 48 | 8.9 | ..... | NW | ..... | ..... | 6 | ..... | 2 | ..... | ..... | ..... | ..... | Squally | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 30.03 | 762.7 | 46.0 | 7.8 | ..... | NW | 15.2 | 6.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Squally | Thomas Mackereth. |
| Falmouth, Observatory | 30.06 | 763 5 | 30.29 | 769.4 | 49.9 | 9.9 | ..... | NW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.74 | 704 6 | 29.94 | 760.5 | 82.4 | 28.0 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.69 | 754 1 | 29.92 | 760.0 | 88.0 | 31.1 | ..... | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | |
| Galway, Queen's College | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. A. H. Curtis, |
| Gibraltar, (Mediterranean) | 30.19 | 766.8 | 30.25 | 768.3 | 65.2 | 18.4 | ..... | E | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds | Corpl. C. Aitken, A. H. C. |
| Glasgow, Observatory | 29.80 | 756.9 | 30.00 | 762.0 | 43.0 | 6.1 | ..... | NNW | ..... | ..... | 6 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | D. G. Maclean. |
| Great Yarmouth | 29.90 | 759.4 | 29.91 | 759.7 | 45 | 7.2 | ..... | NW | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | Squally | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.88 | 758.9 | 30.05 | 763.3 | 47.5 | 8.6 | ..... | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | The Staff, for G. B. Airy. |
| Guernsey | 30.00 | 762.0 | 30.23 | 767.8 | 51 | 10.6 | ..... | NW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Dr. S. E. Hoskins, F. R. S. |
| Helston | ..... | ..... | 30.28 | 769.1 | 53 | 11.7 | ..... | N | ..... | ..... | 6 | ..... | 2c | ..... | ..... | 0 | 0 | Fine | M. P. Moyle. |
| Holyhead | 30.10 | 764.5 | 30.15 | 765.8 | 47 | 8.3 | ..... | NW | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | John Tilston. |
| Jersey | 29.96 | 761.0 | 30.26 | 768.6 | 50.0 | 10.0 | ..... | WNW | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | J. Fisher. |
| Kew, Observatory | ..... | ..... | 30.08 | 764.0 | 48.0 | 8.9 | ..... | WNW | 19 | 8.5 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Threatening | The Staff. |
| Kingstown | 30.16 | 766.1 | 30.19 | 766.8 | 46 | 7.8 | ..... | NW | ..... | ..... | 6 | ..... | 10kd | ..... | ..... | ..... | ..... | Overcast | George Mitchell. |
| Leicester, Museum | ..... | ..... | 30.05 | 763.3 | 44.9 | 7.2 | ..... | NW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | Wm. J. Harrison, F. G. S. |
| Malta, (Mediterranean) | 29.83 | 757.7 | 29.90 | 759.4 | 61.0 | 16 1 | ..... | NW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds | Sgt. Fred. Travis, A. H. |
| Nairn | 29.88 | 758.9 | 29.97 | 761.2 | 35 | 1.7 | ..... | NW | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | ¾ clouded | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 30.11 | 764.8 | 69.8 | 21.0 | ..... | E | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.85 | 758.2 | 30.04 | 763.0 | 43.7 | 6.5 | ..... | NW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Raining | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.53 | 750.0 | 30.07 | 763.8 | 46.0 | 7.8 | ..... | NW | ..... | ..... | 6 | ..... | 10k; d | ..... | WNW; NW | ..... | ..... | D. clouds | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.08 | 764.0 | 48 | 8.9 | ..... | NW | ..... | ..... | 6 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | Mr. Lucas. |
| Plymouth | 30.17 | 766.3 | 30.24 | 768.1 | 52.7 | 11.5 | ..... | NW | ..... | ..... | 5 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds | John Merrifield. |
| Roche's Point | 30.24 | 768.1 | 30.29 | 769.4 | 50 | 10.0 | ..... | NW | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | Cloudy | W. Kennedy. |
| Saint Ann's Head | 30.07 | 763.8 | 30.24 | 768.1 | 47 | 8.3 | ..... | NNW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | | John C. Walker. |
| Sandwick Manse, (Orkneys.) | ..... | ..... | 29.90 | 759.4 | 32.9 | 0.5 | ..... | NW | ..... | ..... | 5 | ..... | 3 | ..... | ..... | ..... | ..... | | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.68 | 753.9 | 50.0 | 10.0 | ..... | NNW | 48 | 21.5 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Showery | Sergt. W. H. Lyne. |
| Sheffield | 29.72 | 754.9 | 30.00 | 762.0 | 48.4 | 9.1 | ..... | S | ..... | ..... | 2 | ..... | 9 | ..... | ..... | Blank | Blank | Misty | W. F. Cooper. |
| Silloth Rectory | 29.01 | 759.7 | 30.02 | 762.5 | 45.1 | 7.8 | 64 | NNW | ..... | ..... | 6 | ..... | 2 | ..... | ..... | Blank | Blank | Blue sky | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.62 | 752.3 | 30.03 | 762.7 | 43.4 | 6.3 | ..... | N | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | D. clouds | Rev. S. J. Perry. |
| Stonorway, Lews C., (Hebr.) | ..... | ..... | 29.97 | 761.2 | 36 | 2.2 | ..... | NW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | Hazy | John Smith. |
| Stratfield Turgiss | 29.89 | 759.2 | 30.11 | 764.8 | 51.4 | 10.8 | ..... | NNE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Rev. C. H. Griffith, F. M. S |
| Thurso | ..... | ..... | 29.90 | 759.4 | 37 | 2.8 | ..... | NW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Squally | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 30.25 | 768.3 | 54 | 12.2 | ..... | NNW | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 30.34 | 770.6 | 51.4 | 10.8 | ..... | NW | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | The Staff. |
| Sub-Series. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | NW | 8 | 3.6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.62 | 752.3 | 70.0 | 21.1 | 73 | W | ..... | ..... | 5 | ..... | 10n | ..... | ..... | 0 | 0 | Covered | Francis Abbott, F. R. A. S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.76 | 755.9 | 29.94 | 760.6 | 84.0 | 28.9 | 66 | NW | 8.5 | 3.8 | ..... | 8 | 4 | ..... | NNW | 0 | 0 | Cloudy; fine | C. Meldrum. |
| Melbourne, Observatory | 30.03 | 762.7 | 30.12 | 765.0 | 63.2 | 17.3 | 69 | W | 14 | 6 3 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | Fine | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

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

| Marine Series. Vessels. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather | Observer |
|---|---|---|---|---|
| S. S. Algeria | ..... | ..... | ..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon, N. 16° 56′, W. 66° 35′ | 3 | E | Showery | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | Capt. C. C. Prehn. [R. |
| S. S. Peruvian | ..... | ..... | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire, N. 37° 35′ W. 46° 10′ | 3 | NW | D. clouds | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.




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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.19 | 665.2 | | | 64.8 | 18.2 | 82 | NE | | | 3 | p | 1k | | E | 0 | 0 | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.08 | 738.7 | 29.13 | 739.9 | 36.3 | 2.4 | 82 | NNE | | | 6 | | 5 | | | | | | |
| Fanöe | 29.33 | 744.9 | 29.35 | 745.4 | 36.5 | 2.5 | 82 | NNW | | | 7 | | 8 | | | | | | |
| Godthaab, (Greenland) | 29.85 | 758.2 | 29.89 | 759.3 | 8.1 | —13.3 | | NNE | | | 6 | | 10 | | | | | | |
| Stykkisholm, (Iceland) | 30.17 | 766.4 | 30.22 | 767.5 | 18.1 | — 7.7 | 95 | E | | | 4 | | 8 | | | | | | |
| Thorshavn, (Faröe) | 29.98 | 761.5 | 30.02 | 762.4 | 24.1 | — 4.4 | 79 | W | | | 5 | | 7 | | | | | | Snowing |
| Vestervig | 29.16 | 740.6 | 29.33 | 744.9 | 34.9 | 1.6 | 73 | N | | | 6 | | 9 | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the cooperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.68 | 753.9 | 30.23 | 767.9 | 52.7 | 11.5 | 48 | N | | | 4 | | 5 | | | 0.008 | 0.2 | Cloudy | Collignon, Director. |
| Amiens, Normal School | 29.94 | 760.4 | 30.05 | 763.2 | 50.7 | 10.4 | 82 | W | | | 3 | | 5 | | W | 0 | 0 | Cloudy | Bonvarne, Director. |
| Avignon, Normal School | 29.99 | 761.7 | 30.07 | 763.7 | 59.7 | 15.4 | 44 | NNW | | | 8 | | 2 | | NNW | 0 | 0 | Partly cl'dy | Mr. Giraud, Director |
| Bar-sur-Seine | 29.49 | 749.1 | 30.07 | 763.7 | 50.2 | 10.1 | 44 | NW | | | 4 | | 8km | | NW | 0.031 | 0.8 | Very cloudy | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 49.5 | 9.7 | 40 | NW | | | 6 | | 5 | | NW | 0 | 0 | Cloudy | Normal School. |
| Besançon | 29.18 | 741.1 | 30.09 | 764.2 | 44.8 | 7.1 | 94 | N | | | 2 | | 8 | | W | 0.295 | 7.5 | Very cloudy | Normal School. |
| Bourg-en-Bresse | 29.29 | 744.0 | 30.21 | 767.4 | 47.7 | 8.7 | 92 | W | | | 2 | | 10n | | W | 0.213 | 5.4 | Raining | Normal School. |
| Bourges, Normal School | 29.54 | 750.2 | 30.09 | 764.3 | 51.8 | 11 | 85 | WSW | | | 2 | | 8 | | SE | 0.04 | 1. | Very cloudy | A. Wagner, Director. |
| Brest, Naval Observatory | 30.04 | 762.9 | 30.25 | 768.4 | 53.1 | 11.7 | 75 | N | | | 3 | | 10 | | N | | | Raining | The Staff. |
| Carcassonne, Normal School | 29.96 | 760.9 | 30.38 | 771.6 | 54.7 | 12.6 | 88 | W | | | 6 | | 5 | | W | 0 | 0 | Cloudy | Vateau, Director. |
| Caen | 30.11 | 764.8 | 30.19 | 766.7 | 51.4 | 10.8 | 67 | WNW | | | 6 | | 5 | | NW | 0 | 0 | Cloudy | Normal School. |
| Chartres, Normal School | 29.64 | 752.9 | 30.22 | 767.6 | 49.5 | 9.7 | 95 | NW | | | 6 | | 7 | | NW | 0 | 0 | | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.71 | 754.5 | 30.03 | 762.7 | 48.2 | 9.0 | 66 | NW | | | 6 | | 5k | | NW | 0.071 | 1.8 | Cloudy | Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.80 | 731.6 | 30.18 | 766.6 | 49.5 | 9.7 | 66 | NW | | | 3 | | 8 | | NW | 0 | 0 | Very cloudy | Alluard, Director. |
| Commercy, Normal School | 29.10 | 739.2 | 30.00 | 761.9 | 45.7 | 7.6 | 80 | NW | | | 8 | | 5 | | NW | 0.071 | 1.8 | Cloudy | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.84 | 732.5 | 29.98 | 761.5 | 58.5 | 14.7 | 72 | NW | | | 8 | | 2 | | NW | 0 | 0 | ¼ Covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 30.08 | 763.9 | 30.29 | 769.4 | 54.0 | 12.2 | 83 | S | | | 2 | | 10 | | | 0 | 0 | Covered | Mouillot, Director. |
| Le Mans, Normal School | 29.89 | 759.1 | 30.20 | 767.0 | 54.7 | 12.6 | 55 | N | | | 4 | | 5 | | NW | 0 | 0 | Cloudy. | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.18 | 741.1 | 30.13 | 765.2 | 48.6 | 9.2 | 96 | SW | | | 6 | | 10 | | W | 0.307 | 7.80 | Covered | Voudez, Director. |
| Lorient, Naval Observatory | 30.21 | 767.3 | 30.31 | 769.8 | 55.4 | 13.0 | 70 | NNW | | | 3 | | 8 | | N | 0 | 0 | ¾ covered | T. Carré, Director. |
| Mâcon, Normal School | 29.47 | 748.4 | 30.12 | 765.1 | 49.3 | 9.0 | 86 | W | | | 2 | | 10 | | NW | 0.020 | 0.5 | Covered | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | 28.93 | 734.7 | 29.99 | 761.8 | 45.7 | 7.6 | 77 | WNW | | | 4 | | 10 | | ESE | 0 | 0 | Covered | Normal School. |
| Nismes, Normal School | 29.89 | 759.3 | 30.10 | 764.5 | 63.3 | 17.4 | 57 | N | | | 6 | | 2 | | N | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Orleans, Normal School | 29.80 | 756.9 | 30.19 | 766.7 | 53.2 | 11.8 | 56 | NW | | | | | 5 | | NW | 0 | 0 | Cloudy | Bernard, Director. |
| Paris, Observatory | 29.85 | 758.3 | 30.10 | 764.5 | 50.4 | 10.2 | 40 | NW | | | 4 | | 8 | | NW | 0.020 | 0.51 | Very cloudy | National Observatory. |
| Privas | 28.88 | 733.6 | 29.94 | 760.5 | 55.4 | 13 | 43 | N | | | 2 | | 10 | | S | 0 | 0 | Covered | Normal School |
| Puy de Dome (Summit) | | | | | | | | | | | | | | | | | | | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.29 | 769.4 | 30.32 | 770.2 | 55.4 | 13.0 | 81 | W | | | 4 | | 10 | | W | 0 | 0 | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 30.05 | 763.3 | 30.14 | 765.5 | 50.7 | 10.4 | 54 | NNW | | | 8 | | 5 | | N | 0.020 | 0.5 | Cloudy | F. Lucard, Director. |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | M. H. Hercouet. |
| Tarbes, Normal School | 29.92 | 744.6 | 30.41 | 772.5 | 53.6 | 12 | 65 | SW | | | 4 | | 5 | | W | 0 | 0 | Cloudy | T. Hugues, Director. |
| Villefranche | 29.42 | 747.2 | 30.17 | 766.2 | 51.6 | 10.9 | 73 | NW | | | 2 | | 8 | | NNW | 0.008 | 0.2 | Very cloudy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.80 | 757.0 | 29.83 | 757.7 | 75.6 | 24.2 | | | | | | | | | | 0.08 | 2. | | L'Abbé Marchési |
| Lyons | | | 30.19 | 766.9 | 50.4 | 10.2 | | | | | | | | | | 0.04 | 1. | Showery | M. Jeys. |
| Marseilles, Observatory | | | 29.96 | 760.9 | 60.6 | 15.9 | 41 | NW | | | 8 | | 1 | | | 0 | 0 | | The Staff. |
| Mont-Louis | 25.00 | 635.1 | 30.32 | 770.1 | 58.2 | 11.8 | 17 | WSW | 9.3 | 4.17 | | | 1 | | WNW | 0 | 0 | | Mr. Falguère. |
| Nice | 29.60 | 751.8 | 29.68 | 753.8 | 61.9 | 16.6 | 66 | E | | | 4 | | 1 | | W | 0 | 0 | Clear | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.81 | 757.2 | 30.09 | 764.2 | 50.4 | 10.2 | 41 | NW | | | 6 | | 6 | | NW | 0.020 | 0.5 | | Marié Davy, Director. |
| Perpignan | | | 30.21 | 767.4 | 59.4 | 15 2 | 63 | NW | 35.4 | 15.83 | | | 5 | | NW | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Raylac. |
| Pic du Midi, (Plantade,) H. P. | 22.70 | 576.5 | | | 41.4 | 5.2 | | Calm | | | 0 | | 0 | | | 0 | 0 | Clear | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.93 | 760.3 | 30.10 | 764.5 | 49.6 | 9.8 | 49 | NW | | | 3 | | 9 | | | 0.008 | 0.2 | | E. Renou. |
| Toulouse, Observatory | 29.63 | 752.7 | 30.37 | 771.3 | 50.5 | 10.3 | 75 | NW | | | 6 | | 10 | | | 0 | 0 | | The Staff. |
| Tours | 29.97 | 761.3 | 30.17 | 766.3 | 55.9 | 13.3 | 66 | WSW | | | 3 | | 7 | | NNW | 0 | 0 | | C. Marquet. |
| Versailles, (near Paris) | | | 30.10 | 764.4 | 51.8 | 11.0 | 48 | NNW | | | 3 | | 9 | | | 0.029 | 0.72 | Almost cov'd | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.49 | 774.4 | 30.51 | 775.0 | 41.4 | 5.2 | 87 | ENE | 8.3 | 3.7 | | | 8ck | | W | 0 | 0 | Fair | Mare Dechevrens, S. J. |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,686.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

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

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 28.85 | 732.8 | 29.02 | 737.1 | 41.4 | 5.2 | 77 | NW | | | 7 | | 10 | | | 0.388 | 9.85 | Raining | Prof. Arndt. |
| Breslau | 28.51 | 724.2 | 29.03 | 737.3 | 38.1 | 3.4 | 79 | W | | | 8 | | 10 | | | 0.135 | 3.43 | Raining | Royal University Obs'y |
| Carlsruhe | 29.38 | 746.2 | 29.81 | 757.1 | 45.7 | 7.6 | 54 | SW | | | 8 | | 2 | | | 0.110 | 2.8 | | Albert Senz. |
| Cassel | 28.91 | 734.4 | 29.51 | 749.6 | 43.2 | 6.2 | 60 | WNW | | | 9 | | 8 | W | | 0.782 | 19.86 | | Dr. H. Möhl. |
| Crefeld | 29.56 | 750.7 | 29.72 | 754.8 | 43.9 | 6.6 | 57 | W | | | 9 | | 6 | | | 0.43 | 11. | | Director Lose. |
| Emden | 29.59 | 751.6 | 29.63 | 752.5 | 42.1 | 5.6 | 66 | NW | | | 5 | | 1 | | | 0.264 | 6.7 | | Prof. Prestel. |
| Frankfort on the Main | 29.40 | 746.8 | 29.77 | 756.2 | 42.4 | 5.8 | 59 | NW | | | 7 | | 6 | | | 0.319 | 8.1 | | Physical Society. |
| Friedrichshafen | 28.43 | 722.0 | 29.90 | 759.4 | 40.1 | 4.5 | 89 | WNW | | | | | 10 | W | | 0.220 | 5.6 | Graupelnd. | M. Wilhelm. |
| Hamburg | 29.25 | 743.0 | 29.32 | 744.8 | 36.3 | 2.4 | 93 | NW | | | 8 | | 10kn | | | 0.346 | 8.8 | Rain & snow | Captain F. Hegemann. |
| Kiel | 29.28 | 743.8 | 29.30 | 744.2 | 37.4 | 3.0 | 82 | NW | | | 7 | | 8 | | | 0.240 | 6.10 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 28.70 | 729.0 | 28.78 | 731.0 | 32.4 | 0.2 | 96 | NE | | | | | | | | 0.173 | 4.39 | Snowing | Prof. E. Luther. |
| Köslin | | | 28.72 | 729.4 | 34.9 | 1.6 | | N | | | 4 | | 4 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 28.85 | 732.8 | 29.27 | 743.5 | 40.6 | 4.8 | 89 | NW | | | 7 | | 10 | | | 0.327 | 8.3 | Light snow | Prof. Bruhns. |
| Memel, Naval School | 28.77 | 730.7 | 28.81 | 731.8 | 35.6 | 2.0 | 78 | NNE | | | 2 | | 7cs;k | | | | | | Reinbrech von Skalweit. |
| Neufahrwasser | 28.72 | 729.4 | 28.73 | 729.8 | 34.0 | 1.1 | 98 | NNE | | | 3 | | 10 | | | 0.276 | 7.0 | Snowing | A. Lothes. |
| Posen | 28.59 | 726.2 | 28.89 | 733.8 | 39.4 | 4.1 | 82 | W | | | 9 | | 10 | | | 0.039 | 1.00 | Covered | Dr. Mugener. |
| Strassburg Obs., (in Alsace | 29.34 | 745.3 | 29.90 | 759.4 | 48.2 | 9.0 | 42 | NW | | | 5 | | 7 | NW | | 0.069 | 1.74 | | Dr. Schur. |
| Stuttgart | 28.82 | 732.0 | 29.78 | 756.3 | 42.8 | 6.0 | 53 | W | | | 7 | | 9 | W | | 0.213 | 5.4 | Rain & snow | Prof. Schoder. |
| Treves, (Trier) | 29.26 | 743.1 | 29.78 | 756.3 | 45.5 | 7.5 | 79 | W | | | 9 | | 4 | | | 0.009 | 0.22 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.15 | 715.1 | 29.69 | 754.2 | 36.7 | 2.6 | 82 | W | 18 | 8 | | | 8kn | | NW | 0.205 | 5.2 | Snowing | Dr. Von Bebber. |
| Wustrow, Naval School | 29.15 | 740.4 | 29.18 | 741.2 | 33.1 | 0.6 | 98 | N | | | 6 | | 10 | | | 0.194 | 4.93 | Raining | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Königsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.32 | 744.8 | 29.72 | 754.8 | 56.8 | 13.8 | | S | | | 1.5 | | | | | | | Cloudy | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

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

## INDIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.98 | 761.4 | 30.03 | 762.7 | 81.2 | 27.3 | 40 | WSW | 20.0? | 8.9? | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.54 | 750.2 | 30.01 | 762.2 | 89.1 | 31.7 | 23 | N | | | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.90 | 759.5 | 29.94 | 760.5 | 80.3 | 26.8 | 74 | WNW | 10.0 | 4.5 | | | 0 | | | 0 | 0 | Dust-whirl | |
| Poona | 27.90 | 708.6 | 29.87 | 758.6 | 88.5 | 31.4 | 29 | W | | | | | 0 | | | 0 | 0 | Blue sky | |
| Lahore | 29.26 | 743.2 | 30.02 | 762.4 | 76.1 | 24.5 | 33 | NW | 2.5 | 1.1 | | | 0 | | | 0 | 0 | Misty | |
| Belgaum | 27.42 | 696.4 | 29.92 | 760.0 | 84.8 | 29.3 | 55 | W | 16.0 | 7.2 | | | | | | | | | |
| Bangalore | | | | | | | | | | | | | | | | 0 | 0 | | |
| Roorkee | 29.08 | 738.7 | 30.00 | 761.9 | 75.2 | 24.0 | 43 | Calm | 2.4 | 1.1 | | | | | | 0 | 0 | | |
| Agra | 29.40 | 746.6 | 29.97 | 761.2 | 77.2 | 25.1 | 21 | W | | | | | | | | | | | |
| Trichinopoly | | | | | | | | | | | | | | | | 0 | 0 | Blue sky | |
| Nagpur | 28.90 | 734.0 | 29.93 | 760.1 | 89.5 | 31.9 | 22 | Calm | 3.2 | 1.4 | | | | | | | | | |
| Madras | | | | | | | | | | | | | | | | 0 | 0 | Blue sky | |
| Lucknow | 29.61 | 752.1 | 29.99 | 761.7 | 77.8 | 25.4 | 40 | NW | 4.2 | 1.9 | | | | | | 0 | 0 | D. clouds | |
| Allahabad | 29.69 | 754.2 | 30.01 | 762.2 | 76.7 | 24.8 | 37 | Calm | 1.3 | 0.6 | | | 3 | W | | 0 | 0 | Blue sky | |
| Patna | 29.79 | 756.6 | 29.97 | 761.2 | 81.7 | 27.6 | 26 | W | 1.1 | 0.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.94 | 709.8 | 29.97 | 761.2 | 76.8 | 24.9 | 19 | NW | 3.7 | 1.6 | | | 0 | | | 0 | 0 | D. clouds | |
| Cuttack | 29.87 | 758.6 | 29.95 | 760.7 | 84.5 | 29.2 | 62 | SSW | 6.5 | 2.9 | | | 5 | | | 0 | 0 | Overcast | |
| Calcutta (Alipore) | 29.98 | 761.4 | 30.00 | 761.9 | 80.7 | 27.1 | 74 | SW | 19.0 | 8.5 | | | 10 | | W | 0 | 0 | Blue sky | |
| Goalpara | 29.55 | 750.4 | 29.94 | 760.4 | 77.8 | 25.4 | 41 | Calm | 2.4 | 1.1 | | | 0 | | | 0 | 0 | Misty | |
| Chittagong | 29.92 | 760.0 | 30.02 | 762.4 | 77.1 | 25.1 | 86 | Calm | 4.3 | 1.9 | | | 0 | | | 0 | 0 | | |
| Sibsagar | 29.74 | 755.3 | 30.08 | 764.2 | 63.9 | 17.7 | 84 | ENE | 6.8 | 3.0 | | | 6 | SW | SW | 0.15 | 3.8 | D. clouds | |
| Rangoon | | | | | | | | | | | | | | | | 0 | 0 | Blue sky | |
| Jubbulpore | 28.63 | 727.1 | 29.99 | 761.7 | 83.5 | 28.6 | 21 | NE | 4.0 | 1.8 | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.02 | 737.2 | 29.44 | 747.7 | 51.3 | 10.7 | 69 | SE | 3.1 | 1.4 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 29.30 | 744.3 | 29.41 | 747.1 | 56.7 | 13.7 | 55 | W | 4.3 | 1.9 | ..... | ..... | 2 | NW | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Vicenza | 29.27 | 743.5 | 29.47 | 748.4 | 58.5 | 14.7 | 53 | E | 1.3 | 0.6 | ..... | ..... | 5 | E | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.25 | 717.6 | 29.57 | 751.1 | 66.6 | 19.2 | 8 | W | ..... | ..... | 8 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Prof. Trionfini Carlo. |
| Milan | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 28.76 | 730.5 | 29.84 | 752.8 | 66.7 | 19.3 | 10 | NNW | 20.6 | 9.2 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 27.79 | 705.9 | 29.63 | 752.6 | 66.6 | 19.2 | 6 | NW | ..... | ..... | 6 | ..... | 1 | NW | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.50 | 749.2 | 29.72 | 754.9 | 56.3 | 13.5 | 81 | E | ..... | ..... | 6 | ..... | 3 | WNW | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.53 | 750.1 | 29.71 | 754.5 | 60.6 | 15.9 | 60 | S | 5.6 | 2.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.33 | 741.9 | 29.65 | 753.0 | 70.3 | 21.3 | 22 | WSW | ..... | ..... | 8 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.42 | 747.3 | 29.68 | 753.9 | 61.7 | 16.5 | 58 | SW | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 29.61 | 752.1 | 29.70 | 754.3 | 59.0 | 15.0 | 68 | E | 5.6 | 2.5 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 29.48 | 748.7 | 29.58 | 750.0 | 64.0 | 17.8 | 55 | SW | 45.4 | 20.3 | ..... | ..... | 8 | NE | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.06 | 712.7 | 29.58 | 751.4 | 58.1 | 14.5 | 48 | SSW | ..... | ..... | 6 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.60 | 751.7 | 29.71 | 754.6 | 63.0 | 17.2 | 62 | NE | ..... | ..... | 2 | ..... | 4 | S | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.55 | 750.5 | 29.72 | 755.0 | 59.9 | 15.6 | 62 | WSW | 9.8 | 4.4 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U | 29.61 | 752.2 | 29.82 | 757.4 | 62.2 | 16.8 | 64 | SW | ..... | ..... | 2 | ..... | 5 | SW | ..... | 0.024 | 0.6 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 60.4 | 15.8 | 41 | WSW | 4.8 | 1.9 | ..... | ..... | 3 | N | ..... | 0.130 | 3.3 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.70 | 754.3 | 29.89 | 759.2 | 58.6 | 14.7 | 60 | NW | ..... | ..... | 6 | ..... | 7 | NW | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 28.95 | 735.3 | 29.84 | 758.0 | 59.7 | 15.4 | 75 | SW | 8.1 | 3.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.58 | 751.4 | 29.84 | 757.9 | 63.7 | 17.6 | 52 | WSW | 2.5 | 1.1 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.71 | 754.6 | 29.78 | 756.5 | 63.5 | 17.5 | 57 | SW | ..... | ..... | 4 | ..... | 4 | NW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.26 | 743.6 | 29.83 | 757.7 | 58.1 | 14.5 | 68 | ESE | 4.9 | 2.2 | ..... | ..... | 3 | SE | ..... | 0 | 0 | ..... | Prof. F. Brioschi |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.8 ft.; Mondovi, 556 m., or 1,824.4 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 30.09 | 764.3 | 30.16 | 766.0 | 35.0 | 1.7 | 59 | NNW | 10.2 | 4.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| Tokei (Yeddo) University | 30.03 | 762.7 | 30.14 | 765.4 | 35.5 | 1.9 | 54 | NNW | 14 | 6.3 | ..... | ..... | ..... | ..... | ..... | 0.01 | 0.3 | Clear | Prof. P. V. Veeder. |

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | 25.05 | 636.2 | 29.83 | 757.6 | 68.0 | 20.0 | 36 | N | 0.9 | 0.4 | ..... | 5ck | 5ck | N | ..... | 0 | 0 | Covered | L. Castillo, A. E. |
| Guadalajara | 25.02 | 635.6 | 30.07 | 763.6 | 46.8 | 8.2 | 50 | SW | 0.9 | 0.4 | ..... | 0 | 8 | ..... | SW | 0 | 0 | Cloudy | Prof. L. Perez. |
| Guanajuato | 23.64 | 600.6 | 29.87 | 758.7 | 58.3 | 14.6 | 45 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 57.9 | 14.4 | 38 | WNW | 0.9 | 0.4 | ..... | 8cs | ..... | SW | ..... | 0 | 0 | Cloudy | Prof. M. Leal. |
| Mexico | 23.03 | 584.9 | 30.03 | 762.7 | 60.8 | 16.0 | 41 | SW | 7.8 | 3.5 | ..... | 0 | 10km | ..... | ..... | 0 | 0 | Covered | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 48.4 | 9.1 | 45 | SW | 0.9 | 0.4 | ..... | 8c | 0 | SW | ..... | 0 | 0 | Cloudy | M. V. de Leon, M. E. |
| Puebla | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 29.84 | 757.8 | 29.85 | 758.1 | 68.9 | 20.5 | 93 | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barreda, M. D. |
| Vera-Cruz | 29.87 | 758.6 | 29.90 | 759.3 | 71.6 | 22.0 | 82 | Calm | 0 | 0 | ..... | 2c | 48k | ..... | ..... | 0 | 0 | Cloudy | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 51.8 | 11.0 | 46 | NW | 1.8 | 0.8 | ..... | 3c | 0 | ..... | ..... | 0 | 0 | ½cloudy | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.32 | 592.4 | 30.10 | 764.5 | 53.2 | 11.8 | 55 | NNE | 2.2 | 1.0 | ..... | 0 | 2s | ..... | WNW | 0 | 0 | Foggy | P. Spina, [M. M. D. D. |
| Morelia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Tena, F. L. Parram |

NOTE.—The elevation of Aguascalientes is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.93 | 760.2 | 29.93 | 760.2 | 46.4 | 8.0 | ..... | NW | ..... | ..... | 6 | ..... | ..... | ..... | ..... | 0.039 | 1.0 | ..... | |
| Groningen | 29.56 | 750.9 | 29.62 | 752.3 | 41.2 | 5.1 | ..... | NW | ..... | ..... | 6 | ..... | ..... | ..... | ..... | 0.205 | 5.2 | ..... | |
| Helder | 29.74 | 755.5 | 29.74 | 755.5 | 39.6 | 4.2 | ..... | WNW | ..... | ..... | 7 | ..... | ..... | ..... | ..... | 0.114 | 2.9 | ..... | |
| Hellevoetsluis | 29.87 | 758.6 | 29.87 | 758.6 | 43.0 | 6.1 | 68 | NW | ..... | ..... | 6 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.73 | 755.1 | 29.78 | 756.3 | 45.5 | 7.5 | 61 | WNW | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0.039 | 1.0 | Cloudy | H. v d Brink. |

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

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

| STATIONS | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.30 | 744.3 | 29.36 | 745.7 | 34 9 | 1.6 | 71 | N | 31.3 | 14.0 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.14 | 740.2 | 29 18 | 741.2 | 29.8 | — 1.2 | 80 | S | 9 | 4 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.06 | 738.2 | 29.21 | 742.0 | 35.4 | 1.9 | 36 | N | 7 | 3 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.08 | 738.7 | 29.13 | 739.8 | 22.3 | — 5.4 | 71 | Calm | 0 | 0 | ..... | ..... | 1 | ..... | ..... | 0.079 | 2.0 | ..... | |

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

## PORTUGUESE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.27 | 768.8 | 30.46 | 773.7 | 59.4 | 15.2 | 93 | ESE | 7.4 | 3.3 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.24 | 742.6 | 30.24 | 768.1 | 70.7 | 21.5 | 33 | ENE | 5.6 | 2.5 | ..... | ..... | 4 | ENE | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos |
| Funchal, (Madeira) | 30.24 | 768.0 | 30.32 | 770.2 | 68.9 | 20.5 | 55 | SW | 8.1 | 3.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.91 | 759.6 | 30.26 | 768.6 | 66.6 | 19.2 | 47 | NE | 7.4 | 3.3 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.41 | 772.3 | 30.49 | 774.5 | 65.5 | 18.6 | 66 | SE | 6.9 | 3.1 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |

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

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd't. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd t. |
| Mindello, Mozambique, Mozambique | 29.76 | 755.8 | 29.76 | 755.9 | 84.2 | 29.0 | ..... | W | ..... | ..... | 1 | ..... | 9 | ..... | W | 1 | ..... | Blue sky | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Sado, Bissao, Senegambia | 30.02* | 762.5* | 30.03* | 762.8* | 84.2 | 29.0 | ..... | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 2 | S | Blue sky | A. N. P. Sampaio, Com'd't. |
| Sá'da Bandeira, St. Paul de Loanda, Lower Guinea | 29.82 | 757.5 | 29.83 | 757.7 | 85.1 | 29.5 | ..... | WNW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreira, dos Amas, Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 28.43 | 722.0 | 28.85 | 732.8 | 35.1 | 1.7 | 91 | WSW | 29 | 13 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing | Astronomical Obs. |
| Wilna | 28.43 | 722.0 | 28.85 | 732.7 | 35.1 | 1.7 | 88 | S | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Astronomical Obs. |
| Dorpat | 28.46 | 722.9 | 28.71 | 729.1 | 30.0 | — 1.1 | 96 | W | 11 | 5 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing | Prof. Dr. Weihrauch. |
| St. Petersburg | 28.57 | 726.7 | 28.59 | 726.1 | 35.2 | 1.8 | 69 | SSE | 9 | 4 | ..... | ..... | 9ks | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 28.30 | 718.9 | 28.62 | 727.0 | 30.7 | — 0.7 | 100 | NW | 13 | 6 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Ch. Forsten. |
| Kieff | 28.54 | 725.0 | 29.18 | 741.1 | 39.9 | 4.4 | 55 | SW | 22 | 10 | ..... | ..... | 9ks;c;ck | ..... | ..... | ..... | ..... | Dust-haze | Physical Cabinet. |
| Nikolaiev | 29.43 | 747.5 | 29.50 | 749.3 | 45.0 | 7.2 | 42 | SSE | 22 | 10 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.67 | 753.7 | 29.69 | 754.2 | 49.3 | 9.6 | 91 | S | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 28.52 | 724.4 | 29.08 | 738.6 | 33.4 | 0.8 | 68 | S | 22 | 10 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.32 | 741.6 | 29 52 | 749.9 | 38.8 | 3.8 | 90 | SSW | 13 | 6 | ..... | ..... | 10n | ..... | ..... | Blank | Blank | Light clouds | Meteorological Obs. |
| Archangel | 28.81 | 731.8 | 28.83 | 732 3 | 33.8 | 1 0 | 92 | SE | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.50 | 723.8 | 29.89 | 759.2 | 61.9 | 16.6 | 32 | E | 4 | 2 | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.03 | 762.7 | 29.95 | 760.6 | 41.0 | 5.0 | 63 | SSE | 2 | 1 | ..... | ..... | 7cs | ..... | ..... | ..... | ..... | Light clouds | Sebastianof. |
| Kasan | 29.29 | 743.9 | 29.56 | 750.9 | 30.4 | — 0.9 | 83 | S | 22 | 10 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.77 | 730.8 | 29.74 | 755.5 | 32.2 | 0.1 | 74 | WSW | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.57 | 751.1 | 29.81 | 757.1 | 48.0 | 8.9 | 88 | NE | 4 | 2 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.28 | 718.2 | 29.98 | 761.5 | 52.7 | 11.5 | 58 | W | 2 | 1 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.98 | 761.5 | 30.56 | 776.1 | 13.1 | —10.5 | 83 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs |
| Yeniseisk | 30.11 | 764.7 | 30.45 | 773.4 | 26.2 | — 3.2 | 79 | SW | 2 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Krotkowo* | 29.18 | 741.1 | 29.66 | 753.4 | 31.1 | — 0.5 | 88 | SSE | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Peking, (China) | 30.17 | 766.4 | 30.32 | 770.0 | 47.5 | 8.6 | 48 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 28.05 | 712.4 | 30.24 | 768.0 | 20.7 | — 6.3 | 61 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Snowing | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 8.2 | —13.2 | 100 | W | 16 | 7 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 30.02 | 762.5 | 30.13 | 765.2 | 57.2 | 14 | 67 | NE | 1.6 | 0.70 | ..... | 3cs | 0 | NW | ..... | 0 | 0 | ..... | Ar.tonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.39 | 771.8 | 30.44 | 773.2 | 57.2 | 14.0 | 81 | NW | 3.1 | 1.39 | ..... | ..... | ..... | ..... | ..... | 0.236 | 6.0 | Covered | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.37 | 695.1 | ..... | ..... | 56.8 | 13.8 | 69 | NE | 9.1 | 4.08 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 28.02 | 711.8 | 30.21 | 767.4 | 68.9 | 20.5 | 32 | NW | 3.0 | 1.33 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |
| Murcia, Met. Obs'y | 30.03 | 762.7 | 30.17 | 766.4 | 77.0 | 25.0 | 41 | SW | 1.1 | 0.50 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.39 | 746.6 | 30.29 | 769.3 | 62.1 | 16.7 | 60 | NE | 13.1 | 5.83 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 30.03 | 762.6 | 30.09 | 764.4 | 68.5 | 20.3 | 81 | ESE | 6.5 | 2.9 | ..... | 7c;ck | 0 | SW | ..... | 0 | 0 | Fair | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 30.16 | 766.1 | 30.26 | 768.6 | 65.5 | 18.6 | 72 | W | 6.8 | 3.0 | ..... | 1 | 2 | W | W | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W.I. | 29.93 | 760.2 | 30.02 | 762.5 | 74.5 | 23.6 | 86 | E | 0 | 0 | ..... | 6k | 2kn | E | E | 1.614 | 41.00 | Cloudy | Leonardo de Tejeda, Chief of Engineers. |

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

## SWEDISH SERIES.

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

| STATIONS | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 28.95 | 735.4 | 28.99 | 736.4 | 22.5 | — 5.3 | ..... | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 28.95 | 735.2 | 29.00 | 736.5 | 28.0 | — 2.2 | 61 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 28.98 | 736.0 | 29.03 | 737.3 | 31.3 | — 0.4 | 78 | N | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 28.82 | 732.1 | 29.00 | 736.6 | 28.4 | — 2.0 | 84 | NNW | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0.024 | 0.6 | ..... | |
| Wisby | 28.87 | 733.2 | 28.93 | 734.7 | 33.8 | 1.0 | 72 | ENE | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0.055 | 1.4 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 28.95 | 735.2 | 29.02 | 737.1 | 30.6 | — 0.8 | 73 | NNW | 13.2 | 5.9 | ..... | ..... | 2 | ..... | N | 0.001 | 0.02 | ..... | Dr. Hildebrandsson. |

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

## SWISS SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.64 | 727.5 | 30.08 | 764.1 | 49.5 | 9.7 | 67 | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.035 | 0.9 | Covered | The Observatory. |
| Zurich | 28.25 | 717.6 | 29.93 | 760.2 | 42.1 | 5.6 | 94 | W | ..... | ..... | 6 | ..... | 10 | ..... | W | 0.110 | 2.8 | Raining | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +2.4 mm.; Thermometer, +3.1 cent.; Relative Humidity, —6 per cent.

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

## TURKISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.73 | 755.1 | 51.1 | 10.6 | 87 | SW | 4 | 2.0 | ..... | ..... | 10 | ..... | SW | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stéfanidès. |
| Valona | ..... | ..... | 29.75 | 755.6 | 58.6 | 14.8 | ..... | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0.39 | 10. | Clear | A. Bertrand. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.90 | 759.4 | 30.01 | 762.3 | 64.2 | 17.9 | 63 | WSW | ..... | ..... | 1 | ..... | 9c;n | ..... | W;SE | 0 | 0 | D. clouds | Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | W. R. Bigg. |
| *Chatham, N. B | 29.94 | 760.5 | 30.25 | 768.3 | 37 | 2.8 | ..... | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | G. A. Blair. |
| Charlottetown, P. E. Island | ..... | ..... | 29.80 | 756.9 | 36 | 2.2 | 97 | SW | 3 | 1.3 | ..... | ..... | Fog | ..... | Calm | 0.14 | 3.6 | Foggy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.78 | 756.4 | 29.82 | 757.4 | 36 | 2.2 | 94 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.020 | 0.51 | Cloudy | James Smith, M. A. |
| Dalhousie, N. B | 29.97 | 761.2 | 30.17 | 766.3 | 36.5 | 2.5 | 90 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | H. A. Johnson. |
| Esquimault, B. C | 29.80 | 756.9 | 29.83 | 757.7 | 33.6 | 0.9 | 98 | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.20 | 5.1 | Threatening | W. H. Bevis. |
| *Father Point, Quebec | 30.30 | 769.6 | 30.34 | 770.6 | 42.7 | 5.9 | 92 | SE | ..... | ..... | ..... | 3k | c | ..... | ..... | 0 | 0 | Cloudy | J. McWilliams. |
| Fredericton, N. B | 29.87 | 758.7 | 29.93 | 760.2 | 30 | — 1.1 | 93 | W | 7 | 3.1 | ..... | ..... | 10n | ..... | N | 0.16 | 4.1 | Light snow | Prof. Harrison. |
| *Fort Garry Manitoba | 29.83 | 757.7 | 29.89 | 759.2 | 36.6 | 2.2 | 93 | W | 1 | 0.4 | ..... | ..... | 10s | ..... | ..... | 0.13 | 3.3 | Cloudy | James Stewart. |
| Goderich, Ontario | 29.66 | 753.1 | 29.91 | 759.7 | 28 | — 2.2 | 100 | NE | 17 | 7.6 | ..... | 5k | 5n | NE | NE | 0.240 | 6.10 | Cloudy | H. J. Strang, M. A. |
| Granton, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Grant. |
| *Halifax, N. S | 29.12 | 739.6 | 30.27 | 768.8 | 33 | 0.6 | 100 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | F. Allison, M. A. |
| Hamilton, Ontario | 29.71 | 754.6 | 29.85 | 758.2 | 35 | 1.7 | 99 | E | 4 | 1.8 | ..... | ..... | Fog | ..... | ..... | 0.151 | 3.84 | Foggy | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.89 | 759.2 | 30.28 | 769.1 | 36.2 | 2.3 | 94 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | E. Weedon. |
| *Kingston, Ontario | 30.13 | 765.3 | 30.16 | 766.1 | 39 | 3.9 | 91 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.90 | 759.4 | 30.24 | 768.1 | 35 | 1.7 | 90 | SW | 1 | 0.4 | ..... | 0 | Sm'e | ..... | SW | 0 | 0 | Clear | C. H. Rigby. |
| *Montreal, Quebec | 29.84 | 757.9 | 29.88 | 758.9 | 35 | 1.7 | ..... | S | 5 | 2.2 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Raining | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.91 | 759.7 | 30.12 | 765.0 | 38 | 3.3 | 87 | SW | ..... | ..... | ..... | 8c | Sm'e | W | ..... | Inap. | Inap. | Cloudy | Rev. R. Mosley. |
| Peterboro, Ontario | 29.55 | 750.9 | 30.29 | 769.4 | 29 | — 1.7 | 99 | E | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.50 | 749.3 | 30.27 | 768.8 | 34.7 | 1.5 | 89 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Smoky | H. Morgan. |
| Port Hastings, N. S | 29.56 | 750.8 | 30.29 | 769.4 | 32 | 0.0 | 90 | N | 4 | 1.8 | ..... | 5c | 0 | SW | ..... | 0 | 0 | Fair | Peter Grant. |
| Port Stanley, Ontario | 29.83 | 757.7 | 29.88 | 758.9 | 35.4 | 1.9 | ..... | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0.40 | 10.2 | Raining | M. Payne. |
| *Quebec, Quebec | 29.59 | 751.6 | 30.27 | 768.8 | 32 | 0.0 | 92 | E | 1 | 0.4 | ..... | 5ck | Fog | W | ..... | 0 | 0 | Foggy | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.71 | 754.6 | 30.04 | 763.0 | 36 | 2.2 | 95 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.29 | 7.4 | Clear | W. H. McIntyre. |
| St. Andrews, N. B | 29.77 | 756.1 | 30.24 | 768.1 | 31 | — 0.6 | 84 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | Inap | Inap | Clear | Dr. Gove. |
| St. John, N. B | 29.84 | 757.9 | 29.89 | 759.2 | 37 | 2.8 | 89 | NW | 1 | 0.4 | ..... | 0 | 5ks | ..... | ..... | 0.02 | 0.5 | Cloudy | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.72 | 754.9 | 29.90 | 759.4 | 36 | 2.2 | 90 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | K. Stewart. |
| Stayner, Ontario | 29.51 | 749.5 | 30.26 | 768.6 | 35 | 1.7 | 93 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | R. J. Cole. |
| Stratford, Ontario | 29.48 | 748.8 | 30.30 | 769.6 | 29 | — 1.7 | 96 | Calm | 0 | 0 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Fair | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.96 | 735.6 | 30.30 | 769.6 | 32.0 | 0.0 | 92 | W | 4 | 1.8 | ..... | 3cs | 7s | SW | ..... | 0.134 | 3.40 | Cloudy | T. C. Hill. |
| *Toronto, Ontario | 29.85 | 758.2 | 29.88 | 758.9 | 38 | 3.3 | 94 | S | 7 | 3.1 | ..... | ..... | 10n | ..... | ..... | Inap. | Inap. | Cloudy | Magnetic Observatory. |
| Windsor, N. S | 29.88 | 758.9 | 30.30 | 769.6 | 37 | 2.8 | 89 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. John E. Oram. |
| Woodstock, Ontario | 29.25 | 742.9 | 29.35 | 745.5 | 39.0 | 3.9 | 100 | W | 5 | 2.2 | ..... | ..... | 10n | ..... | ..... | 0.11 | 2.8 | Fair | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 36.0 | 2.2 | 100 | S | ..... | ..... | ..... | 10k | 10s | ..... | ..... | 0 | 0 | Cloudy | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182ft. or 360.3 m.

UNITED STATES SERIES.

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

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

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Upper. 0–10 | Clouds. Amount. Low'r. 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.98 | 761.5 | 30.22 | 767.6 | 40 | 4.4 | 82 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | ..... | 0.06 | 1.5 | Smoky | |
| Alpena, Michigan | 29.54 | 750.3 | 30.22 | 767.6 | 32 | 0.0 | 89 | N | 4 | 1.8 | ..... | 5c | 0 | N | ..... | 0 | 0 | Fair | |
| Atlantic City, New Jersey | 30.26 | 768.6 | 30.28 | 769.1 | 45 | 7.2 | 92 | NW | 4 | 1.8 | ..... | 8cs | Haze | NW | Calm | 0.09 | 2.3 | Fair | |
| Augusta, Georgia | 30.09 | 764.3 | 30.28 | 769.1 | 50 | 10.0 | 86 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Smoky | |
| Baltimore, Maryland | 30.23 | 767.8 | 30.28 | 769.1 | 49 | 9.4 | 71 | N | 2 | 0.9 | ..... | 5c | Sm'e | Calm | Calm | Inap. | Inap. | Smoky | |
| Barnegat, New Jersey | 30.26 | 768.6 | 30.28 | 769.1 | 46 | 7.8 | 85 | NW | 8 | 3.6 | ..... | 5c | 0 | W | ..... | 0.09 | 2.3 | Fair | |
| Bismarck, Dakota | 27.62 | 701.5 | 29.48 | 748.8 | 42 | 5.6 | 100 | NE | 14 | 6.3 | ..... | ..... | 10n | ..... | Calm | 0.02 | 0.5 | Light rain | |
| Boise City, Idaho | 27.48 | 698.0 | 30.36 | 771.1 | 27 | — 2.8 | 66 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.6 | Clear | |
| Boston, Massachusetts | 30.00 | 762.0 | 30.16 | 766.1 | 45 | 7.2 | 69 | W | 10 | 4.5 | ..... | 0 | Haze | ..... | ..... | 0.04 | 1.0 | Clear | |
| Brackettville, Texas | 28.50 | 723.9 | 29.48 | 748.8 | 66 | 18.9 | 78 | E | 8 | 3.6 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 28.52 | 724.4 | 29.49 | 749.0 | 48 | 8.9 | 85 | SE | 16 | 7.2 | ..... | ..... | 10s | ..... | SE | 0.47 | 11.9 | Cloudy | |
| Brownsville, Texas | 29.70 | 754.4 | 29.77 | 756.1 | 71 | 21.7 | 85 | SE | 18 | 8.0 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Buffalo, New York | 29.55 | 750.6 | 30.27 | 768.8 | 40 | 4.4 | 83 | S | 2 | 0.9 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 41 | 5.0 | 75 | NW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.90 | 759.4 | 30.17 | 766.3 | 43 | 6.1 | 66 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.06 | 1.5 | Clear | |
| Cairo, Illinois | 29.59 | 751.6 | 29.97 | 761.2 | 63 | 17.2 | 78 | S | 14 | 6.3 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Camp Grant, Arizona | 25.05 | 636.3 | 29.85 | 758.2 | 35 | 1.7 | 70 | NW | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | 26.74 | 679.2 | 30.23 | 767.8 | 27 | — 2.8 | 64 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.45 | 697.2 | 30.02 | 762.5 | 31 | — 0.6 | 79 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.27 | 768.8 | 30.28 | 769.1 | 59 | 15.0 | 88 | W | 9 | 4.0 | ..... | 5k | 5s | W | Calm | 0 | 0 | Cloudy | |
| Cape Henry, Virginia | 30.22 | 767.6 | 30.25 | 768.3 | 57 | 13.9 | 81 | W | 4 | 1.8 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 30.27 | 768.8 | 30.29 | 769.4 | 57 | 13.9 | 87 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape May, New Jersey | 30.24 | 768.1 | 30.27 | 768.8 | 56 | 10.0 | 71 | NE | 4 | 1.8 | ..... | 2c | 0 | W | ..... | 0.02 | 0.5 | Fair | |
| Charleston, South Carolina | 30.24 | 768.1 | 30.30 | 769.6 | 58 | 14.4 | 88 | SW | 2 | 0.9 | ..... | 8cs | 0 | SW | ..... | 0 | 0 | Fair | |
| Cheyenne, Wyoming | 23.43 | 595.1 | 29.37 | 746.0 | 23 | — 5.0 | 100 | N | 52 | 23.2 | ..... | ..... | 10n | ..... | Calm | 0.05 | 1.3 | Snowing | |
| Chicago, Illinois | 29.26 | 743.2 | 29.95 | 760.7 | 46 | 7.8 | 77 | SE | 9 | 4.0 | ..... | 2cs | 2s | Calm | SE | 0 | 0 | Fair | |
| Cincinnati Ohio | 29.47 | 748.5 | 30.11 | 764.8 | 52 | 11.1 | 73 | SE | 2 | 0.9 | ..... | 9k | Fog | W | Calm | 0 | 0 | Cloudy | |
| Clevelana, Ohio | 29.51 | 749.5 | 30.25 | 768.3 | 43 | 6.1 | 75 | SE | 8 | 3.6 | ..... | 8c;cs | 0 | W; Calm | ..... | 0 | 0 | Fair | |
| Concho, Texas | 27.79 | 705.8 | 29.44 | 747.8 | 50 | 10.0 | 70 | NW | 20 | 8.9 | ..... | 8k | 0 | S | ..... | 0 | 0 | Cloudy | |
| Corsicana, Texas | 29.18 | 741.2 | 29.62 | 752.3 | 67 | 19.4 | 79 | S | 20 | 8.9 | ..... | ..... | 10s | ..... | S | Inap. | Inap. | Cloudy | |
| Davenport, Iowa | 29.17 | 740.9 | 29.79 | 756.7 | 57 | 13.9 | 81 | SE | 20 | 8.9 | ..... | 4ck | 2s | SE | SE | 0 | 0 | Fair | |
| Deadwood, Dakota | 24.99 | 634.7 | ..... | ..... | 29 | — 1.7 | 100 | N | 2 | 0.9 | ..... | ..... | 10n | ..... | N | 0.90 | 22.9 | Heavy snow | |
| Denison, Texas | 28.84 | 732.5 | 29.60 | 751.8 | 65 | 18.3 | 78 | S | 20 | 8.9 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Denver, Colorado | 24.16 | 613.6 | 29.38 | 746.2 | 28 | — 2.2 | 88 | NW | 24 | 10.7 | ..... | ..... | 10n | ..... | Calm | 0.40 | 10.2 | Light snow | |
| Detroit, Michigan | 29.51 | 749.5 | 30.20 | 767.1 | 42 | 5.6 | 83 | SW | 2 | 0.9 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair | |
| Dodge City, Kansas | 26.70 | 678.2 | 28.89 | 733.8 | 43 | 6.1 | 21 | S | 24 | 10.7 | ..... | 0 | 5s | ..... | SW | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.12 | 739.6 | 29.80 | 756.9 | 51 | 10.6 | 59 | S | 7 | 3.1 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Duluth, Minnesota | 29.15 | 740.4 | 29.83 | 757.7 | 43 | 6.1 | 92 | NE | 22 | 9.8 | ..... | ..... | 10s | ..... | NE | 0.05 | 1.3 | Cloudy | |
| Eagle Pass, Texas | 28.81 | 731.8 | 29.52 | 749.8 | 64 | 17.8 | 94 | SW | 4 | 1.8 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| Eastport, Maine | 29.84 | 757.9 | 29.91 | 759.7 | 36 | 2.2 | 95 | W | 8 | 3.6 | ..... | 5k | 5s | NW | W | 0.16 | 4.1 | Cloudy | |
| Erie, Pennsylvania | 29.52 | 749.8 | 30.26 | 768.6 | 45 | 7.2 | 84 | SE | 8 | 3.6 | ..... | 5c | Fog | ..... | ..... | 0 | 0 | Fair | |
| Escanaba, Michigan | 29.46 | 748.3 | 30.14 | 765.5 | 31 | — 0.6 | 79 | N | 5 | 2.2 | ..... | 5c | 0 | N | ..... | 0 | 0 | Fair | |
| Florence, Arizona | 28.29 | 718.6 | 29.89 | 759.2 | 40 | 4.4 | 56 | N | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | 23.86 | 606.0 | 29.86 | 758.4 | 25 | — 3.9 | 30 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | |
| Fort Craig, New Mexico | 25.29 | 642.4 | ..... | ..... | 29 | — 1.7 | 45 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.05 | 737.9 | 29.56 | 750.8 | 65 | 18.3 | 63 | S | 22 | 9.8 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Fort Griffin, Texas | 28.39 | 721.1 | 29.62 | 752.3 | 55 | 12.8 | 28 | NW | 12 | 5.4 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Fort St. Michael, Alaska | 29.75 | 755.6 | 29.78 | 756.4 | — 3 | —19.4 | 100 | NE | 7 | 3.1 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Fort Sill, Indian Territory | 28.34 | 719.8 | 29.40 | 746.7 | 66 | 15.3 | 45 | SW | 12 | 5.4 | ..... | ..... | 10s | ..... | S | 0.02 | 0.5 | Cloudy | |
| Galveston, Texas | 29.76 | 755.9 | 29.80 | 756.9 | 65 | 18.3 | 94 | S | 10 | 4.5 | ..... | 0 | 5ks | ..... | S | 0 | 0 | Fair | |
| Grand Haven, Michigan | 29.41 | 747.0 | 30.07 | 763.8 | 45 | 7.2 | 76 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Indianapolis, Indiana | 29.26 | 743.2 | 30.03 | 762.7 | 55 | 12.8 | 87 | SE | 10 | 4.5 | ..... | 0 | 5s | ..... | S | Inap. | Inap. | Fair | |
| Indianola, Texas | 29.75 | 755.6 | 29.77 | 756.1 | 68 | 20.0 | 90 | S | 19 | 8.5 | ..... | 2k | 0 | S | ..... | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.47 | 723.1 | 29.55 | 750.6 | 63 | 17.2 | 78 | SW | 17 | 7.6 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Threatening | |
| Jacksonville, Florida | 30.20 | 767.1 | 30.22 | 767.6 | 58 | 14.4 | 88 | E | 4 | 1.8 | ..... | 10k | 0 | SE | ..... | 0 | 0 | Cloudy | |
| Keokuk, Iowa | 29.12 | 739.6 | 29.71 | 754.6 | 57 | 13.9 | 87 | SE | 13 | 5.8 | ..... | 4c | 1s | Calm | Calm | 0 | 0 | Fair | |
| Key West, Florida | 30.06 | 763.5 | 30.10 | 764.5 | 69 | 20.6 | 80 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Kittyhawk, North Carolina | 30.23 | 767.8 | 30.25 | 768.3 | 57 | 13.9 | 75 | W | 13 | 5.8 | ..... | 0 | 2ks | ..... | W | 0 | 0 | Fair | |
| Knoxville, Tennessee | 29.22 | 742.2 | 30.24 | 768.1 | 49 | 9.4 | 85 | NE | 1 | 0.4 | ..... | 8ck | Sm'e | S | ..... | Inap. | Inap. | Cloudy | |
| La Crosse, Wisconsin | 29.06 | 738.1 | 29.78 | 756.4 | 53 | 11.7 | 67 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| La Mesilla, New Mexico | 25.90 | 657.8 | 30.05 | 763.3 | 45 | 7.2 | 60 | Calm | 0 | 0 | ..... | 0 | 8s | ..... | Calm | 0 | 0 | Cloudy | |
| Laredo, Texas | 29.23 | 742.4 | 29.56 | 750.8 | 67 | 19.4 | 89 | S | 12 | 5.4 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 28.66 | 728.0 | 29.46 | 748.3 | 60 | 15.6 | 77 | S | 18 | 8.0 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Los Angeles, California | 29.74 | 755.4 | 30.08 | 764.0 | 46 | 7.8 | 62 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | |
| Louisville, Kentucky | 29.52 | 749.8 | 30.08 | 764.0 | 57 | 13.9 | 69 | SE | 7 | 3.1 | ..... | 8c | Sm'e | Calm | Calm | 0 | 0 | Fair | |
| Lynchburg, Virginia | 29.56 | 750.8 | 30.26 | 768.6 | 47 | 8.3 | 77 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Maricopa Wells, Arizona | ..... | ..... | ..... | ..... | 51 | 10.6 | 46 | W | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.35 | 745.5 | 30.06 | 763.5 | 41 | 5.0 | 65 | SE | 4 | 1.8 | ..... | 8c | 0 | SE | ..... | 0 | 0 | Fair | |
| Mason, Texas | 28.03 | 711.9 | 29.72 | 754.9 | 63 | 17.2 | 78 | S | 16 | 7.2 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Memphis, Tennessee | 29.66 | 753.4 | 29.97 | 761.2 | 62 | 16.7 | 83 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Milwaukee, Wisconsin | 29.31 | 744.5 | 30.01 | 762.2 | 44 | 6.7 | 84 | SW | 12 | 5.4 | ..... | 2cs | 5s | ..... | SW | 0.03 | 0.8 | Fair | |
| Mobile, Alabama | 30.05 | 763.3 | 30.10 | 764.5 | 58 | 14.4 | 94 | SE | 5 | 2.2 | ..... | 8c | 0 | W | ..... | 0 | 0 | Fair | |
| Montgomery, Alabama | 29.94 | 760.5 | 30.17 | 766.3 | 56 | 13.3 | 74 | SE | 8 | 3.6 | ..... | 5ck | Haze | SW | Calm | 0 | 0 | Fair | |
| Morgantown, West Virginia | 29.18 | 741.2 | 30.27 | 768.8 | 42 | 5.6 | 66 | Calm | 0 | 0 | ..... | 10c | Sm'e | NW | ..... | 0.01 | 0.3 | Cloudy | |
| Mt. Washington, N. H. | 23.66 | 601 0 | 30.02 | 762.5 | 22 | — 5.6 | 100 | NW | 96 | 42.9 | ..... | ..... | Fog | ..... | NW | 0.55 | 14.0 | Foggy | |
| Nashville, Tennessee | 29.58 | 751.3 | 30.11 | 764.8 | 57 | 13.9 | 87 | E | 4 | 1.8 | ..... | 10k | 0 | S | ..... | 0.15 | 3.8 | Cloudy | |
| New Haven, Connecticut | 30.13 | 765.3 | 30.25 | 768.3 | 47 | 8.3 | 80 | NW | 2 | 0.9 | ..... | 0 | Haze | ..... | ..... | 0.11 | 2.8 | Clear | |
| New London, Connecticut | 30.17 | 766.3 | 30.22 | 767.6 | 44 | 6.7 | 92 | Calm | 0 | 0 | ..... | 0 | Fog | ..... | Calm | 0.05 | 1.3 | Clear | |
| New Orleans, Louisiana | 29.94 | 760.5 | 30.00 | 762.0 | 64 | 17.8 | 94 | SE | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.51 | 13.0 | Light rain | |
| Newport, Rhode Island | 30.13 | 765.3 | 30.18 | 766.6 | 43 | 6.1 | 75 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | Calm | 0.03 | 0.8 | Clear | |
| New York, New York | 30.08 | 764.0 | 30.26 | 768.6 | 47 | 8.3 | 77 | W | 1 | 0.4 | ..... | 0 | Fog | ..... | Calm | 0.01 | 0.3 | Clear | |
| Norfolk, Virginia | 30.21 | 767.3 | 30.27 | 768.8 | 55 | 12.8 | 87 | SW | 1 | 0.4 | ..... | Haze | Sm'e | ..... | ..... | 0 | 0 | Hazy | |
| North Platte, Nebraska | 26.31 | 668.3 | 28.73 | 729.7 | 47 | 8.3 | 48 | E | 16 | 7.2 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Olympia, Washington Ter. | 30.33 | 770.4 | 30.37 | 771.4 | 40 | 4.4 | 91 | S | 6 | 2.7 | ..... | 0 | 5ks | ..... | Calm | 0.19 | 4.8 | Fair | |
| Omaha, Nebraska | 28.31 | 719.1 | 29.31 | 744.5 | 62 | 16.7 | 72 | SE | 24 | 10.7 | ..... | 10k | 0 | SE | ..... | 0 | 0 | Threatening | |
| Oswego, New York | 29.94 | 760.5 | 30.27 | 768.8 | 46 | 7.8 | 69 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pembina, Dakota | 28.92 | 734.6 | 29.75 | 755.6 | 37 | 2.8 | 100 | N | 11 | 4.9 | ..... | ..... | 10n | ..... | E | 0.52 | 13.2 | Light rain | |
| Philadelphia, Pennsylvania | 30.25 | 768.3 | 30.30 | 769.6 | 50 | 10.0 | 71 | N | 6 | 2.7 | ..... | 1c | Sm'e | N | Calm | 0.09 | 2.3 | Clear | |
| Phœnix, Arizona | 28.84 | 732.5 | 30.71 | 780.0 | 40 | 4.4 | 39 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 16.99 | 431.5 | 29.20 | 741.7 | —18 | —27.8 | 100 | NW | 64 | 28.6 | ..... | ..... | 10n | ..... | Calm | 0.96 | 24.4 | Light snow | |
| Ploche, Nevada | 24.03 | 610.4 | 29.89 | 756.9 | 17 | — 8.3 | 67 | N | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Pittsburg, Pennsylvania | 29.42 | 747.3 | 30.27 | 768.8 | 39 | 3.9 | 91 | N | 1 | 0.4 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Port Huron, Michigan | 29.53 | 750.0 | 30.22 | 767.6 | 41 | 5.0 | 82 | E | 4 | 1.8 | ..... | 8c | 2ks | W | Calm | 0 | 0 | Cloudy | |
| Portland, Maine | 30.04 | 763.0 | 30.09 | 764.3 | 46 | 7.8 | 62 | W | 9 | 4.0 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Portland, Oregon | 30.38 | 771.6 | 30.50 | 774.7 | 35 | 1.7 | 90 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Prescott, Arizona | 24.71 | 627.6 | 30.07 | 763.8 | 28 | — 2.2 | 43 | N | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Punta Rassa, Florida | 30.13 | 765.3 | 30.15 | 765.8 | 65 | 18.3 | 73 | NE | 8 | 3.6 | ..... | 10k | Haze | Calm | Calm | 0 | 0 | Cloudy | |
| Red Bluff, California | 30.01 | 762.2 | 30.39 | 771.9 | 38 | 3.3 | 72 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rochester, New York | 29.62 | 752.3 | 30.26 | 768.6 | 41 | 5.0 | 87 | W | 4 | 1.8 | ..... | 2c | Haze | Calm | Calm | Inap. | Inap. | Fair | |
| Roseburg, Oregon | 29.88 | 758.9 | 30.49 | 774.4 | 36 | 2.2 | 95 | E | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0.23 | 5.8 | Cloudy | |
| Sacramento, California | 30.22 | 767.6 | 30.30 | 769.6 | 45 | 7.2 | 76 | N | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.31 | 744.5 | 29.86 | 758.4 | 63 | 17.2 | 72 | SE | 15 | 6.7 | ..... | 0 | 5s | ..... | S. | 0 | 0 | Fair | |
| St. Marks, Florida | 30.17 | 766.3 | 30.10 | 766.8 | 53 | 11.7 | 93 | SE | 4 | 1.8 | ..... | 2c | 2s | Calm | SE | 0 | 0 | Fair | |
| St. Paul, Minnesota | 28.87 | 733.3 | 29.68 | 753.9 | 49 | 9.4 | 64 | E | 12 | 5.4 | ..... | 0 | 8ks | ..... | S | 0 | 0 | Cloudy | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.65 | 651.5 | 29.98 | 761.5 | 26 | — 3.3 | 88 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.21 | 5.3 | Clear | |
| San Antonio, Texas | 29.04 | 737.6 | 29.61 | 752.1 | 66 | 18.9 | 89 | SE | 6 | 2.7 | ..... | ..... | 10ks | ..... | SE | 0 | 0 | Cloudy | |
| San Diego, California | 30.03 | 762.7 | 30.10 | 764.5 | 49 | 9.4 | 85 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.06 | 1.5 | Clear | |
| Sandusky, Ohio | 29.56 | 750.8 | 30.24 | 768.1 | 48 | 8.9 | 70 | S | 11 | 4.9 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Sandy Hook, New Jersey | 30.25 | 768.3 | 30.27 | 768.8 | 43 | 6.1 | 92 | W | 11 | 4.9 | ..... | 0 | Haze | ..... | ..... | 0.20 | 5.1 | Clear | |
| San Francisco, California | 30.24 | 768.1 | 30.31 | 769.9 | 48 | 8.9 | 78 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.07 | 1.8 | Clear | |
| Santa Fé, New Mexico | 22.85 | 580.4 | 29.39 | 746.5 | 20 | — 6.7 | 56 | SE | 8 | 3.6 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Savannah, Georgia | 30.17 | 766.3 | 30.27 | 768.8 | 57 | 13.9 | 81 | Calm | 0 | 0 | ..... | 5cs | Fog | SW | ..... | 0 | 0 | Fair | |
| Shreveport, Louisiana | 29.62 | 752.3 | 29.83 | 757.7 | 63 | 17.2 | 89 | SE | 12 | 5.4 | ..... | 0 | 5s | ..... | SE | Inap. | Inap. | Fair | |
| Smithville, North Carolina | 30.26 | 768.6 | 30.30 | 769.6 | 56 | 13.3 | 100 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Springfield, Massachusetts | 30.03 | 762.7 | 30.16 | 766.1 | 46 | 7.8 | 77 | S | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Stockton, Texas | 26.78 | 680.2 | 29.78 | 756.4 | 40 | 4.4 | 89 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 30.08 | 764.0 | 30.14 | 765.5 | 45 | 7.2 | 61 | NW | 24 | 10.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | |
| Toledo, Ohio, | 29.49 | 749.0 | 30.18 | 766.6 | 49 | 9.4 | 71 | S | 2 | 0.9 | ..... | 2c | 0 | W | ..... | 0 | 0 | Fair | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 40 | 4.4 | 68 | S | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tybee Island, Georgia | 30.24 | 768.1 | 30.27 | 768.8 | 57 | 13.9 | 87 | Calm | 0 | 0 | ..... | 2c | Fog | Calm | Calm | 0 | 0 | Fair | |
| Umatilla, Oregon | 30.16 | 766.1 | ..... | ..... | 34 | 1.1 | 79 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.74 | 755.4 | 30.00 | 762.0 | 62 | 16.7 | 100 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | SE | 0.01 | 0.3 | Cloudy | |
| Virginia City, Montana | 24.32 | 617.7 | 29.80 | 756.9 | 12 | —11.1 | 61 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.08 | 2.0 | Clear | |
| Visalia, California | 29.92 | 760.0 | 30.31 | 769.9 | 38 | 3.3 | 91 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C | 30.18 | 766.6 | 30.30 | 769.6 | 46 | 7.8 | 88 | NW | 2 | 0.9 | ..... | 5c | 2s; sm | W | W | 0.02 | 0.5 | Dense smoke | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 29 | — 1.7 | 67 | NE | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.20 | 767.1 | 30.28 | 769.1 | 53 | 11.7 | 93 | SW | 2 | 0.9 | ..... | 0 | Sm'e | ..... | SW | 0 | 0 | Smoky | |
| Winnemucca, Nevada | 25.90 | 657.8 | 30.26 | 768.6 | 17 | — 8.3 | 67 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Wood's Holl, Mass | 30.12 | 765.0 | 30.17 | 766.3 | 43 | 6.1 | 83 | NW | 8 | 3.6 | ..... | Haze | 0 | Calm | ... | 0.01 | 0.3 | Clear | |
| Yankton, Dakota | 28.05 | 712.5 | 29.25 | 742.9 | 58 | 14.4 | 82 | SE | 30 | 13.4 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Yuma, Arizona | 29.98 | 761.5 | 30.14 | 765.5 | 58 | 14 4 | 19 | NW | 25 | 11.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 30.30 | 769.6 | 30.36 | 771.1 | — 1.0 | —18.3 | 84 | NE | 11 | 4.9 | ..... | ..... | 10n | ..... | NE | 0.03 | 0.8 | Snowing | J. Fortescue, W. Wood |
| Havana, Cuba, W. I. | 30.04 | 763.6 | 30.06 | 763.5 | 70 | 21.1 | 79 | SE | 2.4 | 1.1 | ..... | 8ck | 0 | SW | ..... | 0 | 0 | Fair | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.07 | 763.8 | 30.08 | 764.0 | 76 | 24.4 | 90 | Calm | 0 | 0 | ..... | 8c | 8n | SE | Calm | 0.50 | 12.7 | ..... | James Gall. |
| Navassa, W. I. | 29.89 | 759.2 | 29.97 | 761.2 | 78 | 25.6 | ..... | NE | 6 | 2.7 | ..... | ..... | ..... | ..... | ..... | 0.10 | 2.5 | Cloudy | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | ..... | ..... | 30.00 | 762.0 | 82 | 27.8 | 87 | NE | ..... | ..... | 2 | 5k | 6ks | E | ..... | 0 | 0 | ½ Cloudy | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | 30.05 | 763.2 | 30.06 | 763.4 | 85.6 | 29.8 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.18 | 639.6 | ..... | ..... | 67.0 | 19.4 | 87 | Calm | ..... | ..... | 0 | ..... | 10s | ..... | ..... | 1.40 | 35.6 | ..... | Thomas Herran |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medillin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,883 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,700 (?)ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573,4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (? ) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,600 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,160.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,660 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,862.2 ft., or 1,820.6 m.; Santa Fé, 6,662.2 (?) ft., or 2,031.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,600 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,160.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,660 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,862.2 ft., or 1,820.6 m.; Santa Fé, 6,662.2 (?) ft., or 2,031.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.22 | 767.6 | 43 | 6.1 | 42 | 5.6 | 83 | N | 9 | 4.0 | ..... | ..... | 0 | ..... | ..... | 0.17 | 4.3 | ..... | ..... | Clear..... | |
| Navy Yard, Pensacola, Fla. | 30.22 | 767.6 | 62 | 16.7 | 62 | 16.7 | 88 | SE | 11 | 4.9 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Portsmouth, N.H | 30.19 | 766.8 | 73 | 22.8 | 44 | 6.7 | 68 | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan | 30.05* | 763.3* | 47.5 | 8.6 | 36.2 | 2.3 | 55 | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Adams. Panama | 29.95 | 760.7 | 80 | 26.7 | 79 | 26.1 | 82 | WNW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Alliance, Piraeus, Greece | 29.72‡ | 754.9‡ | ..... | ..... | 60 | 15.6 | 88 | S | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Drizzling..... | |
| Ashuelot. Shanghai, China | 30.59* | 777.0* | 51 | 10.6 | 45 | 7.2 | 68 | E | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | D. clouds..... | |
| Canonicus, New Orleans, La. | 30.00 | 762.0 | 40 | 9.4 | 63 | 17.2 | 94 | SSE | ..... | ..... | 2 | ..... | 10 | ..... | N | ..... | ..... | ..... | ..... | Rainy ..... | |
| Colorado, New York, N. Y. | 30.24‡ | 768.1‡ | ..... | ..... | 50 | 10.0 | 72 | W | 7 | 3.1 | ..... | ..... | 5 | ..... | W | 0 | 0 | ..... | ..... | Light fog..... | |
| Constitution, N. 40° 45′ W. 59° 34′ | 30.18‡ | 766 6‡ | ..... | ..... | 58 | 14.4 | 88 | S | ..... | ..... | 4 | ..... | 10 | ..... | SW | ..... | ..... | Long | SW | Drizzling..... | |
| Despatch, Constantinople, Turkey | 29.84 | 757.9 | 73 | 22.8 | 50 | 10.0 | 86 | W | ..... | ..... | 1 | ..... | 10 | ..... | W | ..... | ..... | ..... | ..... | Cloudy..... | |
| Enterprise, New Orleans, La. | 30.02‡ | 762.5‡ | ..... | ..... | 64 | 17.8 | 94 | SSE | ..... | ..... | 1 | ..... | 10 | ..... | S | ..... | ..... | ..... | ..... | Light rain.. | |
| Franklin, Norfolk, Va. | 30.24‡ | 768.1‡ | ..... | ..... | 55 | 12.8 | 80 | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | ..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.10 | 764.5 | 74 | 23.3 | 73 | 22.8 | 81 | NNE | ..... | ..... | 3-4 | ..... | 2 | ..... | NNE | ..... | ..... | Mod'ate Ground | NW | Clear..... | |
| Marion, Piraeus, Greece | 29.71 | 754 6 | 60 | 15.6 | 59 | 15.0 | 82 | SSW | ..... | ..... | 1 | ..... | 10 | ..... | Calm | Light | Light | ..... | ..... | Drizzling..... | |
| Michigan, Erie, Pa. | 29.73 | 755.1 | 59 | 15.0 | 44 | 6.7 | 68 | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear. ..... | |
| Monongahela, N. 14° 32′, E. 120° 09′ | 30.19* | 766.8* | 83 | 28.3 | 83 | 28.3 | 83 | E | ..... | ..... | 4-6 | ..... | 4 | ..... | ..... | ..... | ..... | Smooth | ..... | D. clouds..... | |
| New Hampshire, Port Royal, S. C. | 30.45 | 773.4 | 61 | 16.1 | 60 | 15.6 | 100 | E | 4 | 1.8 | ..... | ..... | 5 | ..... | SW | 0 | 0 | ..... | ..... | Clear..... | |
| Omaha, S. 16° 50′, W. 30° 58′ | 30.20* | 767.1* | 81 | 27.2 | 80 | 26.7 | 70 | ESE | 5 | 2.2 | ..... | ..... | 4 | ..... | ESE | 0 | 0 | Smooth | ..... | Pleasant..... | |
| Onward, Callao, Peru | 29.98† | 761.5† | ..... | ..... | 71 | 21.7 | 90 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, Sisal, Yucatan | 29.97‡ | 761.2‡ | ..... | ..... | 72 | 22.2 | 95 | E | ..... | ..... | 4 | ..... | 5 | ..... | NE | ..... | ..... | Smooth | ENE | Fair..... | |
| Palos, Shanghai, China | 30.60* | 777.2* | 61 | 16.1 | 42 | 5.6 | 91 | E | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Pensacola, Honolulu, H. I. | 30.20 | 767.1 | 73 | 22.8 | 69 | 20.6 | ? ? | NE | 6 | 2.7 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Plymouth. Norfolk, Va. | 30.20‡ | 767.1‡ | ..... | ..... | 56 | 13.3 | 81 | SSW | ..... | ..... | 0-1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Light mist... | |
| Powhatan, N. 18° 32′, W. 74° 43′ | 30.05‡ | 763.3‡ | ..... | ..... | 79 | 26.1 | 95 | NNE | 8.4 | 3.8 | ..... | ..... | 2 | ..... | ..... | 0.01 | 0.3 | Mod'ate | NE | Clear. ..... | |
| Ranger. Amoy, China | 30.55* | 776.0* | ..... | ..... | 58.5 | 14.7 | 73 | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Blue sky..... | |
| Rio Bravo, Brownsville, Texas | ..... | ..... | ..... | ..... | 71 | 21.7 | 92 | SSE | ..... | ..... | 4 | ..... | 10 | ..... | SE | ..... | ..... | ..... | ..... | Overcast..... | |
| Santee, Annapolis, Md. | 30.35* | 770.9* | 65 | 18.3 | 48 | 8.9 | 85 | NW | ..... | ..... | 1 | ..... | 8 | ..... | NW | 0 | 0 | ..... | ..... | Hazy..... | |
| Saratoga, Washington, D. C. | 30.18* | 766.8* | ..... | ..... | 46 | 7.8 | 92 | Calm | ..... | ..... | 0 | ..... | 9 | ..... | Calm | 0 | 0 | ..... | ..... | Cloudy..... | |
| St. Louis, League Island, Pa | 30.18 | 766.6 | 59 | 15.0 | 45 | 7 2 | 92 | Calm | 0 | 0 | ..... | ..... | 5 | ..... | NW | 0.07 | 1.8 | ..... | ..... | Fair..... | |
| Supply, N. 47° 30′ W. 37° 00′ | 30.40 | 772.1 | 54 | 12.2 | 53 | 11.7 | 67 | NNW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | Mod'ate | S | Fair ..... | |
| Swatara, N. 17° 40′ W. 74° 22′ | 30.08* | 764 0* | ..... | ..... | 79 | 26.1 | 82 | E | ..... | ..... | 5 | ..... | 7 | ..... | S&E | ..... | ..... | Mod'ate | E | D. clouds..... | |
| Tennessee, N. 11° 07′, E. 110° 52′ | 30.05* | 763.3* | 83 | 28.3 | 83 | 28.3 | 83 | NNE | 5 | 2.2 | ..... | ..... | 3 | ..... | NNE | 0 | 0 | Mod'ate | NNE | D. clouds..... | |
| Trenton, Smyrna, Turkey | 29.80‡ | 756.9‡ | ..... | ..... | 55 | 12.8 | 76 | S | ..... | ..... | 3 | ..... | 10 | ..... | S | 1.5 | 38. | Smooth | ..... | Light rain.. | |
| Tuscarora, N. 29° 55′, W. 117° 15′ | 30.10 | 764.5 | 60 | 15.6 | 59 | 15.0 | 70 | NW | ..... | ..... | 6 | ..... | 5 | ..... | NW | 0 | 0 | Rough | NW | Fair..... | |
| Vandalia, Piraeus, Greece | 29.67‡ | 753.6‡ | ..... | ..... | 56 | 13.3 | 87 | SW | ..... | ..... | 3 | ..... | 10 | ..... | SW | ..... | ..... | ..... | ..... | Light rain... | |
| Wabash, Boston, Mass. | 30.18‡ | 766.6‡ | ..... | ..... | 46 | 7.8 | 69 | W | 6 | 2.7 | ..... | ..... | 0 | ..... | ..... | 0.01 | 0.3 | ..... | ..... | Clear ..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

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

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | Character. | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Panama, Nanaimo, B. C. | | | 30.37† | 771.4† | | | | SE | | | 3 | | 5 | | SE | | | Fine | Capt. Seabury. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, Yokohama, Japan | | | | | 41 | 5.0 | | N | | | 5 | | | | | | | Blue sky | Capt. Maury. |
| S. S. Colima, N. 27° 33', W. 116° 53' | | | 30.06† | 763.5† | 61 | 16.1 | 82 | NNW | | | 5 | | 7 | | NNW | Heavy | NW | D. clouds | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic, N. 43° 1', W. 53° 26' | | | 30.40* | 772.1* | | | | SSW | | | 5 | | 1 | | SW | Light | SW | Clear | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. W. H. Thompson |
| S. S. Celtic, Liverpool | | | 30.14† | 765.5† | 40 | 4.4 | | NW | | | 6 | | | NW | | | | Squally | Capt. B. Gleadell. |
| S. S. Germanic, N. 47° 38', W. 33° 26' | | | 30.25† | 768.3† | 55 | 12.8 | ?? | NW | | | 4 | | 8 | | NNE | Light | sw;sw | D. clouds | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. *Aneroid; corrected for elevation; instrumental error not known. †Aneroid.

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

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic | | | | | | | | | | | | | | | | | | | Capt. John Metcalf. |
| S. S. Gaelic | | | | | | | | | | | | | | | | | | | |
| S. S. Oceanic, N. 31° 00', E. 177° 00' | | | 29.82† | 757.4† | 65 | 18.3 | ?? | SW | | | 6 | | k | | W | High | W | Overcast | Capt. W. H. Kidley |
| | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 41° 12', W 65° 42' | S71W | | 30.23 | 767.8 | 51.4 | 10.8 | 90 | W | | | 3 | | 0 | | WSW | Rough | SW&W | Hazy | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

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

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | Character | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois, N. 38° 58′, W. 71° 35′ | | | 30.26* | 768.6* | 54 | 12.2 | 100 | NW | | | 3 | | 0 | | | Smooth | | Blue sky | Captain Shackelford. |
| S. S. Indiana, Philadelphia, Pa | | | 30.27† | 768.8† | 53 | 11.7 | 80 | WNW | | | 4 | | 3 | | NW | | | Clear | Captain Sargent. |
| S. S. Ohio, Liverpool | | | 30.08 | 764.0 | 47 | 8.3 | 92 | NW | | | 6 | | 7 | | NW | | | Squally | Captain Morrison. |
| S. S. Pennsylvania, N. 51° 13′, W. 15° 33′ | | | 30.47 | 773.9 | 54 | 12.2 | 100 | NW | | | 2 | | 9 | | NW | Large | NW | Overcast | Captain Harris. |
| **RED STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| **ALLAN LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of A. Schumacher, & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Scandinavian | | | | | | | | | | | | | | | | | | | |
| **MARINE SERIES. (Miscellaneous.)** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller Providence, R. I | | | 30.10 | 764.5 | 50 | 10.0 | 79 | Calm | 0 | 0 | | | Haze | | | | | Hazy | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 30.39 | 771 9 | —37 | —38.3 | 86* | W | 0 | 0 | | 5cs | 0 | W | | | | Fair | O. T. Sherman. |

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid. †Aneroid; unreliable, corrected for elevation, instrumental error not known.

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

Note.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Determined by use of hair hygrometer.

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

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

Albert J. Myer

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

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 9, 1878.

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

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.

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

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

## ALGERIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | | | 30.21 | 767.2 | 68.3 | 17.4 | | NE | | | 5 | | 1 | | | 0 | 0 | Very fair | Dr. Ollive. |
| Nemours | | | 30.14 | 765.5 | 68.7 | 20.4 | 62 | Calm | | | 0 | | 0 | | | 0 | 0 | Clear | Michel. |
| Algiers | | | 30.07 | 763.6 | 68.3 | 17.4 | 64 | NE | | | 1 | | 2 | | | 0 | 0 | Fair | Towillere. |
| La Calle | | | 30.11 | 764.9 | 62.1 | 16.7 | 71 | NW | | | 5 | | 2 | | | 0 | 0 | Fair | Boulangeot. |
| Tunis | | | 30.02 | 762.5 | 65.8 | 18.8 | 47 | NW | | | 9 | | 3 | | | 0 | 0 | Pretty fair | Jacques. |
| Sfax | | | 30.13 | 765.0 | 73.4 | 23.0 | | W | | | 4 | | 3 | | | 0 | 0 | Pretty fair | Gau. |
| Saida | | | 30.21 | 767.4 | 70.3 | 21.3 | 89 | NNE | | | 3 | | 2 | | | 0 | 0 | Fair | Herbin. |
| Tebessa | | | 30.30 | 769.7 | | | | N | | | 5 | | 0 | | | 0 | 0 | Clear | Bourgeois. |
| Geriville | | | 30.26 | 768.6 | 59.7 | 15.4 | 85 | N | | | 3 | | 1 | | | 0 | 0 | Very fair | Lemaillot. |
| Laghouat | | | 30.36 | 771.1 | 73.4 | 23.0 | 81 | NNW | | | 1 | | 0 | | | 0 | 0 | Clear | Guyot. |
| Biskra | | | 30.14 | 765.5 | | | | | | | | | | | | | | | Chanvaux. |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 860 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

## AUSTRIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 28.34 | 745.2 | 29.90 | 759.4 | 45.3 | 7.4 | 23 | NE | | | 6 | | 3 | | | 0 | 0 | | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 28.94 | 735.1 | 29.74 | 755.3 | 31.3 | — 0.4 | 92 | NE | | | 3 | | 6 | | | 0.043 | 1.1 | Snowing | Dr. Wierzbiski. |
| Eperies | 28.74 | 729.9 | 29.04 | 752.9 | 33.4 | 0.8 | 71 | NW | | | 4 | | 10 | | | 0.049 | 1.25 | | Julius Mikolik. |
| Gratz | 28.62 | 727.0 | 29.90 | 759.5 | 39.6 | 4.2 | 39 | NW | | | 5 | | 5 | | | 0.091 | 2.30 | | Andreas Rospini. |
| Hermannstadt | 28.16 | 715.0 | 29.60 | 751.9 | 37.2 | 2.9 | 49 | WNW | | | 5 | | 5 | | | 0.087 | 2.20 | Snowing | Prof. Reissenberg |
| Kremsmünster | 28.57 | 725.7 | 29.96 | 761.0 | 35.2 | 1.8 | 66 | NW | | | 5 | | 10 | | | 0.079 | 2.0 | | Prof. C. Wagner |
| Lemberg | 28.51 | 724.1 | 29.52 | 749.8 | 34.7 | 1.5 | 91 | NE | | | 2 | | 8 | | | 0.035 | 0.9 | | Dr. T. Stanecki. |
| Pola | 29.74 | 755.3 | 29.85 | 758.1 | 54.7 | 12.6 | 28 | NW | | | 1 | | 4ks | | | 0 | 0 | | I. R. Hydrographic Office |
| Szathmar | 29.20 | 741.6 | 29.68 | 753.8 | 34.2 | 1.2 | 78 | NW | | | 4 | | 9 | | | 0.008 | 0.2 | | Johann Tamas, S. J. |
| Szegedin | 29.43 | 747.5 | 29.71 | 754.7 | 41.0 | 5.0 | 60 | N | | | 3 | | 6 | | | 0 | 0 | | Karl Stancel. |
| Trieste | 29.79 | 756.6 | 29.89 | 759.2 | 50.2 | 10.1 | 21 | ENE | | | 3 | | 0 | | | 0 | 0 | Fair | P. Busin. |
| Vienna | 29.13 | 740.0 | 29.87 | 758.8 | 37.0 | 2.8 | 51 | NNW | | | 4 | | 5 | | | 0.087 | 2.2 | | I. R. Central Met. Obs'y. |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

## BELGIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.66 | 727.9 | 30.23 | 767.8 | 35.2 | 1.8 | 71 | NW | | | 3 | | 9 | | | 0.004 | 0.1 | | Prof. M. Passau. |
| Brussels | 30.00 | 761.9 | 30.21 | 767.2 | 38.8 | 3.8 | 63 | WNW | | | 1 | | 10 | | NW | | | Snowing | Royal Observatory. |
| Furnes | 30.24 | 768.0 | 30.26 | 768.6 | 41.9 | 5.5 | 59 | NW | | | 1 | | 8 | | | 0.020 | 0.5 | | M. E. de Cae. |
| Maeseyck | 30.03 | 762.8 | 30.16 | 766.0 | 40.1 | 4.5 | 63 | WNW | | | 1 | | 1 | | | 0 | 0 | | M. Pierrot. |

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

## BRITISH SERIES.

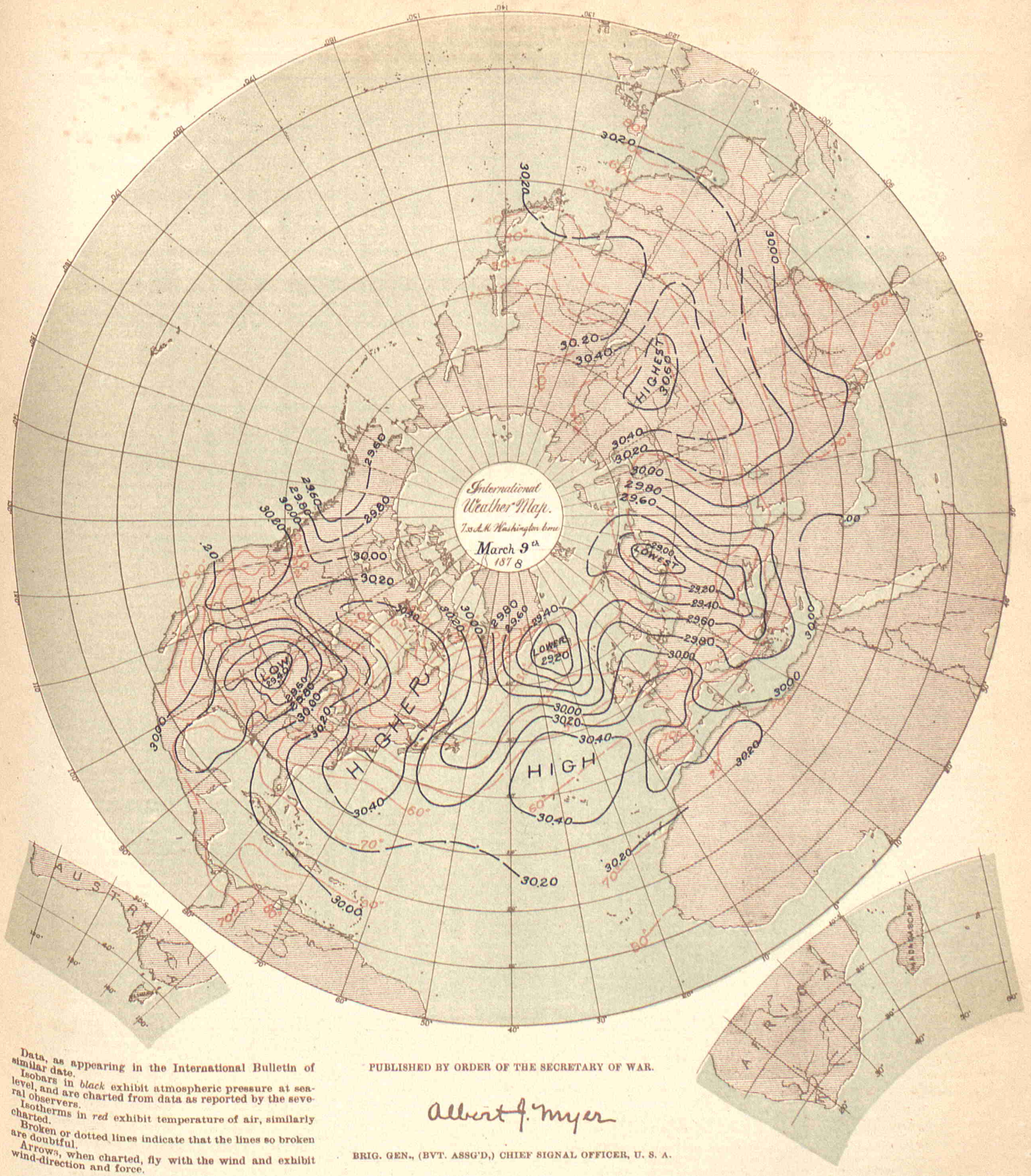
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Upp'r 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.98 | 761.5 | 30.08 | 764.0 | 36.6 | 2.6 | ..... | S | 11 | 4.9 | ..... | ..... | 10 | ..... | ..... | 0.140 | 3.56 | Overcast | W. Boswell. |
| Ardrossan | 30.04 | 763.0 | 30.06 | 763.5 | 41 | 5.0 | ..... | SSE | ..... | ..... | 8 | ..... | 9 | ..... | ..... | ..... | ..... | Raining | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.06 | 763.5 | 44.3 | 6.8 | ..... | S | 15 | 6.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Squally | S. Call, for Dr. Robinson. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.14 | 765.5 | 42.5 | 5.8 | ..... | SE | 5 | 2.2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | John Hartnup. |
| Birr Castle, (Parsonstown) | 29.85 | 758.9 | 30.08 | 764.0 | 48.2 | 9.4 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | J. Dreyer. |
| Bradford, Yorkshire | 29.74 | 755.4 | 30.13 | 765.3 | 41.1 | 5.1 | ..... | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.98 | 761.5 | 30.00 | 762.0 | 82.0 | 27.8 | ..... | NE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 30.22 | 767.6 | 45.0 | 7.2 | ..... | SW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | H. Todd. [H. C. |
| Cardington | ..... | ..... | 30.22 | 767.6 | 44.0 | 6.7 | ..... | S | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | Overcast | John McLaren. |
| Chatham, School M. E. | 30.06 | 763.5 | 30.20 | 767.1 | 41.2 | 5.1 | ..... | NW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.68 | 728.5 | 30.18 | 766.6 | 43.8 | 6.6 | ..... | SW | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy | Alexander Watt. |
| Donaghadee | 30.01 | 762.2 | 30.04 | 763.0 | 43 | 6.1 | ..... | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | J. Mac Gowan. |
| Dover | 30.19 | 766.8 | 30.22 | 767.6 | 44 | 6.7 | ..... | SSW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 30.15 | 765.5 | 42.1 | 5.6 | ..... | S | 5.4 | 2.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | Thomas Mackereth. |
| Falmouth, Observatory | 29.97 | 761.2 | 30.20 | 767.1 | 50.0 | 10.0 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.72 | 704.1 | 29.92 | 760.0 | 92.6 | 33.7 | ..... | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.68 | 753.9 | 29.91 | 759.7 | 88.0 | 31.1 | ..... | E | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's College | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.20 | 767.1 | 30.25 | 768.3 | 65.2 | 18.4 | ..... | W | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | Corpl. C. Aitken, A. H. C. |
| Glasgow, Observatory | 29.86 | 758.4 | 30.07 | 763.8 | 41.9 | 5.5 | ..... | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Misty | D. G. Maclean. |
| Great Yarmouth | 30.18 | 766.6 | 30.19 | 766.8 | 39 | 3.9 | ..... | NW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | G. T. Watson. |
| Greenwich, Royal Obs'y | 30.05 | 763.3 | 30.23 | 767.8 | 41.7 | 5.4 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | The Staff, for G. B. Airy. |
| Guernsey | 30.00 | 762.0 | 30.22 | 767.6 | 50 | 10.0 | ..... | ESE | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | Dr. S. E. Hoskins, F. R. S. |
| Helston | ..... | ..... | 30.22 | 767.6 | 53 | 11.7 | ..... | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Foggy | M. P. Moyle. |
| Holyhead | 30.04 | 763.0 | 30.09 | 764.3 | 45 | 7.2 | ..... | SSW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | John Tilston. |
| Jersey | 29.97 | 761.2 | 30.27 | 768.8 | 61.5 | 11.0 | ..... | WSW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy | J. Fisher. |
| Kew, Observatory | ..... | ..... | 30.04 | 763.0 | 43.1 | 6.2 | ..... | WSW | 5 | 2.2 | ..... | ..... | 10c | ..... | ..... | ..... | ..... | Hazy | The Staff. |
| Kingstown | 30.06 | 763.5 | 30.09 | 764.3 | 48 | 8.9 | ..... | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | George Mitchell. |
| Leicester, Museum | ..... | ..... | 30.20 | 767.1 | 42.3 | 5.7 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds | Wm. J. Harrison, F. G. S. |
| Malta, (Mediterranean) | 29.81 | 757.2 | 29.89 | 759.2 | 61.4 | 16.3 | ..... | NW | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | Sgt. Fred. Travis, A. H. |
| Nairn | 29.91 | 759.7 | 30.01 | 762.2 | 39 | 3.9 | ..... | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 30.15 | 765.8 | 70.2 | 21.2 | ..... | NE | ..... | ..... | 5 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 30.00 | 762.0 | 30.19 | 766.8 | 44.7 | 7.1 | ..... | SSW | ..... | ..... | 2 | ..... | 10c;k | ..... | WNW | 0.042 | 1.07 | D. clouds | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.65 | 753.1 | 30.19 | 766.8 | 41.2 | 5.1 | ..... | SSE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.21 | 767.3 | 45 | 7.2 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Mr. Lucas. |
| Plymouth | 30.13 | 765.3 | 30.20 | 767.1 | 50.8 | 10.4 | ..... | SW | ..... | ..... | 2 | ..... | 4? | ..... | ..... | ..... | ..... | Overcast? | John Merrifield. |
| Roche's Point | 30.07 | 763.8 | 30.12 | 765.0 | 52 | 11.1 | ..... | WSW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Cloudy | W. Kennedy. |
| Saint Ann's Head | 29.98 | 761.5 | 30.15 | 765.8 | 47 | 8.3 | ..... | SSE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 29.97 | 761.2 | 36 | 2.2 | ..... | S | 18 | 8.0 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.64 | 752.8 | 39.4 | 4.1 | ..... | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Sergt. W. H. Lyne. |
| Sheffield | 29.91 | 759.7 | 30.20 | 767.1 | 41.8 | 5.4 | ..... | SW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0.06 | 1.5 | D. clouds | W. F. Cooper. |
| Silloth Rectory | 30.07 | 763.8 | 30.10 | 764.5 | 44.8 | 7.1 | 70 | N | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.200 | 5.08 | D. clouds | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.75 | 755.6 | 30.15 | 765.8 | 40.5 | 4.7 | ..... | S | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | Foggy | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 29.97 | 761.2 | 36 | 2.2 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Smith. |
| Stratfield Turgiss | 30.02 | 762.5 | 30.25 | 768.3 | 42.4 | 5.8 | ..... | SE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | Rev. C. H. Griffith, F. M. S. |
| Thurso | ..... | ..... | 29.89 | 759.2 | 37 | 2.8 | ..... | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 30.19 | 766.8 | 53 | 11.7 | ..... | SW | ..... | ..... | 7 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 30.09 | 764.3 | 51.5 | 10.8 | ..... | SW | 23 | 10.3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds | The Staff. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.92 | 760.0 | 67.0 | 19.4 | 82 | NW | ..... | ..... | 5 | ..... | 8k | ..... | ..... | 0 | 0 | ..... | Francis Abbott, F. R. A. S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.77 | 756.1 | 29.96 | 761.0 | 85.5 | 29.7 | 67 | NW | 9.0 | 4.0 | ..... | 4 | 6 | ..... | ..... | 0 | 0 | Cloudy; fine | C. Meldrum. |
| Melbourne, Observatory | 30.05 | 763.3 | 30.14 | 765.5 | 60.0 | 15.6 | 71 | ESE | 4 | 1.8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Fine | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

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

| MARINE SERIES. VESSELS. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|
| S. S. Algeria | ..... | ..... | ..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | Capt. J. E. Monland. |
| Ship Camperdown | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon, N. 17° 2′, W. 68° 37′ | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | 3 | E | D. clouds | Capt. C. C. Prehn. [R. |
| S. S. Peruvian | ..... | ..... | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire, N. 37° 5′ W. 51° 15′ | 1 | NW | D. clouds | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.




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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.21 | 665.7 | | | 65.3 | 18.5 | 88 | NE | | | 1 | p | | | | 0 | 0 | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

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

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.76 | 755.8 | 29.80 | 757.0 | 35.2 | 1.8 | 95 | N | | | 4 | | 0 | | | | | |
| Fanöe | 29.89 | 759.2 | 29.91 | 759.7 | 38.7 | 3.7 | 67 | NNW | | | 6 | | 5 | | | | | |
| Godthaab, (Greenland) | 30.08 | 764.0 | 30.12 | 765.1 | 5.4 | —14.8 | | SSE | | | 4 | | 10 | | | | | Snowing |
| Stykkisholm, (Iceland) | 29.04 | 737.7 | 29.09 | 738.8 | 34.5 | 1.4 | 94 | SE | | | 7 | | 10 | | | | | Raining |
| Thorshavn, (Faröe) | 29.80 | 756.9 | 29.84 | 757.8 | 34.3 | 1.3 | 76 | SSE | | | 6 | | 10 | | | | | |
| Vestervig | 29.71 | 754.7 | 29.88 | 759.0 | 35.2 | 1.8 | 68 | NW | | | 4 | | 0 | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.77 | 756.1 | 30.32 | 770.1 | 50.0 | 10 | 80 | NW | | | 3 | | 8 | | W | 0 | 0 | Very cloudy | Collignon, Director. |
| Amiens, Normal School | 30.15 | 765.7 | 30.26 | 768.5 | 45.7 | 7.6 | 71 | W | | | 2 | | 5 | | W | 0 | 0 | Cloudy | Bonvarne, Director. |
| Avignon, Normal School | 30.01 | 762.2 | 30.09 | 764.2 | 55.9 | 13.3 | 33 | NNW | | | 6 | | 0 | | | 0 | 0 | Cloudy | Mr. Giraud, Director |
| Bar-sur-Seine | 29.68 | 753.9 | 30.27 | 768.8 | 42.3 | 5.7 | 58 | NE | | | 1 | | 8cn | | | 0 | 0 | Very cloudy | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 45.5 | 7.5 | 55 | ENE | | | 1 | | 8 | | N | 0 | 0 | Very cloudy | Normal School. |
| Besançon | 29.33 | 745.0 | 30.24 | 768.2 | 45.5 | 7.5 | 74 | WSW | | | 4 | | 5 | | SW | 0.28 | 7. | Cloudy | Normal School. |
| Bourg-en-Bresse | 29.38 | 746.2 | 30.31 | 769.8 | 43.3 | 6.3 | 67 | N | | | 2 | | 8kn | | N | 0.12 | 3. | Very cloudy | Normal School. |
| Bourges, Normal School | 29.69 | 754.1 | 30.25 | 768.4 | 48.6 | 9.2 | 97 | NE | | | 1 | | 2 | | W | 0.04 | 1. | Slightly cl'dy | A. Wagner, Director. |
| Brest, Naval Observatory | 29.95 | 760.7 | 30.17 | 766.3 | 52.7 | 11.5 | 80 | SW | | | 3 | | 10 | | SW | 0 | 0 | | The Staff. |
| Carcassonne, Normal School | 29.82 | 757.5 | 30.24 | 768.1 | 56.6 | 13.6 | 80 | W | | | 6 | | 5 | | W | 0.20 | 5. | Cloudy | Vateau, Director. |
| Caen | 30.17 | 766.4 | 30.25 | 768.3 | 49.1 | 9.5 | 83 | N | | | 2 | | 5 | | NW | 0 | 0 | Cloudy | Normal School. |
| Chartres, Normal School | 29.69 | 754.0 | 30.27 | 768.8 | 46.9 | 8.3 | 81 | N | | | 1 | | 5 | | NW | 0 | 0 | | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.91 | 759.8 | 30.24 | 768.2 | 42.3 | 5.7 | 82 | NW | | | 3 | | 5k | | NW | 0 | 0 | Cloudy | .. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.84 | 732.6 | 30.22 | 767.6 | 50.4 | 10.2 | 39 | N | | | 2 | | 8 | | N | 0.008 | 0.2 | Very cloudy | Ruard, Director. |
| Commercy, Normal School | 29.34 | 745.3 | 30.26 | 768.5 | 38.5 | 3.6 | 80 | NW | | | 2 | | 5 | | NW | 0.04 | 1. | Cloudy | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.83 | 732.3 | 29.97 | 761.3 | 52.7 | 11.5 | 78 | NW | | | 8 | | 2 | | NW | 0 | 0 | ¾ covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 30.09 | 764.2 | 30.30 | 769.7 | 53.6 | 12.0 | 54 | S | | | 2 | | 5 | | | 0 | 0 | Cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.95 | 760.7 | 30.26 | 768.7 | 49.6 | 9.8 | 62 | N | | | 2 | | 5 | | N | 0 | 0 | Cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 29.25 | 743.0 | 30.19 | 766.8 | 47.1 | 8.4 | 83 | E | | | 2 | | 5 | | W | 0.04 | 1. | Cloudy | Voudez, Director. |
| Lorient, Naval Observatory | 30.18 | 766.5 | 30.28 | 769.0 | 54.3 | 12.4 | 59 | S | | | 2 | | 8 | | S | 0 | 0 | ¾ covered | T. Carré, Director. |
| Mâcon, Normal School | 29.52 | 749.9 | 30.23 | 767.9 | 46.0 | 7.8 | 80 | Calm | | | 0 | | 5 | | | 0 | 0 | Cloudy | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | 29.17 | 740.8 | 30.25 | 768.4 | 39.6 | 4.2 | 80 | NNW | | | 2 | | 10 | | SSE | 0 | 0 | Covered | Normal School. |
| Nismes, Normal School | 29.87 | 758.8 | 30.08 | 763.9 | 64.8 | 18.2 | 36 | N | | | 6 | | 0 | | | 0 | 0 | Clear | Boyer, Director. |
| Orleans, Normal School | 29.84 | 757.9 | 30.23 | 767.8 | 47.1 | 8.4 | 50 | N | | | 1 | | 5 | | | 0 | 0 | Cloudy | Bernard, Director. |
| Paris, Observatory | 30.01 | 762.2 | 30.26 | 768.5 | 44.6 | 7.0 | 51 | NE | | | 1 | | 7 | | NW | 0 | 0 | Very cloudy | National Observatory. |
| Privas | 29.08 | 738.6 | 30.15 | 765.8 | 53.6 | 12 | 48 | N | | | 2 | | 5 | | S | 0 | 0 | Cloudy | Normal School |
| Puy de Dome (Summit) | | | | | | | | | | | | | | | | | | | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.21 | 767.4 | 30.24 | 768.2 | 56.1 | 13.4 | 60 | E | | | 3 | | 0 | | | 0 | 0 | Clear | Lt. Decante, Director. |
| Rouen, Normal School | 30.20 | 767.0 | 30.28 | 769.2 | 46.9 | 8 3 | 55 | NW | | | 3 | | 5 | | NW | 0 | 0 | Cloudy | F. Lucard, Director. |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | M. H. Hercouet. |
| Tarbes, Normal School | 29.23 | 742.5 | 30.33 | 770.3 | 53.6 | 12 | 65 | SW | | | 4 | | 10 | | | 0 | 0 | Covered | T. Hugues, Director. |
| Villefranche | 29.51 | 749.6 | 30.26 | 768.6 | 51.4 | 10.8 | 67 | NNW | | | 2 | | 5 | | W | 0 | 0 | Cloudy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.82 | 757.5 | 29.85 | 758.2 | 77.4 | 25.2 | | | | | | | | | | 0.47 | 12. | | L'Abbé Marchési. |
| Lyons | | | 30.26 | 768.6 | 47.8 | 8.8 | | | | | | | 10 | | | 0.031 | 0.8 | Covered | M. Jeys. |
| Marseilles, Observatory | | | 29.97 | 761.2 | 55.9 | 13.3 | 51 | NW | | | 6 | | 0 | | | 0 | 0 | Clear | The Staff. |
| Mont-Louis | 24.95 | 633.6 | 30.26 | 768.6 | 52.5 | 11.4 | 26 | NNW | 9.3 | 4.17 | | | 1 | | WNW | 0 | 0 | | Mr. Falguère. |
| Nice | 29.73 | 755.2 | 29.81 | 757.2 | 61.7 | 16.5 | 50 | E | | | 8 | | 1 | | SE | 0 | 0 | Clear | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.97 | 761.1 | 30.24 | 768.1 | 44.2 | 6.8 | 57 | NE | | | 2 | | 8 | | NNE | 0 | 0 | | Marié Davy, Director. |
| Perpignan | | | 30.12 | 765.0 | 61.5 | 16.4 | 55 | NE | 13.0 | 5.83 | | | 1 | | NW | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.63 | 574.8 | | | 44.6 | 7.0 | | NW | | | 1 | | 1 | | | 0 | 0 | Clear | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 30.08 | 764.1 | 30.26 | 768.5 | 44.8 | 7.1 | 52 | E | | | 1 | | 8 | | NW | 0 | 0 | | E. Renou. |
| Toulouse, Observatory | 29.52 | 749.9 | 30.25 | 768.4 | 53.4 | 11.9 | 62 | NW | | | 3 | | 6 | | | 0 | 0 | | The Staff. |
| Tours | 30.04 | 763.1 | 30.24 | 768.1 | 53.2 | 11.8 | 45 | NNW | | | 1 | | 7 | | W | 0 | 0 | | C. Marquet. |
| Versailles, (near Paris) | | | 30.25 | 768.3 | 45.7 | 7.6 | 51 | NNE | | | 2 | | 9 | | | 0 | 0 | Almost cov'd | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.27 | 768.9 | 30.30 | 769.5 | 45 7 | 7.6 | 89 | ESE | 12.5 | 5.6 | | | 10n | | | 0.004 | 0.1 | Covered | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,686.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 29.67 | 753.6 | 29.85 | 758.2 | 38.8 | 3.8 | 69 | NW | | | 5 | | 7 | | | 0.062 | 1.57 | Raining | Prof. Arndt. |
| Breslau | 29.26 | 743.2 | 29.79 | 756.6 | 36.5 | 2.5 | 47 | WNW | | | 3 | | 6 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.72 | 755.0 | 30.17 | 766.2 | 42.1 | 5.6 | 49 | WSW | | | 2 | | 5 | | | 0 | 0 | | Albert Senz. |
| Cassel | 29.47 | 748.6 | 30.08 | 764.1 | 33.4 | 0.8 | 88 | NNW | | | 4 | | 8 | NW | | 0.249 | 6.32 | | Dr. H. Möhl. |
| Crefeld | 29.97 | 761.1 | 30.13 | 765.2 | 38.8 | 3.8 | 63 | N | | | 2 | | 6 | | | 0.16 | 4. | | Director Lose. |
| Emden | 30.10 | 764.5 | 30.13 | 765.4 | 40.1 | 4.5 | 74 | NW | | | 3 | | 1 | | | 0.157 | 4.0 | | Prof. Prestel. |
| Frankfort on the Main | 29.80 | 756.9 | 30.18 | 766.5 | 41.0 | 5. | 48 | NW | | | 3 | | 5 | | | 0.051 | 1.3 | | Physical Society. |
| Friedrichshafen | 28.71 | 729.3 | 30.21 | 767.2 | 37.6 | 3.1 | 54 | NW | | | 4 | | 7 | NW | | | | Light snow. | M. Wilhelm. |
| Hamburg | 29.87 | 758.8 | 29.95 | 760.6 | 38.8 | 3.8 | 51 | NNW | | | 5 | | 4k;c | NW | | 0.024 | 0.6 | Fair | Captain F. Hegemann. |
| Kiel | 29.89 | 759.2 | 29.91 | 759.7 | 38.5 | 3.6 | 45 | NW | | | 4 | | 2 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.50 | 749.3 | 29.68 | 751.3 | 31.6 | — 0.2 | 64 | NW | | | | | | | | 0.073 | 1.85 | Snowing | Prof. E. Luther. |
| Köslin | | | 29.70 | 754.3 | 33.8 | 1.0 | | N | | | 5 | | 0 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.54 | 750.2 | 29.97 | 761.3 | 34.7 | 1.5 | 71 | NW | | | 5 | | 6 | NW | | 0.039 | 1.0 | Light snow. | Prof. Bruhns. |
| Memel, Naval School | 29.47 | 748.6 | 29.52 | 749.8 | 30.0 | — 1.1 | 74 | NW | | | 7 | | 8s | | | | | Squally | Reinbrech von Skalweit. |
| Neufahrwasser | 29.63 | 752.5 | 29.64 | 752.9 | 32.5 | 0.3 | 76 | NNW | | | 4 | | 3 | | | 0.110 | 2.8 | | A. Lothes. |
| Posen | 29.49 | 749.0 | 29.79 | 756.7 | 35.2 | 1.8 | 68 | NW | | | 8 | | 3 | | | 0.069 | 0.23 | Fair | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.66 | 753.4 | 30.23 | 767.9 | 40.8 | 4.9 | 48 | W | | | 2 | | 9 | W | | 0.069 | 1.74 | | Dr. Schur. |
| Stuttgart | 29.18 | 741.2 | 30.16 | 766.0 | 36.9 | 2.7 | 54 | W | | | 2 | | 3 | NW | | 0.016 | 0.4 | | Prof. Schoder. |
| Treves, (Trier) | 29.58 | 751.4 | 30.11 | 764.7 | 38.3 | 3.5 | 55 | NW | | | 5 | | 10 | | | 0.001 | 0.02 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.53 | 724.7 | 30.11 | 764.7 | 34.2 | 1.2 | 82 | NW | 16 | 7 | | | 9kn | | NW | 0.142 | 3.6 | | Dr. Von Bebber. |
| Wustrow, Naval School | 29.88 | 758.9 | 29.91 | 759.7 | 37.2 | 2.9 | 67 | WNW | | | 4 | | 4 | | | 0 | 0 | Fair | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.32 | 744.6 | 29.71 | 754.5 | 61.9 | 16.6 | | SW | | | 2.5 | | | | | | | ⅛ clear | Dr. J. F. J. Schmidt. |

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

## INDIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.93 | 760.2 | 29.98 | 761.5 | 77.9 | 25.5 | 65 | WSW | 26.0? | 11.6? | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.53 | 750.0 | 30.00 | 761.9 | 91.5 | 33.1 | 27 | Calm | | | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.91 | 759.8 | 29.95 | 760.7 | 80.3 | 26.8 | 76 | NW | 15.0 | 6.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.90 | 708.8 | 29.87 | 758.6 | 89.8 | 32.1 | 27 | NNE | | | | | 0 | | | 0 | 0 | Dust-whirl | |
| Lahore | 29.27 | 743.5 | 30.02 | 762.5 | 78.7 | 25.9 | 30 | NW | 1.8 | 0.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.42 | 696.5 | 29.93 | 760.1 | 84.9 | 29.4 | 55 | W | 14.0 | 6.3 | | | 0 | | | 0 | 0 | Misty | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 29.09 | 738.9 | 30.00 | 762.0 | 75.8 | 24.3 | 39 | SW | 1.6 | 0.7 | | | | | | 0 | 0 | | |
| Agra | 29.43 | 747.4 | 29.99 | 761.8 | 81.7 | 27.6 | 21 | W | | | | | | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.90 | 734.1 | 29.93 | 760.1 | 91.5 | 33.1 | 18 | Calm | 3.6 | 1.6 | | | | | | 0 | 0 | Blue sky | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.62 | 752.3 | 29.99 | 761.8 | 80.0 | 26.7 | 50 | NW | 2.0 | 0.9 | | | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.68 | 753.9 | 30.00 | 761.9 | 76.6 | 24.8 | 42 | Calm | 0.7 | 0.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.79 | 756.6 | 29.97 | 761.3 | 80.5 | 26.9 | 28 | W | 1.1 | 0.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.95 | 709.9 | 29.97 | 761.2 | 78.3 | 25.7 | 16 | NW | 3.4 | 1.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.86 | 758.3 | 29.94 | 760.4 | 86.1 | 30.1 | 61 | SSW | 4.1 | 1.8 | | | 4 | | | 0 | 0 | D. clouds | |
| Calcutta (Alipore) | 29.95 | 760.6 | 29.97 | 761.2 | 80.7 | 27.1 | 67 | SSW | 3.0 | 1.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.59 | 751.6 | 29.98 | 761.6 | 78.4 | 25.8 | 37 | Calm | 5.1 | 2.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.90 | 759.4 | 29.99 | 761.8 | 79.9 | 26.6 | 82 | WSW | 5.0 | 2.2 | | | 6 | | | 0 | 0 | Misty | |
| Sibsagar | 29.76 | 755.9 | 30.11 | 764.8 | 65.9 | 18.8 | 84 | NE | 4.7 | 2.1 | | | 2 | | | 0.22 | 5.6 | Blue sky | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.63 | 727.1 | 29.99 | 761.7 | 84.0 | 28.9 | 19 | NW | 2.6 | 1.2 | | | | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,851 ft., or 411.8 m.

## ITALIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall, or melted snow in the past 24 hours. Inches. | Rain-fall, or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.45 | 748.1 | 29.87 | 758.6 | 57.0 | 13.9 | 45 | NE | 9.4 | 4.2 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 29.72 | 754.9 | 29.83 | 757.7 | 54 3 | 12.4 | 31 | SE | 6.3 | 2.8 | ..... | ..... | 3 | NW | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Vicenza | 29.63 | 752.7 | 29.83 | 757.6 | 55.2 | 12.9 | 23 | S | 6.3 | 2.8 | ..... | ..... | 2 | E | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.49 | 723.7 | 29.81 | 757.2 | 55.4 | 13.0 | 9 | NNW | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. Schiaparelli. |
| Moncalieri | 28.93 | 734.9 | 29.83 | 757.7 | 58.0 | 14.8 | 37 | ESE | 10.5 | 4.7 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 27.92 | 709.2 | 29.80 | 756.9 | 58.1 | 14.5 | 15 | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.63 | 752.6 | 29.86 | 758.3 | 59.4 | 15.2 | 51 | ESE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.66 | 753.3 | 29.83 | 757.7 | 61.2 | 16.2 | 31 | SW | 5.6 | 2.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.58 | 751.4 | 29.90 | 759.5 | 62.2 | 16.8 | 25 | NW | ..... | ..... | 8 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.54 | 750.3 | 29.80 | 756.9 | 60.8 | 16.0 | 7 | N | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Cav. F Meucci. |
| Leghorn | 29.76 | 756.0 | 29.85 | 758.2 | 58.1 | 14.5 | 70 | NW | 2.5 | 1.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 29.83 | 757.6 | 29.88 | 758.9 | 52.5 | 11.4 | 45 | NE | 19.2 | 8.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.30 | 718.7 | 29.86 | 758.5 | 48.2 | 9.0 | 25 | NE | 1.3 | 0.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.71 | 754.6 | 29.82 | 757.5 | 63.0 | 17.2 | 48 | NNE | ..... | ..... | 2 | ..... | 2 | SE | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.64 | 752.8 | 29.82 | 757.3 | 60.4 | 15.8 | 52 | N | 7.4 | 3.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U | 29.61 | 752.2 | 29.82 | 757.4 | 63.0 | 17.2 | 60 | WNW | ..... | ..... | 4 | ..... | 2 | NW | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 54.3 | 12.4 | 43 | NNE | 7.4 | 3.3 | ..... | ..... | 6 | NW | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.97 | 753.7 | 29.87 | 758.6 | 59.4 | 15.2 | 47 | NW | ..... | ..... | 6 | ..... | 3 | NW | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 28.97 | 735.7 | 29.86 | 758.4 | 61.2 | 16.2 | 71 | SW | 6.9 | 3.1 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 29 59 | 750.7 | 29.81 | 757.2 | 61.0 | 16.1 | 54 | WNW | 9.4 | 4.2 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.75 | 755.7 | 29.83 | 757.6 | 62.1 | 16.7 | 61 | NE | ..... | ..... | 2 | ..... | 1 | NW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.26 | 743.3 | 29.82 | 757.4 | 61.2 | 16.2 | 44 | WSW | 4.9 | 2.2 | ..... | ..... | 2 | E | ..... | 0 | 0 | ..... | Prof. F. Brioschi |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.9 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 30.04 | 763.0 | 30.11 | 764.8 | 39.3 | 4.1 | 67 | NNW | 11.2 | 5.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| Tokei (Yeddo) University | 29.99 | 761.7 | 30.09 | 764.3 | 39.2 | 4 | 64 | NW | 8 | 3.6 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear | Prof. P. V. Veeder. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | 25.10 | 637.5 | 29.89 | 759.1 | 68.0 | 20.1 | 30 | N | 0.9 | 0.4 | ..... | 5n | 5n | ..... | ..... | 0 | 0 | Covered | L. Castillo, A. E. |
| Guadalajara | 25.00 | 635.0 | 30.06 | 763.4 | 43.7 | 6.5 | 35 | SW | 0.9 | 0.4 | ..... | ..... | 5 | ..... | SW | 0 | 0 | ½ cloudy | Prof. L. Perez. |
| Guanajuato | 23.62 | 600.0 | 29.84 | 757.9 | 59.5 | 15.3 | 25 | Calm | 0 | 0 | ..... | 0 | 4 | ..... | SW | 0 | 0 | ½ cloudy | Prof. V. Fernandes |
| Leon | ..... | ..... | ..... | ..... | 55 0 | 12.8 | 31 | NNW | 0 9 | 0.4 | ..... | 6ck | 0 | SW | ..... | 0 | 0 | Cloudy | Prof. M. Leal. |
| Mexico | 23.01 | 584.4 | 29.97 | 761.2 | 60.8 | 16.0 | 23 | NW | 4.2 | 1.9 | ..... | 0 | 10kn | ..... | SW | 0 | 0 | Covered | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 59 0 | 15.0 | 20 | SW | 11.0 | 4.9 | ..... | 8ck | 0 | SW | ..... | 0 | 0 | Cloudy | M. V. de Leon, M. E. |
| Puebla | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 29.61 | 752.2 | 29.63 | 752.5 | 77.0 | 25.0 | 81 | S | 28.5 | 11.7 | ..... | 7c | 8kc | ..... | E | 0 | 0 | Covered | G. Barroeta, M. D. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Vera-Cruz | 29.64 | 752.9 | 29.67 | 753.0 | 75.2 | 24.0 | 83 | Calm | 0 | 0 | ..... | 0 | 9sk | ..... | SW | 0 | 0 | Very cloudy | J. A. Bonilla, M. E. |
| Zacatecas | ..... | ..... | ..... | ..... | 50.0 | 10.0 | 45 | NW | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | P. Spina. [M. M. D. D. |
| Puebla, (Catholic Institute) | 23.24 | 590.2 | 30.00 | 762.1 | 59.4 | 15.2 | 54 | SSW | 1.1 | 0.5 | ..... | 0 | 10ck | ..... | NW | 0 | 0 | Covered | M. Tena, F. L. Param |
| Morelia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,803 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.23 | 767.7 | 30.23 | 767.7 | 42.1 | 5.6 | ..... | NNW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.020 | 0.5 | ..... | |
| Groningen | 30.02 | 762 5 | 30.03 | 763.9 | 38.1 | 3.4 | ..... | NNW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.126 | 3.2 | ..... | ..... |
| Helder | 30.13 | 765.3 | 30.13 | 765.3 | 39.2 | 4.0 | ..... | NW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 30.19 | 766.9 | 30.19 | 766 9 | 41.7 | 5.4 | 64 | NNW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 30.12 | 765.1 | 30.17 | 766.3 | 43.2 | 6.2 | 46 | WNW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0.012 | 0.3 | Cloudy | H. v d Brink. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

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

| STATIONS | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.87 | 758.8 | 29.93 | 760.2 | 33.4 | 0.8 | 61 | NNW | 3.8 | 1.7 | | | 1 | | | 0 | 0 | | |
| Brönö | 29.60 | 751.7 | 29.63 | 752.7 | 28.8 | — 1.8 | 72 | NNW | 18 | 8 | | | 3 | | | 0 | 0 | | |
| Christiania | 29.60 | 751.9 | 29.75 | 755.7 | 36.5 | 2.5 | 38 | N | 9 | 4 | | | 7 | | | 0 | 0 | | |
| Tromsö | 29.36 | 745.8 | 29.41 | 746.9 | 22.3 | — 5.4 | 80 | SW | 7 | 3 | | | 10 | | | 0.630 | 16.0 | Snowing | |

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

## PORTUGUESE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.30 | 769.5 | 30.49 | 774.4 | 61.9 | 16.6 | 83 | E | 1.8 | 0.8 | | | 3 | | | 0 | 0 | | Dr. J. A. Sampaio. |
| Campo Major | 29.13 | 739.8 | 30.13 | 765.3 | 71.2 | 21.8 | 41 | SW | 3.1 | 1.4 | | | 4 | | | 0 | 0 | | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.22 | 767.6 | 30.31 | 769.8 | 64.2 | 17.9 | 68 | SW | 6.3 | 2.8 | | | 10 | | | 0 | 0 | | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.82 | 757.4 | 30.18 | 766.5 | 62.4 | 16.9 | 62 | NW | 11.2 | 5.0 | | | 3 | | | 0 | 0 | | The Staff. |
| Ponta Delgada, (Azores) | 30.43 | 772.8 | 30.51 | 775.0 | 66.9 | 19.4 | 58 | SSE | 3.1 | 1.4 | | | 6 | | | 0 | 0 | | |

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

| Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | | | | | | | | | | | | | | | | | | R. A. T. Pinha, Com'd't. |
| D. Fernando | | | | | | | | | | | | | | | | | | A. M. de Sande, Com'd't. |
| India | | | | | | | | | | | | | | | | | | A. D. Pedroso, Com'd't. |
| Mindello, Mozambique, Mozambique | 29.76 | 756.0 | 29.77 | 756.1 | 86.0 | 30.0 | | SE | | | 2 | | 8 | | SE | 1 | | Blue sky | J. F. R. R. Bastos, Com'd't. |
| Quanza | | | | | | | | | | | | | | | | | | | A. J. de Mattos, Com'd't. |
| Sado, Bissao, Senegambia | 29.97* | 761.2* | 29.98* | 761.5* | 83.3 | 28.5 | | SW | | | 1 | | 4 | | SW | 1 | SW | D. clouds | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.85 | 758.1 | 29.85 | 758.2 | 86.0 | 30.0 | | WNW | | | 2 | | 7 | | | | | Blue sky | F. Texeira da Silva, Com'd't. |
| Tejo | | | | | | | | | | | | | | | | | | | F. J. Ferreira, dos Anjos, Com' |

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Anerold.

## RUSSIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.17 | 741.0 | 29.61 | 752.1 | 33.4 | 0.8 | 77 | NW | 18 | 8 | | | 3ks | | | | | Astronomical Obs. |
| Wilna | 28.97 | 735.7 | 29.39 | 746.6 | 30.9 | — 0.6 | 58 | NW | 7 | 3 | | | 10 | | | | Heavy clouds | Astronomical Obs. |
| Dorpat | 28.98 | 736.0 | 29.22 | 742.3 | 25 2 | — 3.8 | 84 | WNW | 7 | 3 | | | 10n | | | | | Prof. Dr. Weihrauch. |
| St. Petersburg | 28.08 | 738.5 | 29.09 | 738.9 | 23.5 | — 4.7 | 81 | W | 13 | 6 | | | 10n | | | | Light snow | Central Physical Obs. |
| Kuopio | 28.66 | 727.9 | 28.99 | 736.3 | 21.9 | — 5.6 | 100 | NW | 18 | 8 | | | 10 | | | Blank | Blank | Ch. Forsten. |
| Kieff | 28.61 | 726.6 | 29.25 | 743.0 | 33.6 | 0.9 | 82 | NW | 18 | 8 | | | 10n | | | | Heavy clouds | Physical Cabinet. |
| Nikolaiev | 29.28 | 743.7 | 29.35 | 745.5 | 51.1 | 10.6 | 44 | S | 18 | 8 | | | 3k | | | | | Kurdakof. |
| Kertch | 29.53 | 750.0 | 29.55 | 750.5 | 47.1 | 8.4 | 96 | S | 7 | 3 | | | 10 | | | | | Lagorio. |
| Moscow | 28.73 | 729.7 | 29.29 | 744.0 | 33.8 | 1.0 | 90 | S | 9 | 4 | | | 10s | | | | Snowing | Meteorological Obs. |
| Lugan | 29.27 | 743.5 | 29.48 | 748.7 | 43.2 | 6.2 | 82 | SE | 2 | 1 | | | 10n | | | Blank | Blank | Light clouds | Meteorological Obs. |
| Archangel | 29.07 | 738 3 | 29.09 | 738.8 | 32 7 | 0.4 | 92 | SSE | 13 | 6 | | | 10 | | | | | | Ogorodnikof. |
| Tiflis | 28.43 | 722.2 | 29.82 | 757.5 | 62.1 | 16.7 | 27 | NNW | 4 | 2 | | | 9ck | | | | | | Physical Observatory |
| Astrakhan | 30.00 | 762.0 | 29.92 | 759.9 | 34.2 | 1.2 | 85 | ESE | 9 | 4 | | | 8ks | | | | | | Sebastianof. |
| Kasan | 29.55 | 750.6 | 29.83 | 757.7 | 35.2 | 1.8 | 82 | S | 7 | 3 | | | 10 | | | | | | Physical Cabinet. |
| Orenburg | | | | | | | | | | | | | | | | | | | Tschernischet. |
| Ekaterinburg | 29.09 | 738.8 | 30.07 | 763.6 | 36.1 | 2.3 | 65 | S | 4 | 2 | | | 3cs | | | | | Light clouds | Meteorological Obs. |
| Nukuss | 29.83 | 757.6 | 30.06 | 763.5 | 55.8 | 13.2 | 82 | SSW | 4 | 2 | | | 1s | | | | | | |
| Kasaly | | | | | | | | | | | | | | | | | | | Bobrof. |
| Tashkend | 28.63 | 727.3 | 30.37 | 771.5 | 50.7 | 10.4 | 81 | NE | 9 | 4 | | | 10n | | | | | | Michelson. |
| Barnaul | 29.96 | 760.9 | 30.52 | 775.2 | 24.8 | — 4.0 | 60 | NE | 0 | 0 | | | 0 | | | | | | Meteorological Obs. |
| Yeniseisk | 30.30 | 769.7 | 30.65 | 778.5 | 23.9 | — 4.5 | 88 | NW | 2 | 1 | | | 0 | | | | | | Marks. |
| Irkutsk | | | | | | | | | | | | | | | | | | | Usolzef. |
| Krotkowo* | 29.39 | 746.4 | 29.87 | 758.7 | 36.1 | 2.3 | 89 | S | 16 | 7 | | | 10 | | | | | | Cand. Fatjanow. |
| Peking, (China) | 30.05 | 763.2 | 30.19 | 766.8 | 47.7 | 8.7 | 38 | Calm | 0 | 0 | | | 4cs | | | | | | Physical Observatory. |
| Nertchinsk | 27.93 | 709.4 | 30.11 | 764.8 | 21.0 | — 6.1 | 64 | Calm | 0 | 0 | | | 0 | | | | | | Meteorological Obs. |
| Vladivostock | | | | | | | | | | | | | | | | | | | |
| Nikolaievsk, on the Amoor | | | | | 6.4 | —14.2 | 83 | Calm | 0 | 0 | | | 4s | | | | | | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

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

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 30.00 | 762.0 | 30.11 | 764.7 | 59.4 | 15.2 | 71 | SSE | 2.9 | 1.28 | 2c | 3ks | W | | 0 | 0 | | Ar.tonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.13 | 765.2 | 30.18 | 766.6 | 65.5 | 18.6 | 63 | NW | 1.4 | 0.64 | 0 | 0 | | | Inap. | Inap. | Clear | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.17 | 690.2 | | | 62.6 | 17.0 | 67 | NE | 5.2 | 2.33 | 0 | 1 | | | 0 | 0 | Light clouds | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.90 | 708.7 | 30.08 | 763.9 | 70.3 | 21.3 | 33 | NW | 1.5 | 0.67 | 5 | 0 | W | | 0 | 0 | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 29.96 | 760.9 | 30.10 | 764.6 | 73.0 | 22.8 | 47 | NE | 2.6 | 1.11 | 2 | 4 | E | | 0 | 0 | Light clouds | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.18 | 741.1 | 30.06 | 763.4 | 69.1 | 20.6 | 56 | NNE | 2.9 | 1.28 | 5 | 0 | Calm | | 0 | 0 | Clouds | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.98 | 761.5 | 30.05 | 763.2 | 70.5 | 21.4 | 84 | ESE | 13.0 | 5.8 | 7c | 0 | W. | | 0 | 0 | Fair | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 30.11 | 764.7 | 30.21 | 767.2 | 61.0 | 16.1 | 79 | SSW | 10.6 | 4.7 | 0 | 7 | | SSW | 0 | 0 | | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.94 | 760.4 | 30.03 | 762.7 | 75.9 | 24.4 | 94 | SE | 0 | 0 | 6kn | 4kn | E | E | 1.978 | 50.25 | Cloudy | Leonardo de Tejeda, Chief of Engineers. |

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

## SWEDISH SERIES.

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

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.34 | 745.1 | 29.37 | 746.1 | 18.7 | — 7.4 | ..... | N | ..... | ..... | 6 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.39 | 746.4 | 29.44 | 747.7 | 25.5 | — 3.6 | 47 | N | ..... | ..... | 7 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.43 | 747.4 | 29.48 | 748.7 | 30.6 | — 0.8 | 48 | NW | ..... | ..... | 6 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.34 | 745.3 | 29.52 | 749.8 | 29.5 | — 1.4 | 53 | N | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.45 | 748.0 | 29.51 | 749.5 | 30.2 | — 1.0 | 96 | NNW | ..... | ..... | 7 | ..... | 3 | ..... | ..... | 0.004 | 0.1 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.45 | 747.9 | 29.52 | 749.8 | 30.0 | — 1.1 | 63 | NNW | 9.4 | 4.2 | ..... | ..... | 2 | ..... | N | 0.010 | 0.26 | ..... | Dr. Hildebrandsson. |

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

## SWISS SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.77 | 730.8 | 30.22 | 767.6 | 46.4 | 8.0 | 49 | SW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | Cloudy..... | The Observatory. |
| Zurich | 28.53 | 724.7 | 30.24 | 768.2 | 32.6 | 0.3 | 92 | W | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.063 | 1.6 | Cloudy ..... | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +5.8 mm.; Thermometer, +1.3 cent.; Relative Humidity, —14 per cent.

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

## TURKISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.65 | 753.0 | 40.6 | 4.8 | 83 | N | 17 | 7.5 | ..... | ..... | 10 | ..... | N | 1.882 | 47.8 | Thunder-storm.. | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanides. |
| Valona | ..... | ..... | 29.83 | 757.7 | 53.6 | 12.0 | ..... | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear ..... | A. Bertrand. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria.) Lee Obs'y | 29.92 | 760.0 | 30.04 | 762.9 | 67.6 | 19.7 | 63 | SW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 30.21 | 767.3 | 30.54 | 775.7 | 34 | 1.1 | ..... | SW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | W. R. Rigg. |
| *Chatham, N. B | ..... | ..... | 30.35 | 770.9 | 35 | 1.7 | 79 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | G. A. Blair. |
| Charlottetown, P. E. Island. | 30.24 | 768.1 | 30.28 | 769.1 | 29 | — 1.7 | 78 | NW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0.010 | 0.25 | Clear..... | H. J. Cundall, C. E. |
| Cornwall, Ontario | 30.30 | 769.6 | 30.50 | 774.7 | 31.7 | — 0.2 | 93 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Bright..... | James Smith, M. A. |
| Dalhousie, N. B | 30.41 | 772.4 | 30.45 | 773.4 | 35 | 1.7 | 90 | W | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.05 | 1.3 | Bright..... | H. A. Johnson. |
| Esquimault, B. C | 30.21 | 767.3 | 30.26 | 768.6 | 44.8 | 7.1 | 100 | NW | ..... | ..... | ..... | 10 | ..... | ..... | ..... | 0.06 | 1.5 | Rainy..... | W. H. Revis. |
| *Father Point, Quebec | 30.30 | 771.9 | 30.45 | 773.4 | 30 | — 1.1 | 91 | W | 17 | 7.6 | ..... | 5k | 5s | N | NW | 0 | " | Fair..... | J. McWilliams. |
| Fredericton, N. B | 30.37 | 771.4 | 30.44 | 773.2 | 35.0 | 1.7 | 73 | W | 8 | 3.6 | ..... | ..... | 10cs | ..... | ..... | 0 | 0 | Cloudy ..... | Prof. Harrison. |
| *Fort Garry Manitoba | 29.28 | 743.7 | 30.15 | 765.8 | 26 | — 3.3 | 100 | NE | 18 | 8.0 | ..... | 5k | 5n | NE | NE | 0.470 | 11.94 | Light rain... | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 29.29 | 741.7 | 30.34 | 770.6 | 41 | 5.0 | 74 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | James Grant. |
| *Halifax, N. S | 30.11 | 764.8 | 30.25 | 768.3 | 38 | 3.3 | 98 | NW | 10 | 4.5 | ..... | ..... | 10n | ..... | NW | 0 | 0 | Cloudy..... | F. Allison, M. A. |
| Hamilton, Ontario | 30.04 | 763.0 | 30.44 | 773.2 | 36.2 | 2.3 | 94 | NE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.88 | 758.9 | 29.91 | 759.7 | 36 | 2.2 | 100 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.68 | 17.3 | Dense fog.... | E. Weedon. |
| *Kingston, Ontario | 30.15 | 765.8 | 30.50 | 774.7 | 35 | 1.7 | 85 | NE | 2 | 0.9 | ..... | 0 | Sm'e | ..... | NE | 0 | 0 | Clear..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.04 | 763.0 | 30.08 | 764.0 | 31 | — 0.6 | ..... | N | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0.18 | 4.6 | Overcast..... | C. H. Rigby. |
| *Montreal, Quebec | 30.35 | 770.9 | 30.56 | 776.2 | 35 | 1.7 | 77 | E | 6 | 2.7 | ..... | 0 | Fog | ..... | ..... | 0 | 0 | Clear ..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.69 | 754.1 | 30.41 | 772.4 | 42 | 5.6 | 67 | E | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Rev. R. Mosley. |
| Peterboro, Ontario | 29.69 | 754.1 | 30.47 | 773.9 | 37.5 | 3.1 | 62 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.67 | 753.6 | 30.39 | 771.9 | 39 | 3.9 | 82 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | H. Morgan. |
| Port Hastings, N. S | 30.15 | 765.8 | 30.20 | 767.1 | 28.7 | — 1.8 | ..... | NW | 14 | 6.3 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine ..... | Peter Grant. |
| Port Stanley, Ontario | 29.68 | 753.9 | 30.34 | 770.6 | 41 | 5.0 | 78 | E | 7 | 3.1 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Hazy ..... | M. Payne. |
| *Quebec, Quebec | 30.20 | 767.1 | 30.54 | 775.7 | 31 | — 0.6 | 79 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear, ..... | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 30.02 | 762.5 | 30.51 | 774.9 | 25 | — 3.9 | 94 | SE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | W. H. McIntyre. |
| St. Andrews, N. B | 30.37 | 771.4 | 30.42 | 772.7 | 34 | 1.1 | 82 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Dr. Gove. |
| St. John, N. B | 30.22 | 767.6 | 30.40 | 772.1 | 34 | 1.1 | 89 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Fine ..... | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.80 | 751.8 | 30.33 | 770.4 | 46 | 7.8 | 77 | SE | 5 | 2.2 | ..... | 8k | 0 | ..... | ..... | 0 | 0 | Cloudy ..... | K. Stewart. |
| Stayner, Ontario | 29.62 | 752.3 | 30.43 | 772.9 | 38 | 3.3 | 86 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | R. J. Cole. |
| Stratford, Ontario | 29.95 | 737.9 | 30.37 | 771.4 | 39.0 | 3.9 | 82 | E | 6 | 2.7 | ..... | ..... | 3s | ..... | ..... | 0 | 0 | Fair..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.06 | 763.5 | 30.09 | 764.3 | 33 | 0.6 | 77 | NW | 10 | 4.5 | ..... | ..... | 10s | ..... | NW | 0.16 | 3.8 | Cloudy..... | T. C. Hill. |
| *Toronto, Ontario | 30.04 | 763.0 | 30.43 | 772.9 | 40 | 4.4 | 80 | NE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Magnetic Observatory. |
| Windsor, N. S | 30.20 | 767.1 | 30.29 | 769.4 | 38.5 | 3.6 | 95 | NW | 12 | 5.4 | ..... | ..... | 8k | ..... | ..... | 0 | 0 | Fair ..... | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 39.0 | 3.9 | 100 | SE | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0.25 | 6.3 | Foggy ..... | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner, St. Johns N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182ft. or 360.3 m.

UNITED STATES SERIES.

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

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 30.28 | 769.1 | 30.53 | 775.4 | 35 | 1.7 | 90 | N | 2 | 0.9 | ..... | 4c | Haze | NW | ..... | 0 | 0 | Hazy | ..... |
| Alpena, Michigan | 29.60 | 751.8 | 30.27 | 768.8 | 38 | 3.3 | 90 | SE | 4 | 1.8 | ..... | 0 | 8s | ..... | SE | 0 | 0 | Fair | ..... |
| Atlantic City, New Jersey | 30.47 | 773.9 | 30.49 | 774.4 | 41 | 5.0 | 91 | W | 3 | 1.3 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | ..... |
| Augusta, Georgia | 30.15 | 765.8 | 30.33 | 770.4 | 57 | 13.9 | 94 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Smoky | ..... |
| Baltimore, Maryland | 30.44 | 773.2 | 30.49 | 774.4 | 47 | 8.3 | 77 | E | 2 | 0.9 | ..... | Haze | Fog | Calm | Calm | 0 | 0 | Foggy | ..... |
| Barnegat, New Jersey | 30.48 | 774.2 | 30.50 | 774.7 | 45 | 7.2 | 84 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | ..... |
| Bismarck, Dakota | 27.87 | 707.9 | 29.72 | 754.9 | 29 | — 1.7 | 100 | NE | 36 | 16.1 | ..... | ..... | 10n | ..... | Calm | 0.67 | 17.0 | Light rain | ... |
| Boise City, Idaho | 27.51 | 698.7 | 30.39 | 771.9 | 28 | — 2.2 | 77 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | ..... |
| Boston, Massachusetts | 30.34 | 770.6 | 30.50 | 774.7 | 43.5 | 6.4 | 48 | NW | 10 | 4.5 | ..... | 1c | Haze | NW | ..... | 0 | 0 | Clear | ..... |
| Brackettville, Texas | 28.64 | 727.4 | 29.67 | 753.6 | 47 | 8.3 | 34 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | ..... |
| Breckenridge, Minnesota | 28.71 | 729.2 | 29.68 | 753.9 | 50 | 10.0 | 93 | E | 10 | 4.5 | ..... | ..... | 10s | ..... | SE | 1.86 | 47.2 | Cloudy | ..... |
| Brownsville, Texas | 29.68 | 753.9 | 29.75 | 755.6 | 58 | 14.4 | 76 | NE | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | ..... |
| Buffalo, New York | 29.65 | 753.1 | 30.36 | 771.4 | 46 | 7.8 | 69 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | ..... |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 47 | 8.3 | ..... | NW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | ..... |
| Burlington, Vermont | 30.28 | 769.1 | 30.56 | 776.2 | 35 | 1.7 | 70 | N | 3 | 1.3 | ..... | 1c | 0 | W | ..... | 0 | 0 | Clear | ..... |
| Cairo, Illinois | 29.57 | 751.1 | 29.95 | 760.7 | 64 | 17.8 | 58 | S | 17 | 7.6 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | ..... |
| Camp Grant, Arizona | 24.96 | 634.0 | 29.76 | 755.9 | 37 | 2.8 | 38 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | ..... |
| Camp Verde, Arizona | 26.82 | 681.2 | 30.31 | 769 9 | 31 | — 0.6 | 48 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | ..... |
| Campo, California | 27.52 | 699.0 | 30.10 | 764.5 | 26 | —3.3 | 73 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | ..... |
| Cape Hatteras, N. Carolina | 30.42 | 772.7 | 30.42 | 772.7 | 54 | 12.2 | 93 | E | 3 | 1.3 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | ..... |
| Cape Henry, Virginia | 30.42 | 772.7 | 30.44 | 773.2 | 50 | 10.0 | 86 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | ..... |
| Cape Lookout, N. Carolina | 30.40 | 772.1 | 30.42 | 772.7 | 57 | 13.9 | 87 | NE | 10 | 4.5 | ..... | 2ck | 0 | SE | ..... | 0 | 0 | Fair | ..... |
| Cape May, New Jersey | 30.46 | 773.7 | 30.50 | 774.7 | 46 | 7 8 | 84 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | ..... |
| Charleston, South Carolina | 30.29 | 769.4 | 30.36 | 771.1 | 61 | 16.1 | 88 | E | 6 | 2.7 | ..... | 0 | 1ks | ..... | E | 0 | 0 | Clear. | ..... |
| Cheyenne, Wyoming | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.10 | 2.5 | ..... | ..... |
| Chicago, Illinois | 29.36 | 745.7 | 30.04 | 763.0 | 53 | 11.7 | 80 | S | 6 | 2.7 | ..... | ..... | 10n | ..... | S | 0.09 | 2.3 | Light rain | ... |
| Cincinnati Ohio | 29.54 | 750.3 | 30.18 | 766.6 | 58 | 14.4 | 67 | SE | 2 | 0.9 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | ..... |
| Cleveland, Ohio | 29.56 | 750.8 | 30.30 | 769.6 | 50 | 10.0 | 58 | SE | 10 | 4.5 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | ..... |
| Concho, Texas | 27.86 | 707.6 | 29.55 | 750.6 | 40 | 4.4 | 23 | NW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | ..... |
| Corsicana, Texas | 29.28 | 743.7 | 29.74 | 755.4 | 50 | 10.0 | 93 | E | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.23 | 5.8 | Light rain | .... |
| Davenport, Iowa | 29.24 | 742.7 | 29.86 | 758.4 | 58 | 14.4 | 76 | E | 8 | 3.6 | ..... | 9cs | Haze | S | Calm | 0 | 0 | Cloudy | ..... |
| Deadwood, Dakota | 25.16 | 639.0 | ..... | ..... | 22 | — 5.6 | 100 | N | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 1.10 | 27.9 | Light snow | .. |
| Denison, Texas | 28.98 | 736.1 | 29.77 | 756.1 | 49 | 9.4 | 85 | SE | 14 | 6.3 | ..... | ..... | 10s | ..... | SW | 0.20 | 5.1 | Cloudy | ..... |
| Denver, Colorado | 24.42 | 620.3 | 29.64 | 752.8 | 33 | 0.6 | 70 | NW | 24 | 10.7 | ..... | ..... | 10s | ..... | Calm | 0.10 | 2.5 | Cloudy | ..... |
| Detroit, Michigan | 29.57 | 751.1 | 30.26 | 768.6 | 44 | 6.7 | 68 | NE | 4 | 1.8 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | ..... |
| Dodge City, Kansas | 26.94 | 684.3 | 29.23 | 742.4 | 33 | 0.6 | 79 | NW | 28 | 12.5 | ..... | 0 | 5s | ..... | NW | 0.04 | 1.0 | Fair | ..... |
| Dubuque, Iowa | 29.19 | 741.4 | 29.87 | 758.7 | 56 | 13.3 | 69 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | ..... |
| Duluth, Minnesota | 29.23 | 742.4 | 29.91 | 759.7 | 43 | 6.1 | 87 | NE | 14 | 6.3 | ..... | ..... | 10s | ..... | NE | 0.17 | 4.3 | Cloudy | ..... |
| Eagle Pass, Texas | 29.04 | 737.6 | 29.88 | 758.9 | 47 | 8.3 | 70 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | ..... |
| Eastport, Maine | 30.34 | 770.6 | 30.42 | 772.7 | 35 | 1.7 | 74 | NW | 10 | 4.5 | ..... | 5c | Haze | Calm | Calm | 0 | 0 | Fair | ..... |
| Erie, Pennsylvania | 29.60 | 751.8 | 30.32 | 770.1 | 53 | 11.7 | 61 | SE | 15 | 6.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | ..... |
| Escanaba, Michigan | 29.48 | 748.8 | 30.14 | 765.5 | 50 | 10.0 | 86 | NE | 4 | 1 8 | ..... | ..... | 10s | ..... | NE | 0.02 | 0.5 | Cloudy | ..... |
| Florence, Arizona | 28.36 | 720.3 | 29.96 | 761.0 | 35 | 1.7 | 53 | N | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | ..... |
| Fort Bayard, New Mexico | 23.94 | 608.1 | 29.94 | 760.5 | 29 | — 1.7 | 59 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | ..... |
| Fort Craig, New Mexico | 25.33 | 643.4 | ..... | ..... | 32 | 0.0 | 50 | NW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | ..... |
| Fort Gibson, Indian Ter | 29.21 | 741.9 | 29.75 | 755.6 | 48 | 8.9 | 85 | S | 7 | 3.1 | ..... | ..... | 10s | ..... | S | 0.77 | 19.6 | Cloudy | ..... |
| Fort Griffin, Texas | 28.48 | 723.4 | 29.78 | 756.4 | 41 | 5.0 | 49 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | ..... |
| Fort St. Michael, Alaska | 29.61 | 752.1 | 29.64 | 752.8 | 0 | —17.8 | 100 | NE | 1 | 0.4 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | ..... |
| Fort Sill, Indian Territory | 28.54 | 724.9 | 29.64 | 752.8 | 45 | 7.2 | 53 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | ..... |
| Galveston, Texas | 29.67 | 753.6 | 29.71 | 754.6 | 54 | 12.2 | 100 | N | 43 | 19.2 | ..... | ..... | 10ks;n | ..... | SW;N | 0.87 | 22 1 | Light rain | ... |
| Grand Haven, Michigan | 29.46 | 748.3 | 30.11 | 764.8 | 54 | 12.2 | 74 | SE | 8 | 3.6 | ..... | 2c | 2s | SW | Calm | 0 | 0 | Fair | ..... |
| Indianapolis, Indiana | 29.34 | 745.2 | 30.11 | 764.8 | 60 | 15.6 | 60 | SE | 10 | 4.5 | ..... | 8cs | Sm'e | Calm | ..... | Inap. | Inap. | Fair | ..... |
| Indianola, Texas | 29.74 | 755.4 | 29.77 | 756.1 | 57 | 13.9 | 81 | NE | 27 | 12.1 | ..... | ..... | 10ks | ..... | Calm | 1.57 | 39.9 | Cloudy | ..... |
| Jacksboro, Texas | 28.63 | 727.2 | 29.70 | 755.9 | 48 | 8.9 | 43 | NE | 7 | 3.1 | ..... | 0 | 1s | ..... | ..... | Inap. | Inap. | Clear | ..... |
| Jacksonville, Florida | 30.20 | 767.1 | 30.23 | 767.8 | 64 | 17.8 | 78 | NE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | ..... |
| Keokuk, Iowa | 29.14 | 740.1 | 29.74 | 755.4 | 54 | 12.2 | 96 | SE | 10 | 4.5 | ..... | ..... | 10n | ..... | Calm | 0.29 | 7.4 | Light rain | ... |
| Key West, Florida | 30.04 | 763.0 | 30.07 | 763.8 | 72 | 22.2 | 76 | E | 15 | 6.7 | ..... | ..... | 10s | ..... | E | 0.01 | 0.3 | Cloudy | ..... |
| Kittyhawk, North Carolina | 30.40 | 772.1 | 30.43 | 772.9 | 49 | 9.4 | 100 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | ..... |
| Knoxville, Tennessee | 29.23 | 742.4 | 30.26 | 768.6 | 49 | 9.4 | 71 | NE | 1 | 0.4 | ..... | 1c | 0 | NW | ..... | 0 | 0 | Clear | ..... |
| La Crosse, Wisconsin | 29.12 | 739.6 | 29.83 | 757.7 | 56 | 13.3 | 81 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | E | 0.03 | 0.8 | Cloudy | ..... |
| La Mesilla, New Mexico | 25.97 | 659.6 | 30.12 | 765.0 | 34 | 1.1 | 61 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | ..... |
| Laredo, Texas | 29.38 | 746.2 | 29.72 | 754.9 | 55 | 12.8 | 68 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | ..... |
| Leavenworth, Kansas | 28.77 | 730.7 | 29.59 | 751.6 | 49 | 9.4 | 64 | S | 12 | 5.4 | ..... | ..... | 10ks | ..... | S | 0.59 | 15.0 | Cloudy | ..... |
| Los Angeles, California | 29.80 | 756.9 | 30.15 | 765.8 | 45 | 7.2 | 69 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | ..... |
| Louisville, Kentucky | 29.56 | 750.8 | 30.12 | 765 0 | 60 | 15.6 | 55 | SE | 12 | 5.4 | ..... | 5c | Sm'e | Calm | Calm | 0 | 0 | Fair | ..... |
| Lynchburg, Virginia | 29.63 | 752.6 | 30.32 | 770.1 | 53 | 11.7 | 66 | NE | 2 | 0.9 | ..... | 0 | 5ks | ..... | ..... | 0 | 0 | Fair | ..... |
| Maricopa Wells, Arizona | ..... | ..... | ..... | ..... | 40 | 4.4 | 39 | N | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | ..... |
| Marquette, Michigan | 29.41 | 747.0 | 30.11 | 764.8 | 50 | 10.0 | 65 | SE | 4 | 1.8 | ..... | 2ck | 2s | S | Calm | 0 | 0 | Fair | ..... |
| Mason, Texas | 28.11 | 714.0 | 29.86 | 758.4 | 49 | 9.4 | 24 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | ..... |
| Memphis, Tennessee | 29.55 | 750.6 | 29.86 | 758.4 | 63 | 17.2 | 66 | SE | 16 | 7.2 | ..... | ..... | 10s | ..... | SE | 0.05 | 1.3 | Cloudy | ..... |
| Milwaukee, Wisconsin | 29.37 | 746.0 | 30.07 | 763.8 | 45 | 7.2 | 92 | SE | 10 | 4.5 | ..... | ..... | 10ks | ..... | SE | 0.43 | 10.9 | Cloudy | ..... |
| Mobile, Alabama | 29.97 | 761.2 | 30.02 | 762.5 | 63 | 17 2 | 89 | SE | 16 | 7.2 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | ..... |
| Montgomery, Alabama | 29.91 | 759.7 | 30.14 | 765.5 | 61 | 16.1 | 79 | SE | 11 | 4.9 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | ..... |
| Morgantown, West Virginia | 29.28 | 743.7 | 30.37 | 771.4 | 46 | 7.8 | 69 | SE | 3 | 1.3 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | ..... |
| Mt. Washington, N. H. | 24.05 | 610.9 | 30.41 | 772.4 | 22 | — 5.6 | 59 | N | 48 | 21.5 | ..... | 8c | Haze | N | Calm | 0 | 0 | Fair | ..... |
| Nashville, Tennessee | 29.56 | 750 8 | 30.09 | 764.3 | 60 | 15.6 | 71 | E | 9 | 4.0 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | ..... |
| New Haven, Connecticut | 30.40 | 772.1 | 30.53 | 775.4 | 48 | 8.9 | 70 | Calm | 0 | 0 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | ..... |
| New London, Connecticut | 30.47 | 773.9 | 30.52 | 775.2 | 45 | 7.2 | 84 | Calm | 0 | 0 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear. | ..... |
| New Orleans, Louisiana | 29.79 | 756.7 | 29.85 | 758.2 | 69 | 20.6 | 75 | SE | 24 | 10.7 | ..... | 2k | 5ks | Calm | S | 0.04 | 1.0 | Fair | ... |
| Newport, Rhode Island | 30.46 | 773.7 | 30.51 | 774.9 | 44 | 6.7 | 60 | N | 4 | 1.8 | ..... | 4c | 0 | W | ..... | 0 | 0 | Fair | ..... |
| New York, New York | 30.33 | 770.4 | 30.51 | 774.9 | 50 | 10.0 | 77 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | ..... |
| Norfolk, Virginia | 30.38 | 771.6 | 30.44 | 773.2 | 50 | 10.0 | 86 | SE | 4 | 1.8 | ..... | Haze | Sm'e | ..... | ..... | 0 | 0 | Smoky | ..... |
| North Platte, Nebraska | 26.51 | 673.3 | 29.06 | 738.1 | 31 | — 0.6 | 89 | NW | 28 | 12.5 | ..... | ..... | 10n | ..... | NW | 0.08 | 2.0 | Light snow | .. |
| Olympia, Washington Ter. | 30.23 | 767.8 | 30.27 | 768.8 | 41 | 5.0 | 91 | SW | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | ..... |
| Omaha, Nebraska | 28.44 | 722.4 | 29.50 | 749.3 | 45 | 7.2 | 76 | S | 16 | 7.2 | ..... | 2c | 2s | Calm | S | 0.88 | 22.4 | Fair | ..... |
| Oswego, New York | 30.15 | 765.8 | 30.48 | 774.2 | 42 | 5.6 | 74 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | ..... |
| Pembina, Dakota | 29.12 | 739.6 | 29.97 | 761.2 | 32.5 | 0.3 | 100 | N | 24 | 10.7 | ..... | ..... | 10n | ..... | N | 1.62 | 41.1 | Light rain | ... |
| Philadelphia, Pennsylvania | 30.47 | 773.9 | 30.52 | 775.2 | 48 | 8.9 | 77 | SE | 1 | 0.4 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Fair | ..... |
| Phœnix, Arizona | 28.91 | 734 3 | 30.77 | 781.5 | 43 | 6.1 | 36 | W | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | ..... |
| Pike's Peak, Colorado | 17.21 | 437.1 | 29.42 | 747.3 | —14 | —25.6 | 100 | NW | 48 | 21.5 | ..... | ..... | 10n | ..... | Calm | 0.22 | 5.6 | Light snow | .. |
| Ploche, Nevada | 24.14 | 613.1 | 29.90 | 759.4 | 19 | — 7.2 | 84 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | ..... |
| Pittsburg, Pennsylvania | 29.52 | 749.8 | 30.35 | 770.9 | 46 | 7.8 | 77 | E | 2 | 0.9 | ..... | 5k | Fog | S | Calm | 0 | 0 | Fair | ..... |
| Port Huron, Michigan | 29.59 | 751.6 | 30.26 | 768.6 | 48 | 8.9 | 70 | SE | 4 | 1.8 | ..... | 5ck | Haze | W | Calm | 0 | 0 | Fair | ..... |
| Portland, Maine | 30.43 | 772.9 | 30.49 | 774.4 | 40 | 4.4 | 56 | N | 14 | 6.3 | ..... | 5k | Haze | W | ..... | 0 | 0 | Fair | ..... |
| Portland, Oregon | 30.27 | 768.8 | 30.38 | 771.6 | 41 | 5.0 | 91 | NW | 4 | 1.8 | ..... | ..... | 2s | ..... | Calm | 0 | 0 | Clear | ..... |
| Prescott, Arizona | 24.77 | 629.2 | 30.13 | 765.3 | 27 | — 2 8 | 30 | N | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | ..... |
| Punta Rassa, Florida | 30.08 | 764.0 | 30.10 | 764.5 | 67 | 19.4 | 79 | E | 12 | 5.4 | ..... | 5cs;1c | 0 | W;E | ..... | 0 | 0 | Fair | ..... |
| Red Bluff, California | 29.91 | 759.7 | 30.29 | 769.4 | 43 | 6.1 | 75 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | ..... |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rochester, New York | 29.78 | 756.4 | 30.42 | 772.7 | 43 | 6.1 | 67 | SE | 7 | 3.1 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Roseburg, Oregon | 29.74 | 755.4 | 30.38 | 770.4 | 38 | 3 3 | 96 | Calm | 0 | 0 | ..... | 1cs | 1s | Calm | Calm | 0 | 0 | Clear | |
| Sacramento, California | 30.20 | 767.1 | 30.28 | 769.1 | 48 | 8.1 | 92 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.29 | 744.0 | 29.84 | 757.9 | 63 | 17.2 | 62 | S | 16 | 7.2 | ..... | ..... | 10s | ..... | S | Inap. | Inap. | Cloudy | |
| St. Marks, Florida | 30.15 | 765.8 | 30.17 | 766.3 | 61 | 16.1 | 88 | SE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul, Minnesota | 28.89 | 733.8 | 29.69 | 754.1 | 51 | 10.6 | 86 | E | 7 | 3.1 | ..... | ..... | 10s | ..... | S | 0.08 | 2.0 | Cloudy | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.81 | 655.6 | 30.14 | 765.5 | 29 | — 1.7 | 78 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Antonio, Texas | 29.09 | 738.9 | 29.67 | 753.6 | 50 | 10.0 | 93 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.41 | 10.4 | Clear | |
| San Diego, California | 30.10 | 764.5 | 30.18 | 766.6 | 45 | 7.2 | 61 | SE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandusky, Ohio | 29.59 | 751.6 | 30.27 | 768.8 | 53 | 11.7 | 67 | S | 12 | 5.4 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Fair | |
| Sandy Hook, New Jersey | 30.49 | 774.4 | 30.51 | 774.9 | 42 | 5.6 | 91 | W | 4 | 1.8 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| San Francisco, California | 30.22 | 767.6 | 30.29 | 769.4 | 48 | 8.9 | 85 | SW | 3 | 1.3 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Santa Fé, New Mexico | 23.00 | 584.2 | 29.54 | 750.3 | 20 | — 6.7 | 63 | N | 3 | 1.3 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| Savannah, Georgia | 30.21 | 767.3 | 30.31 | 769.9 | 60 | 15.6 | 82 | E | 4 | 1.8 | ..... | 5ck | 1s | SE | Calm | 0 | 0 | Fair | |
| Shreveport, Louisiana | 29.59 | 751.6 | 29.81 | 757.2 | 49 | 9.4 | 100 | N | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 4.00 | 101.6 | Light rain | |
| Smithville, North Carolina | 30.36 | 771.1 | 30.40 | 772.1 | 60 | 15.6 | 94 | NE | 6 | 2.7 | ..... | 0 | 8ks | ..... | E | 0 | 0 | Cloudy | |
| Springfield, Massachusetts | 30.32 | 770.1 | 30.45 | 773.4 | 39 | 3.9 | 82 | Calm | 0 | 0 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Fair | |
| Stockton, Texas | 26.76 | 679.7 | 29.76 | 755.9 | 86 | 2.2 | 45 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 30.44 | 773.2 | 30.49 | 774.4 | 39 | 3.9 | 82 | NE | 8 | 3.6 | ..... | 1cs | 0 | Calm | ..... | 0 | 0 | Hazy | |
| Toledo, Ohio, | 29.55 | 750.6 | 30.24 | 768.1 | 47 | 8.3 | 77 | NE | 4 | 1.8 | ..... | 5c | Haze | W | Calm | 0 | 0 | Fair | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 31 | — 0.6 | 59 | N | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tybee Island, Georgia | 30.26 | 768.6 | 30.29 | 769.4 | 60 | 15.6 | 88 | E | 12 | 5.4 | ..... | 1k | Haze | Calm | Calm | 0 | 0 | Clear | |
| Umatilla, Oregon | 30.07 | 763.8 | ..... | ..... | 28 | — 2.2 | 77 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.55 | 750.6 | 29.80 | 756.9 | 65 | 18.3 | 94 | S | 12 | 5.4 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Virginia City, Montana | 24.48 | 621.8 | 29.96 | 761.0 | 16 | — 8.9 | 66 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Visalia, California | 29.94 | 760.5 | 30.33 | 770.4 | 40 | 4.4 | 100 | Calm | 0 | 0 | ..... | 0 | 1s | ..... | NW | 0 | 0 | Clear | |
| Washington, D. C. | 30.38 | 771.6 | 30.50 | 774.7 | 45 | 7.2 | 84 | SE | 4 | 1.8 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Smoky | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 42 | 5.6 | 74 | NW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.32 | 770.1 | 30.40 | 772.1 | 57 | 13.9 | 93 | E | 9 | 4.0 | ..... | 5k | 0 | E | ..... | 0 | 0 | Fair | |
| Winnemucca, Nevada | 25.93 | 658.6 | 30.29 | 769.4 | 21 | — 6.1 | 71 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wood's Holl, Mass | 30.45 | 773.4 | 30.50 | 774.7 | 44 | 6.7 | 59 | NW | 5 | 2.2 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear | |
| Yankton, Dakota | 28.24 | 717.3 | 29.50 | 749.3 | 42 | 5.6 | 74 | SE | 16 | 7.2 | ..... | 0 | 2s | ..... | SE | 0.27 | 6.9 | Fair | |
| Yuma, Arizona | 30.05 | 763.3 | 30.22 | 767.6 | 57 | 13.9 | 22 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A | 30.43 | 772.9 | 30.49 | 774.4 | 15.0 | — 9.4 | 91 | NE | 4 | 1.8 | ..... | 2c | 2s | NE | ..... | 0 | 0 | Fair | J. Fortescue, W. Wood |
| Havana, Cuba, W. I | 30.00 | 762.0 | 30.02 | 762.5 | 71 | 21.7 | 90 | SE | 3.6 | 1.6 | ..... | 8c | 0 | W | ..... | 0 | 0 | Fair | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | 30.08 | 764.0 | 30.09 | 764.3 | 76 | 24.4 | 90 | Calm | 0 | 0 | ..... | 8c | 5n | Calm | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I | 29.91 | 759.7 | 29.99 | 761.7 | 78 | 25.6 | ..... | NE | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | F. M. Everett. |
| Paramaribo, D. Guiana, S. A | ..... | ..... | 30.00 | 762.0 | 82 | 27.8 | 87 | E | ..... | ..... | 2 | ..... | 8ks | ..... | ..... | 0.660 | 16.76 | Cloudy | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | 30.04 | 763.1 | 30.05 | 763.3 | 85.6 | 29.8 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.226 | 5.75 | Cloudy | Dr. H. Groot. |
| Medellin, Colombia, S. A | 25.21 | 640.3 | ..... | ..... | 67.8 | 19.9 | 80 | Calm | ..... | ..... | 0 | 0 | Haze | ..... | ..... | 0 | 0 | ..... | Thomas Herran |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Mahawac, Medillin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,700 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.8 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fort Whipple, 5,250 (?) ft., or 1,600.2 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,863.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,546 (?) ft., or 776.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,060 (?) ft., or 627.8 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,276 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.84 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er. 0—10. | Clouds. Amount. Low'r. 0—10. | Clouds. Direction. Up'er. From— | Clouds. Direction. Low'r. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.22 | 767.6 | 45 | 7.2 | 44 | 6.7 | 92 | Calm | 0 | 0 | ..... | ..... | 2s | ..... | W | 0 | 0 | ..... | ..... | Clear | |
| Navy Yard, Pensacola, Fla. | 30.18 | 766.6 | 64 | 17.8 | 65 | 18.3 | 94 | E | 17 | 7.6 | ..... | ..... | 2 | ..... | SE | 0 | 0 | ..... | ..... | Clear | |
| Navy Yard, Portsmouth, N.H | 30.51 | 774.9 | 63 | 17.2 | 39 | 3.9 | 64 | Calm? | ..... | ..... | 0? | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Misty | |
| Naval Hospital, Yokohama, Japan | 30.02* | 762.5* | 51 | 10.6 | 41 | 5.0 | 65 | NNE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Adams. Panama | 29.92 | 760.0 | 80 | 26.7 | 79 | 26.1 | 82 | NNW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy | |
| Alliance, Piraeus, Greece | 29.70‡ | 754.4‡ | ..... | ..... | 65 | 18.3 | 68 | SE | ..... | ..... | 0–1 | ..... | 4 | ..... | N | ..... | ..... | ..... | ..... | Cloudy | |
| Ashuelot. Shanghai, China | 30.35* | 770.9* | 55 | 12.8 | 46 | 7.8 | 84 | E | ..... | ..... | 3–4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Squally | |
| Canonicus, New Orleans, La | 29.89 | 759.2 | 50 | 10.0 | 68 | 20.0 | 95 | ESE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy | |
| Colorado, New York, N. Y. | 30.49‡ | 774.4‡ | ..... | ..... | 47 | 8.3 | 70 | NNE | 1 | 0.4 | ..... | ..... | 5 | ..... | NNE | ..... | ..... | ..... | ..... | Foggy | |
| Constitution, N. 41° 29′ W. 56° 28′ | 30.07‡ | 763.8‡ | ..... | ..... | 43 | 6.1 | 92 | NE | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | Long | NE | Overcast | |
| Despatch, Constantinople, Turkey. | 29.82 | 757.4 | 71 | 21.7 | 40 | 4.4 | 91 | N | ..... | ..... | 4 | ..... | 10 | ..... | SW | ..... | ..... | ..... | ..... | Rainy | |
| Enterprise, New Orleans, La | 29.88‡ | 758.9‡ | ..... | ..... | 68 | 20.0 | 84 | SE | ..... | ..... | 5 | ..... | 8 | ..... | SE | ..... | ..... | ..... | ..... | Fair | |
| Franklin, Norfolk, Va | 30.42‡ | 772.7‡ | ..... | ..... | 50 | 10.0 | 86 | Calm | 0 | 0 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | D. clouds | |
| Guard, Porto Grande, Cape Verde Islands. | 30.10 | 764.5 | 75 | 23.9 | 75 | 23.9 | 68 | NE | ..... | ..... | 2–4 | ..... | 2 | ..... | NNE | ..... | ..... | Mod'ate Ground | NW | Clear | |
| Marion, Piraeus, Greece | 29.70 | 754.4 | 62 | 16.7 | 65 | 18.3 | 49 | SE | ..... | ..... | 1 | ..... | 5 | ..... | N | 0 | 0 | ..... | ..... | Fair | |
| Michigan, Erie, Pa | 29.81 | 757.2 | 63 | 17.2 | 54 | 12.2 | 61 | SSE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Monongahela, N. 16° 02′, E. 119° 09′ | 30.17* | 766.3* | 83 | 28.3 | 83 | 28.3 | 83 | N | ..... | ..... | 3–4 | ..... | 1 | ..... | ..... | ..... | ..... | Mod'ate | N | D. clouds | |
| New Hampshire, Port Royal, S. C | 30.50 | 774.7 | 61 | 16.1 | 64 | 17.8 | 100 | E | 6 | 2.7 | ..... | ..... | 8 | ..... | W | 0 | 0 | ..... | ..... | ..... | |
| Omaha, S. 14° 00′, W. 31° 02′ | 30.18* | 766.6* | 82 | 27.8 | 81 | 27.2 | 83 | E | 5 | 2.2 | ..... | ..... | 1 | ..... | E | 0 | 0 | Smooth | ..... | Pleasant | |
| Onward, Callao, Peru | 30.00† | 762.0† | ..... | ..... | 71 | 21.7 | 90 | Calm | ..... | ..... | 0 | ..... | 5 | ..... | ..... | ..... | ..... | Long | W | Misty | |
| Ossipee, N. 20° 30′ W. 91° 09′ | 29.83‡ | 757.7‡ | ..... | ..... | 78 | 25.6 | 86 | ESE | ..... | ..... | 5 | ..... | 8 | ..... | WSW | ..... | ..... | Smooth | ESE | Fair | |
| Palos, Shanghai, China | 30.39* | 771.9* | 54 | 12.2 | 46 | 7.8 | 92 | SE | ..... | ..... | 2–3 | ..... | 10 | ..... | S&E | ..... | ..... | ..... | ..... | Overcast | |
| Pensacola, Honolulu, H. I. | 30.26 | 768.6 | 73 | 22.8 | 70 | 21.1 | 90 | NE | 5 | 2.2 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Plymouth. Norfolk, Va | 30.36‡ | 771.1‡ | ..... | ..... | 52 | 11 1 | 86 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Light haze | |
| Powhatan, Santiago de Cuba, W. I. | 30.09‡ | 764.3‡ | ..... | ..... | 78 | 25.6 | 91 | NNE | 3.6 | 1.6 | ..... | ..... | 5 | ..... | NNE | 0.03 | 0.8 | Smooth | ..... | Clear | |
| Ranger. Amoy, China | 30.38* | 771.6* | ..... | ..... | 59.5 | 15.3 | 73 | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Smooth | ..... | Drizzling | |
| Rio Bravo, Brownsville, Texas | ..... | ..... | ..... | ..... | 57 | 13.9 | 94 | NW | ..... | ..... | 4 | ..... | 10 | ..... | NW | ..... | ..... | ..... | ..... | Overcast | |
| Santee, Annapolis, Md | 30.53* | 775.4* | 60 | 15.6 | 47 | 8.3 | 85 | N | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Hazy | |
| Saratoga, Washington, D. C | 30.39* | 771.9* | ..... | ..... | 45 | 7.2 | 92 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Misty | |
| St. Louis, League Island, Pa | 30.37 | 771.4 | 63 | 17.2 | 39 | 3.9 | 100 | SE | 5 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Foggy | |
| Supply, N. 47° 45′ W. 33° 45′ | 30.57 | 776.5 | 59 | 15.0 | 51 | 10.6 | 59 | N | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Smooth | ..... | Fair | |
| Swatara, N. 16° 36′ W. 74° 03′ | 30.07* | 763.8* | ..... | ..... | 79 | 26.1 | 86 | ENE | ..... | ..... | 4 | ..... | 3 | ..... | E | ..... | ..... | Smooth | ..... | D. clouds | |
| Tennessee, N. 8° 30′ 22″, E. 109° 09′ 24″ | 30.05* | 763.3* | 83 | 28.3 | 83 | 28.3 | 83 | NE | 5 | 2.2 | ..... | ..... | 6 | ..... | NE | 0 | 0 | Long | NE | D. clouds | |
| Trenton, Smyrna, Turkey | 29.72‡ | 754.9‡ | ..... | ..... | 65 | 18.3 | 54 | S | ..... | ..... | 6 | ..... | 5 | ..... | S | 0.3 | 8. | Mod'ate | S | Squally | |
| Tuscarora, N. 29° 10,′ W. 117° 35′ | 30.19 | 766.8 | 62 | 16.7 | 61 | 16.1 | 71 | NW | ..... | ..... | 4–5 | ..... | 2 | ..... | Calm | 0 | 0 | Mod'ate | NW | Fair | |
| Vandalia, Piraeus, Greece | 29.62‡ | 752.3‡ | ..... | ..... | 65 | 18.3 | 54 | S | ..... | ..... | 1 | ..... | 2 | ..... | E | ..... | ..... | ..... | ..... | Clear | |
| Wabash, Boston, Mass | 30.47‡ | 773.9‡ | ..... | ..... | 42 | 5.6 | 91 | NW | 5 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

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

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | Character. | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | |
| S. S. City of Panama, Nanaimo, B. C. | | | 30.38† | 771.6† | | | | SW | | | 1 | | 8 | | SE | | | Variable. | Capt. Seabury. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, Yokohama, Japan | | | | | 39 | 3.9 | | NNW | | | 6 | | | | | | | Blue sky. | Capt. Maury. |
| S. S. Colima, N. 24° 9′, W. 112° 15′ | | | 29.93† | 760.2† | 66 | 18.9 | 74 | E | | | 6 | | 5 | | NNW | Mod'ate | NNW | D. clouds | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic, N. 41° 48′, W. 60° 24′ | | | 30.18* | 766.6* | | | | NNW | | | 5 | | 10 | | NW | Light | SW | Cloudy | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, N. 51° 23′, W. 15° 23′ | | | 30.10† | 764.6† | 50 | 10.0 | ?? | WSW | | | 6 | | 10k | | W | Mod'ate | WSW & WNW | Squally | Capt. W. H. Thompson |
| S. S. Celtic, Liverpool | | | 30.10† | 766.8† | 40 | 4.4 | | SSE | | | 3 | | 10 | SSE | | | | Misty | Capt. B. Gleadell. |
| S. S. Germanic, N. 49° 30′, W. 24° 44′ | | | 30.38† | 771.6† | 51 | 10.6 | ?? | NW | | | 4 | | 10 | | NNE | | | D. clouds | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. *Aneroid; corrected for elevation; instrumental error not known. †Aneroid.

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

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic | | | | | | | | | | | | | | | | | | | Capt. John Metcalf. |
| S. S. Gaelic, N. 31° 00′, E. 172° 40′ | | | 29.77† | 756.1† | 64 | 17.8 | ?? | W | | | 5-6 | | k | | W | Long | W | Squally | Capt. W. H. Kidley |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andreesen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 39° 34′, W. 70° 51′ | S67W | | 30.44 | 773.2 | 54.4 | 12.4 | 71 | N | | | 4 | | 0 | | | Smooth | NNE | Blue sky | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—CONTINUED.

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

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | Character | Direction From— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois, N. 39° 30′, W. 65° 19′ | | | 30.40* | 772.1* | 57 | 13.9 | 94 | NNW | | | 5 | | 0 | | | Mod'ate | NNW | Blue sky | Captain Shackelford. |
| S. S. Indiana, Philadelphia, Pa | | | 30.46† | 773.7† | 48 | 8.9 | 78 | SW | | | 2 | | Fog | | | | | Dense fog | Captain Sargent. |
| S. S. Ohio, Liverpool | | | 30.18 | 766.6 | 46 | 7.8 | 92 | S | | | 3 | | 10 | | Calm | | | Dull | Captain Morrison. |
| S. S. Pennsylvania, N. 50° 40′, W. 22° 55′ | | | 30.25 | 768.3 | 50 | 10.0 | 93 | N | | | 3 | | 9 | | N | Large | NW | Overcast | Captain Harris. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid †Aneroid; unreliable, corrected for elevation, instrumental error not known.

| **RED STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland, N. 38° 53′, W. 72° 43′ | | | 30.62* | 777.7* | | | | N | 6 | 2.7 | | | 0 | | | Slight | SW | Clear | Capt. Jackson. Capt. Nichols. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | |

*Aneroid; regulated to standard at Antwerp.

| **ALLAN LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Furnished by the coöperation of A. Schumacher, & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Scandinavian | | | | | | | | | | | | | | | | | | | |

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

| **MARINE SERIES.** (Miscellaneous.) | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Furnished by the coöperation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller Dutch Island, R. I. | | | 30.41 | 772.4 | 46 | 7.8 | 77 | NNE | 3 | 1.3 | | | Haze | | | | | Hazy | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 30.31 | 769 9 | —37 | —38.3 | 86* | W | 1 | 0.4 | | 3c | 0 | | | | | Fair | O. T. Sherman. |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Determined by use of hair hygrometer.

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

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

Albert J. Myer

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

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 10, 1878.

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

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

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

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

## ALGERIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | | | 30.21 | 767.2 | 63.0 | 17.2 | | NE | | | 2 | | 1 | | | 0 | 0 | Very fair | Dr. Ollive. |
| Nemours | | | 30.17 | 766.3 | 71.6 | 22.0 | 58 | NNW | | | 1 | | 1 | | | 0 | 0 | Very fair | Michel. |
| Algiers | | | 30.10 | 764.5 | 61.9 | 16.6 | 83 | E | | | 1 | | 0 | | | 0 | 0 | Clear | Towillere. |
| La Calle | | | 30.13 | 765.3 | 62.4 | 16.9 | 72 | ENE | | | 5 | | 3 | | | 0 | 0 | Pretty fair | Boulangeot. |
| Tunis | | | 30.15 | 765.8 | 66.4 | 19.1 | 62 | E | | | 4 | | 3 | | | 0 | 0 | Pretty fair | Jacques. |
| Sfax | | | 30.18 | 766.5 | 75.2 | 24.0 | | ENE | | | 6 | | 2 | | | 0 | 0 | Fair | Gau. |
| Saida | | | 30.21 | 767.3 | 73.0 | 22.8 | 90 | WSW | | | 1 | | 3 | | | 0 | 0 | Pretty fair | Herbin. |
| Tebessa | | | 30.30 | 769.7 | | | | Calm | | | 0 | | 0 | | | 0 | 0 | Clear | Bourgeois. |
| Geriville | | | 30.25 | 768.4 | 61.2 | 16.2 | 83 | W | | | 1 | | 2 | | | 0 | 0 | Fair | Lemaillot. |
| Laghouat | | | 30.24 | 768.0 | 73.9 | 23.3 | 23 | NNW | | | 1 | | 0 | | | 0 | 0 | Clear | Guyot. |
| Biskra | | | 30.15 | 765.7 | | | | | | | | | | | | | | | Chanvaux. |

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

## AUSTRIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.67 | 753.5 | 30.23 | 767.8 | 46.8 | 8.2 | 27 | SW | | | 2 | | 1 | | | 0 | 0 | | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.30 | 744.3 | 30.11 | 764.8 | 29.8 | — 1.2 | 80 | W | | | 3 | | 4 | | | 0 | 0 | | Dr. Wierzbiski. |
| Eperies | 29.12 | 739.7 | 30.04 | 763.0 | 33.6 | 0.9 | 66 | NW | | | 2 | | 10cks | | NE | 0.039 | 1.00 | | Julius Mikolik. |
| Gratz | 28.90 | 734.1 | 30.19 | 766.8 | 43.5 | 6.4 | 39 | SW | | | 3 | | 2 | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28.57 | 725.6 | 30.06 | 763.4 | 31.3 | — 0.4 | 74 | NW | | | 5 | | 8 | | | 0 | 0 | | Prof. Reissenberg |
| Kremsmünster | 28.76 | 730.4 | 30.15 | 765.9 | 36.0 | 2.2 | 61 | WNW | | | 1 | | 7 | | | 0 | 0 | | Prof. C. Wagner |
| Lemberg | 28.89 | 733.7 | 29.92 | 759.9 | 32.4 | 0.2 | 89 | NW | | | 2 | | 8 | | | 0.028 | 0.7 | | Dr. T. Stanecki. |
| Pola | 30.07 | 763.7 | 30.19 | 766.7 | 49.3 | 9.6 | 28 | SE | | | 2 | | 9cs | | | 0 | 0 | | I.R.Hydrographic Office |
| Szathmar | 29.62 | 752.4 | 30.11 | 764.8 | 33.8 | 1.0 | 96 | SW | | | 3 | | 9 | | | 0.028 | 0.7 | | Johann Tamas, S. J. |
| Szegedin | 29.84 | 758.0 | 30.13 | 765.4 | 39.6 | 4.2 | 62 | N | | | 3 | | 6 | | | 0 | 0 | | Karl Stancel. |
| Trieste | 30.10 | 764.6 | 30.20 | 767.1 | 48.0 | 8.9 | 53 | NW | | | 1 | | 5 | | | 0 | 0 | | P. Busin. |
| Vienna | 29.43 | 747.5 | 30.17 | 766.4 | 37.9 | 3.3 | 80 | WNW | | | 2 | | 8 | | | 0 | 0 | | I. R. Central Met. Obs'y. |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

## BELGIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.58 | 725.9 | 30.14 | 765.5 | 37.2 | 2.9 | 88 | SW | | | 0 | | 10 | | | 0.051 | 1.3 | | Prof. M. Passau. |
| Brussels | 29.82 | 757.5 | 30.03 | 762.7 | 43.3 | 6.3 | 89 | SSW | | | 1 | | 10 | | SSW | 0.102 | 2.6 | Light rain | Royal Observatory. |
| Furnes | 29.99 | 761.7 | 30.01 | 762.3 | 48.6 | 9.2 | 87 | W | | | 3 | | 9 | | | 0.078 | 1.9 | Light rain | M. E. de Cae. |
| Maeseyck | 29.93 | 760.3 | 30.06 | 763.5 | 40.6 | 4.8 | 95 | S | | | 1 | | 10 | | | 0.130 | 3.3 | Raining | M. Pierrot. |

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

## BRITISH SERIES.

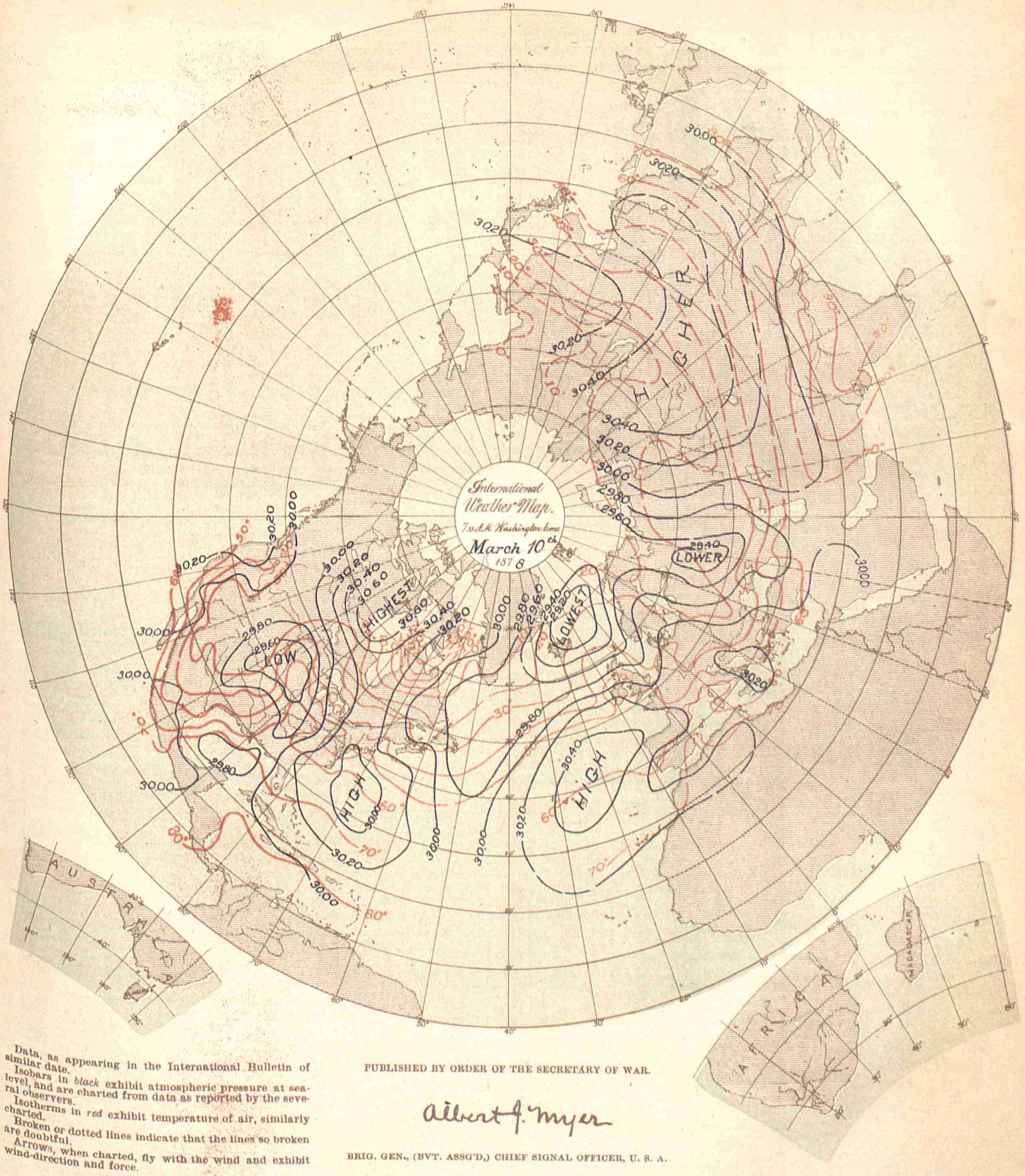
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.73 | 755.1 | 29.83 | 757.7 | 47.4 | 8.6 | ..... | W | 15 | 6.7 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | Blue sky..... | W. Boswell. |
| Ardrossan | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.10 | 764.5 | 49.5 | 9.7 | ..... | W | 14 | 6.3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | S. Call, for Dr. Robinson. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.04 | 763.0 | 47.0 | 8.3 | ..... | W | 26 | 11.6 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | John Hartnup. |
| Birr Castle, (Parsonstown) | 30.00 | 762.0 | 30.20 | 767.1 | 49.7 | 9.8 | ..... | W | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | J. Dreyer. |
| Bradford, Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.05 | 1.3 | ..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.98 | 761.5 | 30.01 | 762.2 | 82.5 | 28.1 | ..... | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.98 | 761.5 | 51.5 | 10.8 | ..... | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | H. Todd. [H. C. |
| Cardington | ..... | ..... | 30.01 | 762.2 | 51.4 | 10.8 | ..... | W | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | Overcast..... | John McLaren. |
| Chatham, School M. E. | 29.89 | 759.2 | 30.02 | 762.5 | 49.2 | 9.6 | ..... | SW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.65 | 727.7 | 30.16 | 766.1 | 44.2 | 6.8 | ..... | NW | ..... | ..... | 5 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Alexander Watt. |
| Donaghadee | 30.00 | 762.0 | 30.02 | 762.5 | 52 | 11.1 | ..... | NW | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 29.97 | 761.2 | 30.00 | 762.0 | 49 | 9.4 | ..... | WNW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | ¾ clouded... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 30.01 | 762.2 | 49.7 | 9.8 | ..... | NW | 9.0 | 4.0 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.. .. | Thomas Mackereth. |
| Falmouth, Observatory | 29.96 | 761.5 | 30.21 | 767.3 | 49.3 | 9.6 | ..... | NW | ..... | ..... | 5 | ..... | 7 | ..... | ..... | ..... | ..... | Overcast..... | The Staff. |
| Fort Napier, (Natal) | 27.69 | 703.3 | 29.89 | 759.2 | 88.2 | 31.2 | ..... | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.65 | 753.1 | 29.88 | 758.9 | 88.0 | 31.1 | ..... | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | |
| Galway, Queen's College | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.07 | 763.8 | 30.12 | 765.0 | 63.0 | 17.2 | ..... | W | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Corpl. C. Aitken, A. H. C. |
| Glasgow, Observatory | 29.74 | 755.4 | 29.94 | 760.5 | 45.4 | 7.4 | ..... | WNW | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | D. G. Maclean. |
| Great Yarmouth | 29.93 | 760.2 | 29.94 | 760.5 | 49 | 9.4 | ..... | WNW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | Misty..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.83 | 757.7 | 30.01 | 762.2 | 48.3 | 9.1 | ..... | NNW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | The Staff, for G. B. Airy. |
| Guernsey | 29.90 | 759.4 | 30.12 | 765.0 | 50.5 | 10.3 | ..... | NW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 30.24 | 768.1 | 57 | 13.9 | ..... | N | ..... | ..... | 4 | ..... | 2c | ..... | ..... | 0.18 | 4.6 | Fine..... | M. P. Moyle. |
| Holyhead | 30.16 | 766.1 | 30.21 | 767.3 | 49 | 9.4 | ..... | WNW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | Blue sky..... | John Tilston. |
| Jersey | 29.85 | 758.2 | 30.15 | 765.8 | 49.5 | 9.7 | ..... | NW | ..... | ..... | 6 | ..... | 5 | ..... | ..... | Blank | Blank | D. clouds.... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 30.02 | 762.5 | 50.5 | 10.3 | ..... | NW | 15 | 6.7 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff. |
| Kingstown | 30.10 | 764.5 | 30.13 | 765.3 | 49 | 9.4 | ..... | WNW | ..... | ..... | 5 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 30.01 | 762.2 | 48.9 | 9.4 | ..... | NW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 30.10 | 764.5 | 30.17 | 766.3 | 59.2 | 15.1 | ..... | E | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Sgt. Fred. Travis, A. H. |
| Nairn | 29.70 | 754.4 | 29.80 | 756.9 | 47 | 8.3 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 30.16 | 766.1 | 72.8 | 22.7 | ..... | SE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 29.83 | 757.7 | 30.02 | 762.5 | 51.7 | 10.9 | ..... | WNW | ..... | ..... | 4 | ..... | 4k;ks | ..... | NW | 0.011 | 0.28 | D. clouds..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.51 | 749.5 | 30.04 | 763.0 | 47.1 | 8.4 | ..... | NW | ..... | ..... | 4–5 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.04 | 763.0 | 50 | 10.0 | ..... | NW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | Mr. Lucas. |
| Plymouth | 30.07 | 763.8 | 30.15 | 765.8 | 52.0 | 11.1 | ..... | NW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | John Merrifield. |
| Roche's Point | 30.16 | 766.1 | 30.21 | 767.3 | 51 | 10.6 | ..... | NW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Fine..... | W. Kennedy. |
| Saint Ann's Head | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | John C. Walker. |
| Sandwick Manse, (Orkneys. | ..... | ..... | 29.70 | 754.4 | 44 | 6.7 | ..... | W | 30 | 13.4 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 30.03 | 762.7 | 43.0 | 6.1 | ..... | ENE | ..... | ..... | 1 | ..... | 7 | ..... | ..... | Blank | Blank | D. clouds..... | Sergt. W. H. Lyne. |
| Sheffield | 29.74 | 755.4 | 30.02 | 762.5 | 51.9 | 11.1 | ..... | NW | ..... | ..... | 5 | ..... | 4 | ..... | ..... | 0 | 0 | D. clouds..... | W. F. Cooper. |
| Silloth Rectory | 29.93 | 760.2 | 29.96 | 761.0 | 52.1 | 11.2 | 67 | NW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0.085 | 2.16 | D. clouds..... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.62 | 752.3 | 30.02 | 762.5 | 46.4 | 8.0 | ..... | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 29.71 | 754.6 | 46 | 7.8 | ..... | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Smith. |
| Stratfield Turgiss | 29.83 | 757.7 | 30.05 | 763.3 | 52.2 | 11.2 | ..... | W | ..... | ..... | 0 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. C. H. Griffith, F.M.S |
| Thurso | ..... | ..... | 29.71 | 754.6 | 46 | 7.8 | ..... | WSW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 30.23 | 767.8 | 54 | 12.2 | ..... | SW | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 30.29 | 769.4 | 49.0 | 9.4 | ..... | WNW | 15 | 6.7 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.94 | 760.5 | 70.0 | 21.1 | 73 | NW | ..... | ..... | 3 | ..... | 4k | ..... | ..... | 0 | 0 | Cloudy..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.72 | 754.9 | 29.91 | 759.6 | 87.0 | 30.6 | 58 | W | 8.5 | 3.8 | ..... | 4 | 3 | ..... | ..... | 0.32 | 8.1 | Cloudy; fine | C. Meldrum. |
| Melbourne, Observatory | 29.92 | 759.9 | 30.01 | 762.2 | 57.0 | 13.9 | 88 | ESE | 8 | 1.3 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Fine..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

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

| Marine Series. Vessels. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|
| S. S. Algeria | ..... | ..... | ..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon, N. 17° 17′, W. 71° 50′ | 6 | E | Squally..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | Capt. C. C. Prehn. [R. |
| S. S. Peruvian | ..... | ..... | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire, N. 37° 0′ W. 54° 35′ | 5 | WNW | Hailing..... | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.




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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.25 | 666.7 | | | 69.8 | 21.0 | 82 | E | | | 1 | | 4ck | | | 0 | 0 | | Federico Maison. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.97 | 761.2 | 30.02 | 762.4 | 36.1 | 2.3 | 59 | SW | | | 2 | | 2 | | | | | | |
| Fanöe | 29.95 | 760.8 | 29.97 | 761.3 | 38.3 | 3.5 | 90 | SW | | | 4 | | 10 | | | | | | |
| Godthaab, (Greenland) | 29.89 | 759.1 | 29.93 | 760.2 | 10.9 | —11.7 | 93 | E | | | 2 | | 10 | | | | | | Raining |
| Stykkisholm, (Iceland) | 29.23 | 742.4 | 29.27 | 743.5 | 25.7 | — 3.5 | 91 | SW | | | 6 | | 8 | | | | | | |
| Thorshavn, (Faröe) | 29.44 | 747.7 | 29.47 | 748.6 | 41.0 | 5.0 | 90 | W | | | 4 | | 4 | | | | | | |
| Vestervig | 29.76 | 756.0 | 29.93 | 760.3 | 37.8 | 3.2 | 80 | S | | | 6 | | 10 | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the cooperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.63 | 752.5 | 30.18 | 766.5 | 50.0 | 10 | 95 | SW | | | 4 | | 8 | | | 0.016 | 0.4 | Very cloudy | Collignon, Director. |
| Amiens, Normal School | 29.94 | 760.4 | 30.05 | 763.2 | 52.2 | 11.2 | 90 | SW | | | 2 | | 5 | | W | 0.08 | 2. | Cloudy | Ronvarne, Director. |
| Avignon, Normal School | 30.02 | 762.4 | 30.10 | 764.4 | 61.2 | 16.2 | 33 | NNE | | | 2 | | 10 | | | 0 | 0 | Lightly cov'd | Mr. Giraud, Director |
| Bar-sur-Seine | 29.58 | 751.3 | 30.16 | 766.1 | 43.7 | 6.5 | 65 | SW | | | 1 | | 10 | | | Inap. | Inap. | Sprinkling | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 50.7 | 10.4 | 75 | WSW | | | 2 | | 10 | | WSW | 0.030 | 0.75 | Covered | Normal School. |
| Besançon | 29.25 | 743.0 | 30.17 | 766.3 | 43.9 | 6.6 | 85 | SSE | | | 2 | | 5 | | S | 0 | 0 | Cloudy | Normal School. |
| Bourg-en-Bresse | 29.28 | 743.8 | 30.20 | 767.0 | 45.3 | 7.4 | 64 | W | | | 2 | | 5k | | N | 0 | 0 | Cloudy | Normal School. |
| Bourges, Normal School | 29.58 | 751.2 | 30.13 | 765.4 | 47.5 | 8.6 | 65 | SE | | | 4 | | 10 | | W | 0.020 | 0.5 | Covered | A. Wagner, Director. |
| Brest, Naval Observatory | 29.94 | 760.4 | 30.15 | 765.9 | 50.5 | 10.3 | 66 | NNW | | | 3 | | 5k | | NNW | 0.098 | 2.50 | | The Staff. |
| Carcassonne, Normal School | 29.74 | 755.4 | 30.15 | 765.9 | 57.2 | 14 | 55 | W | | | 6 | | 5 | | W | 0 | 0 | Cloudy | Vateau, Director. |
| Caen | 29.97 | 761.2 | 30.08 | 764.1 | 56.3 | 13.5 | 78 | W | | | 4 | | 5 | | W | 0 | 0 | Cloudy | Normal School. |
| Chartres, Normal School | 29.48 | 748.9 | 30.06 | 763.5 | 50.0 | 10 | 76 | SW | | | 4 | | 8 | | SW | 0 | 0 | | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.80 | 756.8 | 30.12 | 765.0 | 44.1 | 6.7 | 71 | S | | | 2 | | 10n | | S | 0 | 0 | Covered | Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.75 | 730.3 | 30.12 | 765.1 | 49.6 | 9.8 | 50 | N | | | 2 | | 10 | | N | 0 | 0 | Covered | Huard, Director. |
| Commercy, Normal School | 29.26 | 743.3 | 30.18 | 766.5 | 40.1 | 4.5 | 77 | NW | | | 2 | | 10 | | NW | 0 | 0 | Covered | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.97 | 735.7 | 30.11 | 764.7 | 60.8 | 16.0 | 32 | SW | | | 1 | | 5 | | SW | 0 | 0 | ½ covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 30.09 | 764.2 | 30.30 | 769.7 | 54.0 | 12.2 | 66 | SW | | | 2 | | 5 | | SW | 0 | 0 | Cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.81 | 757.2 | 30.12 | 765.1 | 50.4 | 10.2 | 74 | W | | | 4 | | 5 | | W | 0 | 0 | Cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.28 | 743.6 | 30.21 | 767.4 | 46.4 | 8 | 64 | W | | | 2 | | 5 | | W | 0 | 0 | Cloudy | Voudez, Director. |
| Lorient, Naval Observatory | 30.11 | 764.9 | 30.21 | 767.4 | 54.3 | 12.4 | 57 | NNW | | | 4 | | 5 | | N | 0.031 | 0.8 | ½ Covered | T. Carré, Director. |
| Mâcon, Normal School | 29.51 | 749.5 | 30.22 | 767.6 | 44.4 | 6.9 | 85 | Calm | | | 0 | | 10 | | | 0 | 0 | Covered | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | 29.08 | 738.7 | 30.15 | 765.8 | 44.1 | 6.7 | 74 | NW | | | 1 | | 10 | | SE | 0 | 0 | Covered | Normal School. |
| Nismes, Normal School | 29.94 | 760.4 | 30.14 | 765.5 | 61.2 | 16.2 | 50 | NE | | | 2 | | 2 | | NE | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Orleans, Normal School | 29.74 | 755.5 | 30.13 | 765.4 | 48.2 | 9 | 78 | S | | | 2 | | 10 | | | 0 | 0 | Covered | Bernard, Director. |
| Paris, Observatory | 29.85 | 758.2 | 30.10 | 764.5 | 46.8 | 8.2 | 80 | WSW | | | 1 | | 10 | | W | Inap. | Inap. | Rainy | National Observatory. |
| Privas | 29.04 | 737.6 | 30.11 | 764.8 | 52.2 | 11.2 | 70 | N | | | 2 | | 5 | | S | 0 | 0 | Cloudy | Normal School |
| Puy de Dome (Summit) | | | | | | | | | | | | | | | | | | | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.19 | 766.8 | 30.22 | 767.6 | 56.8 | 13.8 | 75 | SW | | | 2 | | 0 | | | 0 | 0 | Clear | Lt. Decante, Director. |
| Rouen, Normal School | 29.98 | 761.6 | 30.07 | 763.8 | 50.2 | 10.1 | 78 | WSW | | | 2 | | 10 | | SW | 0.051 | 1.3 | Covered | F. Lucard, Director. |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | M. H. Hercouet. |
| Tarbes, Normal School | 29.11 | 739.5 | 30.22 | 767.6 | 58.1 | 14.5 | 58 | WSW | | | 4 | | 10 | | | 0 | 0 | Covered | T. Hugues, Director. |
| Villefranche | 29.43 | 747.5 | 30.17 | 766.4 | 49.1 | 9.5 | 69 | E | | | 1 | | 2 | | NW | 0 | 0 | Slightly cl'dy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.85 | 758.2 | 29.88 | 758.9 | 78.8 | 26 | | | | | | | | | | | | | |
| Lyons | | | 30.16 | 766.1 | 50.4 | 10.2 | | | | | | | | | | 0.12 | 3. | | L'Abbé Marchès. |
| Marseilles, Observatory | | | 30.04 | 763.1 | 59.2 | 15.1 | 56 | W | | | 1 | | 7 | | | 0 | 0 | Fair | M. Jeys. |
| Mont-Louis | 24.88 | 632.0 | 30.21 | 767.0 | 46.6 | 7.8 | 32 | ESE | 9.3 | 4.17 | | | 9 | | | 0 | 0 | Covered | The Staff. |
| Nice | 29.97 | 761.3 | 30.05 | 763.3 | 60.6 | 15.9 | 42 | E | | | 8 | | 4 | | WSW | 0 | 0 | | Mr. Falguère. |
| Paris, Montsouris Obs'y | 29.81 | 757.2 | 30.09 | 764.2 | 46.4 | 8.0 | 78 | SW | | | 3 | | 10 | | SE | 0 | 0 | Fair | Dr. A. Niepce. |
| Perpignan | | | 30.13 | 765.2 | 60.8 | 16.0 | 61 | E | 5.6 | 2.50 | | | 6 | | | Inap. | Inap. | Sprinkling | Marié Davy, Director. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | W | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Plantade,) H. P. | 22.54 | 572.5 | | | 29.8 | — 1.2 | | NW | | | 1 | | 10 | | | | | | M. Baylac. |
| Saint Maur, (near Paris) | 29.93 | 760.3 | 30.10 | 764.5 | 46.6 | 8.1 | 82 | SW | | | 1 | | 10 | | | 0.055 | 1.4 | Snowy | Gen'l de Nansouty |
| Toulouse, Observatory | 29.48 | 748.8 | 30.21 | 767.3 | 54.7 | 12.6 | 49 | WNW | | | 1 | | 10 | | | 0.055 | 1.4 | Showery | E. Renou. |
| Tours | 29.95 | 760.6 | 30.14 | 765.6 | 52.7 | 11.5 | 63 | W | | | 3 | | 6 | | | 0 | 0 | | The Staff. |
| Versailles, (near Paris) | | | 30.08 | 764.1 | 49.3 | 9.6 | 74 | W | | | 2 | | 8 | | W | 0 | 0 | | C. Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.37 | 771.4 | 30.39 | 772.0 | 46.6 | 8.1 | 83 | NNE | 2.3 | 1.2 | | | 10 | | | 0.006 | 0.14 | Light clouds | Dr. A. Bérigny. |
| | | | | | | | | | | | | | 10kn | | | 0.087 | 2.2 | Covered | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 29.93 | 760.2 | 30.11 | 764.8 | 40.1 | 4.5 | 72 | NW | | | 1 | | 8 | | | 0.038 | 0.96 | | Prof. Arndt. |
| Breslau | 29.58 | 751.3 | 30.11 | 764.8 | 35.6 | 2.0 | 63 | NW | | | 2 | | 6 | | | Blank | Blank | | Royal University Obs'y |
| Carlsruhe | 29.69 | 754.1 | 30.13 | 765.3 | 43.3 | 6.3 | 55 | SW | | | 1 | | 9 | | | 0.031 | 0.8 | | Albert Senz. |
| Cassel | 29.52 | 749.8 | 30.13 | 765.3 | 41.0 | 5.0 | 61 | WSW | | | 2 | | 7 | W | | 0.114 | 2.80 | | Dr. H. Möhl. |
| Crefeld | 29.89 | 759.3 | 30.06 | 763.4 | 41.5 | 5.3 | 88 | S | | | 3 | | 10 | | | | | Raining | Director Lose. |
| Emden | 30.07 | 763.8 | 30.11 | 764.7 | 40.1 | 4.5 | 92 | S | | | 1 | | 10 | | | 0.04 | 1. | | Prof. Prestel. |
| Frankfort on the Main | 29.81 | 757.1 | 30.19 | 766.7 | 43.7 | 6.5 | 49 | SW | | | 1 | | 9 | | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 28.68 | 728.5 | 30.17 | 766.2 | 40.3 | 4.6 | 76 | S | | | 3 | | 8 | SW | | 0.091 | 2.3 | | M. Wilhelm. |
| Hamburg | 30.00 | 761.9 | 30.07 | 763.7 | 39.6 | 4.2 | 70 | SW | | | 3 | | 9ks;cs | | | Inap. | Inap. | Fair | Captain F. Hegemann. |
| Kiel | 30.02 | 762.5 | 30.04 | 762.9 | 40.5 | 4.7 | 62 | SW | | | 2 | | 10 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.89 | 759.2 | 29.97 | 761.2 | 32.9 | 0.5 | 44 | NW | | | | | | | | 0.007 | 0.17 | Snowing | Prof. E. Luther. |
| Köslin | | | 30.03 | 762.8 | 34.5 | 1.4 | | N | | | 2 | | 0 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.74 | 755.4 | 30.18 | 766.5 | 33.8 | 3.8 | 46 | WNW | | | 1 | | 9 | W | | 0.039 | 1.0 | | Prof. Bruhns. |
| Memel, Naval School | 29.87 | 758.6 | 29.91 | 759.8 | 29.7 | — 1.3 | 80 | NW | | | 4 | | 2s | | | | | Squally | Reinbrech von Skalweit. |
| Neufahrwasser | 29.99 | 761.8 | 30.01 | 762.2 | 34.2 | 1.2 | 72 | NNW | | | 4 | | 3 | | | 0.035 | 0.9 | | A. Lothes. |
| Posen | 29.82 | 757.4 | 30.12 | 765.0 | 36.3 | 2.4 | 58 | W | | | 3–4 | | 4 | | | 0 | 0 | Fair | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.61 | 752.1 | 30.17 | 766.4 | 44.1 | 6.7 | 56 | W | | | 1 | | 10 | W | | 0 | 0 | | Dr. Schur. |
| Stuttgart | 29.17 | 740.9 | 30.14 | 765.6 | 40.6 | 4.8 | 56 | SW | | | 2 | | 9 | W | | 0.035 | 0.9 | | Prof. Schoder. |
| Treves, (Trier) | 29.51 | 749.5 | 30.03 | 762.8 | 41.9 | 5.5 | 60 | SW | | | 7 | | 10 | | | 0.024 | 0.61 | Foggy | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.60 | 726.4 | 30.16 | 766.1 | 37.0 | 2.8 | 59 | Calm | 0 | 0 | | | 9ck | | W | 0 | 0 | | Dr. Von Bebber. |
| Wustrow, Naval School | 30.10 | 764.5 | 30.14 | 765.5 | 37.2 | 2.9 | 65 | W | | | 2 | | 4 | | | 0 | 0 | Fair | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Königsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.77 | 756.1 | 30.17 | 766.2 | 49.3 | 9.6 | | NE | | | 2.0 | | k | | | | | Clear | Dr. J. F. J. Schmidt. |

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

## INDIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.87 | 758.6 | 29.92 | 759.9 | 80.6 | 27.0 | 62 | WSW | 17.07 | 7.67 | | | 1 | | | 0 | 0 | D. clouds | |
| Deesa | 29.48 | 748.6 | 29.94 | 760.5 | 93.7 | 34.3 | 29 | Calm | | | | | 5 | WNW | | 0 | 0 | D. clouds | |
| Bombay | 29.88 | 758.9 | 29.92 | 759.9 | 80.5 | 26.9 | 69 | NW | 13.0 | 5.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.68 | 708.1 | 29.84 | 757.9 | 90.1 | 33.3 | 24 | NNE | | | | | 0 | | | 0 | 0 | Dust-whirl | |
| Lahore | 29.22 | 742.1 | 29.96 | 761.1 | 78.3 | 25.7 | 34 | W | 1.2 | 0.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.40 | 695.9 | 29.92 | 759.8 | 82.0 | 27.8 | 62 | W | 13.0 | 5.8 | | | 1 | | | 0 | 0 | Misty | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 29.02 | 737.1 | 29.93 | 760.1 | 76.8 | 24.9 | 31 | NW | 1.9 | 0.8 | | | | | | 0 | 0 | | |
| Agra | 29.34 | 745.3 | 29.90 | 759.6 | 87.2 | 30.7 | 22 | W | | | | | | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.86 | 733.1 | 29.89 | 759.2 | 90.0 | 32.2 | 18 | Calm | 3.5 | 1.6 | | | | | | 0 | 0 | Blue sky | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.56 | 750.8 | 29.93 | 760.3 | 81.5 | 27.5 | 54 | NW | 2.1 | 0.9 | | | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.61 | 752.1 | 29.92 | 760.0 | 79.7 | 26.5 | 34 | Calm | 0.6 | 0.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.72 | 755.0 | 29.90 | 759.6 | 86.2 | 30.1 | 21 | W | 1.1 | 0.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.91 | 709.0 | 29.93 | 760.3 | 78.0 | 25.6 | 18 | NW | 4.7 | 2.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.83 | 757.6 | 29.91 | 759.7 | 81.1 | 27.3 | 74 | E | 2.8 | 1.2 | | | 1 | | | 0.20 | 5.1 | Misty | |
| Calcutta (Alipore) | 29.89 | 759.1 | 29.91 | 759.6 | 82.2 | 27.9 | 61 | SSW | 4.0 | 1.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.51 | 749.6 | 29.91 | 759.6 | 76.8 | 24.9 | 63 | S | 1.0 | 0.4 | | | 1 | W | | 0 | 0 | Gloomy | |
| Chittagong | 29.87 | 758.8 | 29.96 | 761.0 | 78.5 | 25.8 | 86 | WSW | 4.4 | 2.0 | | | 2 | | | 0 | 0 | Blue sky | |
| Sibsagar | 29.70 | 754.5 | 30.05 | 763.3 | 65.4 | 18.6 | 76 | NE | 3.7 | 1.6 | | | 4 | | | 0 | 0 | Blue sky | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.60 | 726.4 | 29.96 | 760.9 | 85.1 | 29.5 | 23 | NE | 2.5 | 1.1 | | | | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,892.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

## ITALIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.85 | 758.3 | 30.15 | 765.8 | 49.8 | 9.9 | 9 | W | 2.5 | 1.1 | | | 3 | | | 0 | 0 | | Prof. Giovanni Codig. |
| Padua | 30.04 | 762.9 | 30.15 | 765.7 | 49.8 | 9.9 | 43 | ESE | 12.5 | 5.6 | | | 9 | W | | 0 | 0 | | Prof. Dott. Lorenzioni |
| Vicenza | 29.95 | 760.8 | 30.15 | 765.7 | 50.0 | 10.0 | 35 | E | 3.1 | 1.4 | | | 3 | W | | 0 | 0 | | Conte Alm. Da Schio. |
| Bergamo | 28.83 | 732.3 | 30.15 | 765.8 | 51.1 | 10.6 | 27 | SW | | | 2 | | 7 | | | 0 | 0 | | Prof. Trionfini Carlo. |
| Milan | | | | | | | | | | | | | | | | | | | Prof. Schiaparelli. |
| Moncalieri | 29.23 | 742.5 | 30.15 | 765.9 | 50.7 | 10.4 | 32 | ESE | 6.3 | 2.8 | | | 6 | NW | | 0 | 0 | | Prof. P. F. Denza. |
| Mondovi | 28.19 | 716.0 | 30.14 | 765.5 | 44.4 | 6.9 | 26 | NW | | | 4 | | 4 | NW | | 0 | 0 | | Prof. D. C. Bruno. |
| Porto Maurizio | 29.86 | 758.4 | 30.08 | 764.1 | 54.9 | 12.7 | 51 | E | | | 6 | | 5 | WNW | | 0 | 0 | | Prof. L. Vassallo. |
| Genoa | 29.94 | 760.4 | 30.11 | 764.8 | 54.5 | 12.5 | 29 | N | 3.8 | 1.7 | | | 10 | | | 0 | 0 | | Prof. G. M. Garibaldi. |
| Parma | 29.86 | 758.5 | 30.18 | 766.0 | 53.2 | 11.8 | 45 | ENE | | | 4 | | 9 | | | 0 | 0 | | Prof. P. Pigorini. |
| Florence | 29.83 | 757.7 | 30.09 | 764.3 | 60.8 | 16.0 | 32 | W | | | 2 | | 4 | | | 0 | 0 | | Cav. F. Meucci. |
| Leghorn | 30.01 | 762.2 | 30.10 | 764.4 | 59.7 | 15.4 | 61 | SSW | 8.1 | 3.6 | | | 10 | | | 0 | 0 | | Prof. P. Monte. |
| Pesaro | 30.08 | 763.9 | 30.13 | 765.2 | 51.8 | 10.7 | 60 | SE | 19.2 | 8.6 | | | 9 | | | 0 | 0 | | Prof. Luigi Guidi. |
| Urbino | 28.52 | 724.4 | 30.08 | 764.1 | 53.4 | 11.9 | 55 | E | | | 2 | | 5 | | | 0 | 0 | | Prof. P. Serpieri. |
| Grosseto | 30.00 | 762.1 | 30.12 | 765.0 | 59.7 | 15.4 | 62 | ENE | | | 2 | | 4 | S | | 0 | 0 | | Avv. P. Ponticelli. |
| Rome | 29.93 | 760.1 | 30.10 | 764.6 | 60.1 | 15.6 | 89 | SSW | 9.4 | 4.2 | | | 8 | | | 0 | 0 | | Prof. P. G. S. Ferrari. |
| Naples, O. U. | 29.99 | 761.7 | 30.11? | 764.9? | 61.2 | 16.2 | 29 | S? | | | 2 | | 2 | | | 0 | 0 | | Prof. L. Palmieri. |
| Lecce | | | | | 50.7 | 10.4 | 80 | NE | 6.3 | 2.8 | | | 1 | NE | | 0.008 | 0.2 | | Prof. C. De Giorgi. |
| Cagliari | 29.87 | 758.7 | 30.07 | 763.6 | 59.4 | 15.2 | 66 | S | | | 2 | | 2 | NW | | 0 | 0 | | Prof. A. Pacinotti. |
| Cosenza | 29.34 | 745.1 | 30.23 | 767.8 | 56.8 | 13.8 | 69 | NW | 8.1 | 3.6 | | | 2 | | | 0 | 0 | | Prof. F. D. Conti. |
| Palermo | 29.83 | 757.6 | 30.10 | 764.4 | 58.5 | 14.7 | 60 | NE | 6.3 | 2.8 | | | 4 | | | 0 | 0 | | Prof. G. Caccialore. |
| Syracuse | 30.12 | 765.1 | 30.20 | 767.0 | 57.9 | 14.4 | 63 | ESE | | | 4 | | 10 | WSW | | 0 | 0 | | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.65 | 753.1 | 30.21 | 767.2 | 57.4 | 14.1 | 84 | NW | 3.1 | 1.4 | | | 3 | SW | | 0.130 | 3.3 | | Prof. F. Brioschi |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 879.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.7 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 30.25 | 768.3 | 30.28 | 769.1 | 39.9 | 4.4 | 66 | N | 4.0 | 1.8 | | | 10ck | | | 0 | 0 | Cloudy | The Observatory. |
| Tokei (Yeddo) University | 30.16 | 766.1 | 30.27 | 768.8 | 40 | 4.4 | 73 | NNW | 3 | 1.3 | | | 9ks | | | 0 | 0 | Cloudy | Prof. P. V. Veeder. |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | | | | | | | | | | | | | | | | | | | I. N. Marin, M. D. |
| Córdoba | | | | | | | | | | | | | | | | | | | C. Peña, M. D. |
| Cuernavaca | 25.05 | 639.2 | 29.83 | 757.6 | 61.2 | 16.2 | 41 | N | 5.1 | 2.3 | | 0 | 0 | | | 0 | 0 | Very clear | L. Castillo, A. E. |
| Guadalajara | 25.04 | 635.9 | 30.14 | 765.5 | 37.4 | 3.0 | 40 | SW | 0.9 | 0.4 | | 0 | 0 | | | 0 | 0 | Blue sky | Prof. L. Perez. |
| Guanajuato | 23.66 | 601.2 | 29.93 | 760.2 | 56.3 | 13.5 | 27 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Very clear | Prof. V. Fernandez |
| Leon | | | | | 53.6 | 12.0 | 34 | NNW | 5.2 | 2.3 | | 0 | 0 | | | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico | 23.02 | 584.6 | 30.06 | 763.5 | 54.3 | 12.4 | 41 | S | 3.8 | 1.7 | | 0 | 2ks | | | 0 | 0 | Clear | Central Observatory. |
| Orizaba | | | | | | | | | | | | | | | | | | | N. N. |
| Orizaba | | | | | | | | | | | | | | | | | | | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | | | | | 44.2 | 6.8 | 33 | SW | 0.9 | 0.4 | | 0 | 0 | | | 0 | 0 | Very clear | M. V. de Leon, M. E. |
| Puebla | | | | | | | | | | | | | | | | | | | Prof. B. Gonzalez. |
| Toluca | | | | | | | | | | | | | | | | | | | Prof. C. Velazquez. |
| Tlacotalpam | 29.88 | 759.1 | 29.90 | 759.4 | 71.6 | 22.0 | 86 | N | 11.0 | 4.9 | | 0 | 10n | | N | 0 | 0 | Threatening | Prof. F. R. Bayly. |
| San Luis Potosi | | | | | | | | | | | | | | | | | | | G. Barroeta, M. D. |
| Vera-Cruz | 29.92 | 759.9 | 29.95 | 760.6 | 71.6 | 22.0 | 81 | WSW | 3.1 | 1.4 | | 0 | 10sk | | S | Inap. | Inap. | Covered | Prof. J. Rossell. |
| Zacatecas | | | | | 48.7 | 9.3 | 40 | NW | 1.8 | 0.8 | | 0 | 0 | | | 0 | 0 | Very clear | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.29 | 591.6 | 30.08 | 764.1 | 45.5 | 7.5 | 40 | ESE | 2.2 | 1.0 | | 0 | 0 | | | 0 | 0 | Clear | P. Spina. [M. M. D. D. |
| Morelia | | | | | | | | | | | | | | | | | | | M. Tena, F. L. Pa ram |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,771 m., or 5,810 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,340 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known The data are published as given.

## NETHERLANDS' SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.21 | 767.3 | 30.21 | 767.3 | 46.4 | 8.0 | | SSW | | | 4 | | | | | 0.031 | 0.8 | | |
| Groningen | 29.96 | 761.0 | 30.02 | 762.4 | 39.2 | 4.0 | | S | | | 2 | | | | | 0.024 | 0.6 | | |
| Helder | 29.96 | 761.0 | 29.96 | 761.0 | 41.2 | 5.1 | | S | | | 4 | | | | | 0.012 | 0.3 | | |
| Hellevoetsluis | 30.00 | 761.0 | 30.00 | 761.0 | 42.8 | 6.0 | 94 | SSW | | | 2 | | | | | | | | |
| Utrecht | 29.98 | 761.4 | 30.02 | 762.6 | 41.2 | 5.1 | 92 | SSW | | | 2 | | 10 | | | 0.024 | 0.6 | Dull | H. v d Brink. |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

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

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.64 | 752.9 | 29.69 | 754.1 | 34 2 | 1.2 | 85 | S | 32.9 | 14.7 | ..... | ..... | 6 | ..... | ..... | 0.354 | 9.0 | Snowing..... | |
| Bróno | 29.63 | 752.5 | 29 67 | 753.5 | 31.8 | — 0.1 | 54 | SW | 18 | 8 | ..... | ..... | 7 | ..... | ..... | 0.406 | 10.3 | ..... | |
| Christiania | 29.71 | 754.7 | 29.86 | 758.5 | 35.4 | 1.9 | 66 | SSW | 20 | 9 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.51 | 749.6 | 29.56 | 750.7 | 26.6 | — 3.0 | 74 | SSE | 13 | 6 | ..... | ..... | 10 | ..... | ..... | 0.197 | 5.0 | ..... | |

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

## PORTUGUESE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.21 | 767.2 | 30.40 | 772.1 | 60.3 | 15.7 | 81 | SSE | 4.9 | 2.2 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.13 | 739.8 | 30.16 | 766.1 | 55.4 | 13.0 | 70 | SSW | 1.8 | 0.8 | ..... | ..... | 9 | SSW | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos |
| Funchal, (Madeira) | 30.19 | 766.9 | 30.28 | 769.1 | 64.2 | 17.9 | 66 | SW | 1.8 | 0.8 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.80 | 756.9 | 30.16 | 766.1 | 59.0 | 15.0 | 64 | N | 15.0 | 6.7 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.36 | 771.2 | 30.45 | 773.4 | 62.6 | 17.0 | 64 | SE | 8.7 | 3.9 | ..... | ..... | 3 | ..... | ..... | 0.047 | 1.2 | ..... | |

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

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd't. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd t. |
| Mindello, Mozambique, Mozambique | 29.76 | 755.9 | 29.77 | 756.1 | 86 | 30.0 | ..... | SE | ..... | ..... | 2 | ..... | 5 | ..... | SE | 1 | ..... | Blue sky.. ... | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Sado, Bissao, Senegambia | 29.96* | 761.0* | 29.97* | 761.3* | 85.6 | 29.8 | ..... | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 1 | ..... | Blue sky..... | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.80 | 756.9 | 29.81 | 757.1 | 85.1 | 29.5 | ..... | WNW | ..... | ..... | 3 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreira, dos Anus, Com' |

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.56 | 750.8 | 30.00 | 762.0 | 30.9 | — 0.6 | 75 | NW | 10 | 7 | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.35 | 745.5 | 29.79 | 756.7 | 27.9 | — 2.3 | 81 | WNW | 11 | 5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | Astronomical Obs. |
| Dorpat | 29.45 | 748.0 | 29.70 | 754.4 | 26.2 | — 3.2 | 87 | NW | 7 | 3 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.63 | 752.6 | 29.65 | 753.0 | 24.8 | — 4.0 | 82 | WNW | 7 | 3 | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | Light clouds | Central Physical Obs. |
| Kuopio | 29.34 | 745.3 | 29.68 | 753.9 | 21.9 | — 5.6 | 96 | NNW | 7 | 3 | ..... | ..... | 0 | ..... | ..... | Blank | Blank | ..... | Ch. Forsten. |
| Kieff | 29.09 | 738.9 | 29.75 | 755.7 | 28.0 | — 2.2 | 75 | NW | 9 | 4 | ..... | ..... | 8ks;kn | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.82 | 757.3 | 29.89 | 759.1 | 35.8 | 2.1 | 66 | SW | 9 | 4 | ..... | ..... | 6kn | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.89 | 759.2 | 29.91 | 759.7 | 41.9 | 5.5 | 68 | WNW | 9 | 4 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Light clouds | Lagorio. |
| Moscow | 28.78 | 730.9 | 29.34 | 745.3 | 27.9 | — 2.3 | 94 | N | 9 | 4 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | Snowing..... | Meteorological Obs. |
| Lugan | 29.41 | 746.9 | 29.61 | 752.2 | 35.6 | 2.0 | 71 | SW | 9 | 4 | ..... | ..... | 6ks | ..... | ..... | Blank | Blank | ..... | Meteorological Obs. |
| Archangel | 29.55 | 750.5 | 29.57 | 751.0 | 28.0 | — 2.2 | 96 | SSW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.39 | 721.0 | 29.78 | 756.3 | 63.0 | 17.2 | 27 | SW | 9 | 4 | ..... | ..... | 9ck | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 29.87 | 758.6 | 29.78 | 756.5 | 36.7 | 2.6 | 79 | WSW | 2 | 1 | ..... | ..... | 8k | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Kasan | 29.48 | 748.8 | 29.76 | 755.8 | 39.7 | 4.3 | 68 | SE | 4 | 2 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischei. |
| Ekaterinburg | 29.11 | 739.5 | 30.10 | 764.4 | 33.4 | 0.8 | 68 | ESE | 4 | 2 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Nukuss | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bohrof. |
| Tashkend | 28.44 | 722.4 | 30.14 | 765.5 | 59.4 | 15.2 | 47 | NW | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.95 | 760.8 | 30.51 | 775.0 | 27.3 | — 2.6 | 62 | NE | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 30.18 | 766.6 | 30.52 | 775.3 | 28.2 | — 2.1 | 91 | SE | 2 | 1 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Krotkowo* | 29.22 | 742.2 | 29.71 | 754.5 | 33.6 | 0.9 | 72 | SE | 20 | 9 | ..... | ..... | 4ks | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Peking, (China) | 30.10 | 764.5 | 30.24 | 768.1 | 48.2 | 9.0 | 34 | SW | 18 | 8 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.99 | 710.9 | 30.19 | 766.8 | 17.6 | — 8.0 | 65 | Calm | 0 | 0 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | — 3.5 | —19.7 | 68 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.97 | 761.2 | 30.08 | 763.9 | 55.9 | 13.3 | 73 | NE | 2.3 | 1.05 | ..... | 2ck | 2k | SW | ..... | 0 | 0 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.24 | 768.2 | 30.30 | 769.7 | 54.0 | 12.2 | 85 | NW | 1.8 | 0.81 | ..... | 2 | 3 | NW | ..... | 0 | 0 | Cloudy..... | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.23 | 691.6 | ..... | ..... | 47.5 | 8.6 | 87 | NE | 6.1 | 2.72 | ..... | 0 | 8 | ..... | ..... | 0 | 0 | ..... | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.84 | 707.1 | 30.02 | 762.6 | 65.8 | 18.8 | 41 | E | 5.2 | 2.33 | ..... | 2 | 1 | SW | ..... | 0 | 0 | ..... | The Staff. |
| Murcia, Met. Obs'y | 29.88 | 759.0 | 30.03 | 762.7 | 73.4 | 23.0 | 60 | NNE | 2.3 | 1.03 | ..... | 3 | 4 | SW | ..... | 0 | 0 | Cloudy..... | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.34 | 745.2 | 30.24 | 768.2 | 54.9 | 12.7 | 65 | NE | 26.4 | 11.81 | ..... | 5 | 0 | NE | ..... | 0 | 0 | Cloudy..... | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.99 | 761.7 | 30.06 | 763.4 | 71.2 | 21.8 | 83 | ESE | 6.5 | 2.9 | ..... | 5c;cs | 0 | W | ..... | Inap. | Inap. | Fair ..... | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 30.08 | 764.0 | 30.18 | 766.5 | 59.9 | 15.5 | 73 | SW | 7.8 | 3.3 | ..... | 0 | 10 | ..... | W | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W.I. | 29.97 | 761.2 | 30.06 | 763.5 | 77.4 | 25.2 | 80 | E | 0 | 0 | ..... | 6kn | 4kn | E | E | 0.197 | 5.00 | Cloudy..... | Leonardo de Tejeda, Chief of Engineers. |

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

## SWEDISH SERIES.

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

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.69 | 754.2 | 29.73 | 755.2 | 16.2 | — 8.8 | ..... | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.74 | 755.4 | 29.79 | 756.7 | 30.2 | — 1.0 | 61 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.79 | 756.6 | 29.84 | 757.9 | 33 8 | 1.0 | 51 | Calm | ..... | ..... | 0 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.70 | 754.3 | 29.87 | 758.8 | 28.4 | — 2.0 | 60 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.85 | 758.1 | 29.91 | 759.6 | 30.6 | — 0.8 | 92 | NNW | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0.012 | 0.3 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.80 | 756.9 | 29.87 | 758.8 | 31.6 | — 0.2 | 67 | NNW | 6.3 | 2.8 | ..... | ..... | 1 | ..... | N | 0.008 | 0.20 | ..... | Dr. Hildebrandsson. |

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

## SWISS SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.67 | 728.3 | 30.13 | 765.2 | 45.3 | 7.4 | 67 | N | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0 | 0 | Vapory | The Observatory. |
| Zurich | 28.47 | 723.1 | 30.15 | 765.9 | 40.6 | 4.8 | 63 | W | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0.079 | 2.0 | Cloudy | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +3.3 mm.; Thermometer, +0.6 cent.; Relative Humidity, —6 per cent.

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

## TURKISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.00 | 763.5 | 41.9 | 5.5 | 54 | N | 13 | 6.0 | ..... | ..... | 7 | ..... | SW | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanides. |
| Valona | ..... | ..... | 30.19 | 766.8 | 48.7 | 9.3 | ..... | NW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | A. Bertrand. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria.) Lee Obs'y | 29.94 | 760.5 | 30.00 | 763.4 | 65.7 | 18.7 | 69 | SW | ..... | ..... | 3 | ..... | 5ks | ..... | SW | 0 | 0 | D. clouds | Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.97 | 761.2 | 30.28 | 769.1 | 45 | 7.2 | ..... | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | W. R. Bigg. |
| *Chatham, N B | 29.87 | 758.7 | 29.93 | 760.2 | 35 | 1.7 | 76 | SW | 7 | 3.1 | ..... | 2k | 8ks | NW | NW | 0.07 | 1.8 | Cloudy | G. A. Blair. |
| Charlottetown, P. E. Island | 29.95 | 760.7 | 29.99 | 761.7 | 30 | — 1.1 | 96 | S | 12 | 5.4 | ..... | 10n | ..... | Calm | 0.050 | 1.27 | Cloudy | H. J. Cundall, C. E. | |
| Cornwall, Ontario | 30.12 | 765.0 | 30.32 | 770.1 | 41.0 | 5.0 | 76 | W | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | James Smith, M. A |
| Dalhousie, N. B | 29.75 | 755.6 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson. |
| Esquimault, B. C | 30.05 | 763.3 | 30.10 | 764.5 | 45.8 | 7.7 | 100 | SW | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.07 | 1.8 | Cloudy | W. H. Bevis. |
| *Father Point, Quebec | 30.00 | 762.0 | 30.02 | 762.5 | 34 | 1.1 | 90 | W | 18 | 8.0 | ..... | 2k | 2s | N | ..... | 0.07 | 1.8 | Fair | J. McWilliams. |
| Fredericton, N. B | 29.98 | 761.5 | 30.05 | 763.3 | 39.0 | 4.4 | 74 | W | 2 | 0.9 | ..... | 5ck | 0 | ..... | ..... | 0 | 0 | Fair | Prof. Harrison. |
| *Fort Garry Manitoba | 29.10 | 739.1 | 29.95 | 760.7 | 34 | 1.1 | 100 | E | 19 | 8.5 | ..... | 5k | 5n | E | E | 0.960 | 24.38 | Heavy rain | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 29.07 | 738.4 | 30.19 | 766.8 | 47 | 8.3 | 85 | SE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Grant. |
| *Halifax, N. S | 29.95 | 760.7 | 30.08 | 764.0 | 33 | 0.6 | 95 | S | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0.020 | 0.51 | Cloudy | F. Allison, M. A. |
| Hamilton, Ontario | 29.90 | 759.4 | 30.28 | 769.1 | 36.2 | 2.3 | 94 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.74 | 755.4 | 29.77 | 756.1 | 29 | — 1.7 | 100 | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.26 | 6.6 | Snowing | E. Weedon. |
| *Kingston, Ontario | 29.90 | 759.4 | 30.25 | 768.3 | 41 | 5.0 | 84 | SW | 2 | 0.9 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.94 | 760.5 | 29.98 | 761.5 | 29 | — 1.7 | ..... | N | 3 | 1.3 | ..... | 4k | 0 | N | ..... | 0 | 0 | Fair | C. H. Rigby. |
| *Montreal, Quebec | 30.01 | 762.2 | 30.21 | 767.3 | 46 | 7.8 | 62 | W | 12 | 5.4 | ..... | 8k | 2s | W | ..... | 0 | 0 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.54 | 750.3 | 30.26 | 768.6 | 38 | 3.3 | 95 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Rev. R. Mosley. |
| Peterboro, Ontario | 29.48 | 748.8 | 30.26 | 768.6 | 36.7 | 2.6 | 88 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.52 | 749.8 | 30.23 | 767.8 | 46 | 7.8 | 86 | E | 5 | 2.2 | ..... | 10c | 0 | SW | ..... | 0 | 0 | Fair | H. Morgan. |
| Port Hastings, N. S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Peter Grant. |
| Port Stanley, Ontario | 29.54 | 750.3 | 30.20 | 767.1 | 47 | 8.3 | 82 | E | 12 | 5.4 | ..... | 8ck | 0 | SW | ..... | 0 | 0 | Fair | M. Payne. |
| *Quebec, Quebec | 29.84 | 757.9 | 30.18 | 766.6 | 37 | 2.8 | 81 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0.05 | 1.3 | Cloudy | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.82 | 757.4 | 30.30 | 769.6 | 33 | 0.6 | 80 | W | 2 | 0.9 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 30.00 | 762.0 | 30.05 | 763.3 | 38 | 3.3 | 85 | W | 3 | 1.3 | ..... | 5k | 5ks | NW | ..... | 0.01 | 0.3 | Cloudy | Dr. Gove. |
| St. John, N. B | 29.94 | 760.5 | 30.01 | 762.2 | 35 | 1.7 | 80 | S | 2 | 0.9 | ..... | ..... | 10ks | ..... | ..... | 0.030 | 0.76 | Cloudy | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.46 | 748.3 | 30.18 | 766.6 | 48 | 8.9 | 84 | SE | 4 | 1.8 | ..... | 8cs | 0 | ..... | ..... | 0 | 0 | Cloudy | K. Stewart. |
| Stayner, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. J. Cole. |
| Stratford, Ontario | 28.91 | 734.3 | 30.20 | 767.1 | 43.3 | 6.3 | 89 | SE | 2 | 0.9 | ..... | 1cs | 8s | ..... | ..... | 0 | 0 | Fair | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.03 | 762.7 | 30.06 | 763.5 | 31 | — 0.6 | 76 | SW | 10 | 4.5 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light snow | T. C. Hill. |
| *Toronto, Ontario | 29.87 | 758.7 | 30.27 | 768.8 | 38 | 3.3 | 88 | Calm | 0 | 0 | ..... | 8c | 0 | NW | ..... | 0 | 0 | Fair | Magnetic Observatory. |
| Windsor, N. S | 29.95 | 760.7 | 30.04 | 763.0 | 32.5 | 0.3 | 94 | SW | 14 | 6.3 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Fair | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 32.0 | 0.0 | 100 | W | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0.09 | 2.3 | Snowing | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182ft. or 360.3 m.

UNITED STATES SERIES.

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

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

| STATIONS | BAROMETER. Corrected for instrumental error and temperature. Inches. | BAROMETER. Corrected for instrumental error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0–10 | CLOUDS. Amount. Up'er 0–10 | CLOUDS. Amount. Low'r 0–10 | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 30.05 | 763.3 | 30.28 | 769.1 | 43 | 6.1 | 67 | S | 6 | 2.7 | ..... | 0 | Sm'c | ..... | ..... | 0 | 0 | Clear | |
| Alpena, Michigan | 29.47 | 748.5 | 30.14 | 765.5 | 39 | 3.9 | 91 | NE | 6 | 2.7 | ..... | 2c | Haze | NW | ..... | 0 | 0 | Fair | |
| Atlantic City, New Jersey | 30.38 | 771.6 | 30.40 | 772.1 | 40 | 4.4 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Augusta, Georgia | 30.06 | 763.5 | 30.24 | 768.1 | 61 | 16.1 | 85 | E | 2 | 0.9 | ..... | ..... | 10s | ..... | SE | Inap. | Inap. | Threatening | |
| Baltimore, Maryland | 30.33 | 770.4 | 30.38 | 771.6 | 48 | 8.9 | 63 | E | 2 | 0.9 | ..... | 2k | Sm'c | SW | Calm | 0 | 0 | Fair | |
| Barnegat, New Jersey | 30.38 | 771.6 | 30.40 | 772.1 | 45 | 7.2 | 91 | NW | 4 | 1.8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Bismarck, Dakota | 27.87 | 707.9 | 29.72 | 754.9 | 35 | 1.7 | 100 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | N | 0.20 | 5.1 | Cloudy | |
| Boise City, Idaho | 27.18 | 690.4 | 30.06 | 763.5 | 32 | 0.0 | 79 | Calm | 0 | 0 | ..... | 2k | 5s | Calm | Calm | 0 | 0 | Fair | |
| Boston, Massachusetts | 30.08 | 764.0 | 30.23 | 767.8 | 56 | 10.0 | 42 | SW | 18 | 8.0 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear. | |
| Brackettville, Texas | 28.74 | 730.0 | 29.80 | 756.9 | 38 | 3.3 | 54 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Breckenridge, Minnesota | 28.56 | 725.4 | 29.52 | 749.8 | 49 | 9.4 | 93 | E | 24 | 10.7 | ..... | ..... | ..... | 10n | Calm | 0.80 | 20.3 | Light rain | |
| Brownsville, Texas | 29.89 | 759.2 | 29.96 | 761.0 | 49 | 9.4 | 85 | SW | 4 | 1.8 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Hazy | |
| Buffalo, New York | 29.49 | 749.0 | 30.20 | 767.1 | 54 | 12.2 | 61 | Calm | 0 | 0 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 38 | 3.3 | 56 | NW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 30.09 | 762.0 | 30.27 | 768.8 | 42 | 5.6 | 65 | S | 4 | 1.8 | ..... | 1ck | 0 | W | ..... | 0 | 0 | Clear | |
| Cairo, Illinois | 29.40 | 746.7 | 29.78 | 756.4 | 59 | 15.0 | 94 | W | 8 | 3.6 | ..... | ..... | 10n | ..... | W | 1.66 | 42.2 | Light rain | |
| Camp Grant, Arizona | 25.70 | 677.5 | 29.90 | 759.4 | 34 | 1.1 | 61 | E | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | 26.70 | 678.2 | 30.19 | 766.8 | 29 | — 1.7 | 56 | NW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.41 | 696.2 | 29.98 | 761.5 | 27 | — 2.8 | 88 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.36 | 771.1 | 30.37 | 771.4 | 55 | 12.8 | 93 | Calm | 0 | 0 | ..... | 2k | Haze | SE | Calm | 0 | 0 | Fair | |
| Cape Henry, Virginia | 30.34 | 770.6 | 30.36 | 771.1 | 51 | 10.6 | 93 | Calm | 0 | 0 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 30.35 | 770.9 | 30.37 | 771.4 | 61 | 16.1 | 82 | SE | 8 | 3.6 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Cape May, New Jersey | 30.37 | 771.4 | 30.40 | 772.1 | 45 | 7.2 | 84 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 30.22 | 767.6 | 30.29 | 769.4 | 62 | 16.7 | 94 | SE | 9 | 4.0 | ..... | ..... | 10s | ..... | SE | 0.04 | 1.0 | Cloudy | |
| Cheyenne, Wyoming | 23.73 | 602.7 | 29.67 | 753.6 | 18 | — 7.8 | 100 | NW | 20 | 8.9 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Snowing | |
| Chicago, Illinois | 29.14 | 740.1 | 29.82 | 757.4 | 52 | 11.1 | 73 | SE | 12 | 5.4 | ..... | 8k | 2s | SE | SE | 0.02 | 0.5 | Cloudy | |
| Cincinnati, Ohio | 29.35 | 745.5 | 29.98 | 761.5 | 61 | 16.1 | 55 | SE | 13 | 5.8 | ..... | ..... | 10s | ..... | W | 0 | 0 | Threatening | |
| Cleveland, Ohio | 29.43 | 747.5 | 30.06 | 763.1 | 53 | 11.7 | 67 | SE | 12 | 5.4 | ..... | 2cs | 5s | Calm | Calm | 0 | 0 | Fair | |
| Concho, Texas | 28.04 | 712.2 | 29.77 | 756.1 | 35 | 1.7 | 19 | SW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.43 | 747.5 | 29.90 | 759.4 | 45 | 7.2 | 76 | W | 1 | 0.4 | ..... | Haze | 0 | Calm | ..... | 0.16 | 4.1 | Clear | |
| Davenport, Iowa | 29.02 | 737.1 | 29.64 | 752.8 | 59 | 15.0 | 76 | SE | 20 | 8.9 | ..... | ..... | 10ks | ..... | SE | 0.24 | 6.1 | Cloudy | |
| Deadwood, Dakota | 25.16 | 639.0 | ..... | ..... | 23 | — 5.0 | 100 | S | 2 | 0.9 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Heavy snow | |
| Denison, Texas | 29.05 | 738.9 | 29.90 | 759.4 | 42 | 5.6 | 66 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denver, Colorado | 24.49 | 622.0 | 29.71 | 754.6 | 32 | 0.0 | 21 | NW | 16 | 7.2 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Detroit, Michigan | 29.42 | 747.3 | 30.09 | 764.3 | 49 | 9.4 | 78 | E | 3 | 1.3 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Dodge City, Kansas | 27.17 | 690.1 | 29.53 | 750.0 | 26 | — 3.3 | 88 | W | 12 | 5.4 | ..... | 0 | 5s | ..... | W | 0 | 0 | Fair | |
| Dubuque, Iowa | 28.96 | 735.6 | 29.63 | 752.6 | 57.5 | 14.2 | 79 | SE | 11 | 4.9 | ..... | ..... | 10ks | ..... | SE | 0.70 | 17.8 | Threatening | |
| Duluth, Minnesota | 29.26 | 743.2 | 29.95 | 760.7 | 38 | 3.3 | 91 | NE | 40 | 17.9 | ..... | ..... | 10n | ..... | NE | 0.18 | 4.6 | Light rain | |
| Eagle Pass, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Eastport, Maine | 29.97 | 761.2 | 30.03 | 762.7 | 38 | 3.3 | 85 | SW | 12 | 5.4 | ..... | 5k | 5s | W | Calm | Inap. | Inap. | Cloudy | |
| Erie, Pennsylvania | 29.44 | 747.8 | 30.16 | 766.1 | 55 | 12.8 | 62 | S | 20 | 8.9 | ..... | 5c | Haze | ..... | ..... | 0 | 0 | Fair | |
| Escanaba, Michigan | 29.37 | 746.0 | 30.04 | 763.0 | 40 | 4.4 | 82 | N | 14 | 6.3 | ..... | 5c | Haze | N | ..... | 0 | 0 | Hazy | |
| Florence, Arizona | 28.31 | 719.1 | 29.91 | 759.7 | 35 | 1.7 | 53 | W | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | 23.97 | 608.8 | 29.97 | 761.2 | 23 | — 5.0 | 60 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.34 | 643.6 | ..... | ..... | 28 | — 2.2 | 43 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.28 | 743.7 | 29.83 | 757.7 | 37 | 2.8 | 90 | S | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.62 | 726.9 | 29.93 | 760.2 | 33 | 0.6 | 69 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.60 | 751.8 | 29.64 | 752.8 | — 5 | —20.6 | 100 | W | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Sill, Indian Territory | 28.63 | 727.2 | 29.76 | 755.9 | 37 | 2.8 | 54 | NW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Galveston, Texas | 29.90 | 759.4 | 29.94 | 760.5 | 58 | 14.4 | 87 | S | 4 | 1.8 | ..... | 2ck | 0 | W | ..... | 0.03 | 0.8 | Fair | |
| Grand Haven, Michigan | 29.31 | 744.5 | 29.94 | 760.5 | 55 | 12.8 | 74 | SE | 12 | 5.4 | ..... | Haze | 5s | Calm | Calm | 0 | 0 | Fair | |
| Indianapolis, Indiana | 29.12 | 739.6 | 29.87 | 758.7 | 61 | 16.1 | 55 | SE | 18 | 8.0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Indianola, Texas | 29.93 | 739.2 | 29.96 | 761.0 | 62 | 11.1 | 73 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.74 | 730.0 | 29.90 | 759.4 | 36 | 2.2 | 71 | SW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.13 | 765.3 | 30.16 | 766.1 | 65 | 18.3 | 84 | E | 8 | 3.6 | ..... | 5k | 0 | Calm | ..... | 0.05 | 1.3 | Fair | |
| Keokuk, Iowa | 28.98 | 736.1 | 29.57 | 751.1 | 58 | 14.4 | 76 | SW | 7 | 3.1 | ..... | ..... | 10s | ..... | Calm | 1.37 | 34.8 | Cloudy | |
| Key West, Florida | 30.04 | 763.0 | 30.07 | 763.8 | 73 | 22.8 | 81 | E | 13 | 5.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Kittyhawk, North Carolina | 30.35 | 770.9 | 30.38 | 771.6 | 51 | 10.6 | 100 | E | 1 | 0.4 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Knoxville, Tennessee | 29.09 | 738.9 | 30.09 | 764.3 | 59 | 15.0 | 59 | E | 3 | 1.3 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| La Crosse, Wisconsin | 28.98 | 736.1 | 29.69 | 754.1 | 58 | 14.4 | 82 | SE | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.23 | 5.8 | Light rain | |
| La Mesilla, New Mexico | 25.98 | 659.9 | 30.13 | 765.3 | 35 | 1.7 | 70 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.50 | 749.3 | 29.85 | 758.2 | 49 | 9.4 | 71 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 28.76 | 730.5 | 29.60 | 751.8 | 30 | 3.9 | 82 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.64 | 752.8 | 29.99 | 761.7 | 41 | 5.0 | 69 | N | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.35 | 745.5 | 29.90 | 759.4 | 62 | 16.7 | 46 | SE | 18 | 8.0 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light rain | |
| Lynchburg, Virginia | 29.65 | 753.1 | 30.34 | 770.6 | 53 | 11.7 | 66 | E | 1 | 0.4 | ..... | 0 | 5ks | ..... | Calm | 0 | 0 | Fair | |
| Marquette, Michigan | 29.39 | 746.5 | 30.10 | 764.5 | 39 | 3.9 | 82 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Mason, Texas | 28.26 | 717.8 | 30.07 | 763.8 | 37 | 2.8 | 71 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.51 | 749.5 | 29.83 | 757.7 | 54 | 12.2 | 79 | SW | 4 | 1.8 | ..... | ..... | 8s | ..... | SW | 2.30 | 58.4 | Cloudy | |
| Milwaukee, Wisconsin | 29.20 | 741.7 | 29.89 | 759.2 | 45 | 7.2 | 92 | SE | 7 | 3.1 | ..... | ..... | 10ks | ..... | S | 0.04 | 1.0 | Cloudy | |
| Mobile, Alabama | 29.88 | 758.9 | 29.93 | 760.2 | 63.5 | 17.5 | 80 | S | 16 | 7.2 | ..... | ..... | 10s | ..... | SW | 1.46 | 37.1 | Cloudy | |
| Montgomery, Alabama | 29.61 | 752.1 | 29.84 | 757.9 | 63 | 17.2 | 78 | SE | 36 | 16.1 | ..... | ..... | 10s;ks | ..... | SW;SE | 0.48 | 12.2 | Cloudy | |
| Morgantown, West Virginia | 29.15 | 740.4 | 30.22 | 767.6 | 49 | 9.4 | 64 | E | 1 | 0.4 | ..... | 10c | Sm'c | SW | ..... | 0 | 0 | Foggy | |
| Mt. Washington, N. H. | 23.75 | 603.2 | 30.11 | 764.8 | 29 | — 1.7 | 100 | NW | 84 | 37.5 | ..... | ..... | Fog | ..... | NW | 0 | 0 | Cloudy | |
| Nashville, Tennessee | 29.32 | 744.7 | 29.84 | 757.9 | 64 | 17.8 | 58 | SE | 12 | 5.4 | ..... | 10k | 0 | SE | ..... | 0 | 0 | Clear | |
| New Haven, Connecticut | 30.22 | 767.6 | 30.34 | 770.6 | 44 | 6.7 | 76 | S | 3 | 1.3 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Dense fog | |
| New London, Connecticut | 30.30 | 769.6 | 30.35 | 770.9 | 41 | 5.0 | 91 | SW | 4 | 1.8 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| New Orleans, Louisiana | 29.85 | 758.2 | 29.91 | 759.7 | 59 | 15.0 | 82 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 2.76 | 70.1 | Clear | |
| Newport, Rhode Island | 30.26 | 768.6 | 30.31 | 769.9 | 41 | 5.0 | 82 | SW | 12 | 5.4 | ..... | 2c | 0 | W | ..... | 0 | 0 | Clear | |
| New York, New York | 30.20 | 767.1 | 30.38 | 771.6 | 41 | 5.0 | 83 | SW | 5 | 2.2 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Norfolk, Virginia | 30.31 | 769.9 | 30.37 | 771.4 | 50 | 10.0 | 93 | SE | 1 | 0.4 | ..... | 2cs | Fog | Calm | ..... | 0 | 0 | Foggy | |
| North Platte, Nebraska | 26.76 | 679.7 | 29.35 | 745.5 | 30 | — 1.1 | 89 | NW | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Olympia, Washington Ter. | 30.10 | 764.5 | 30.14 | 765.5 | 44 | 6.7 | 92 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.17 | 4.3 | Clear | |
| Omaha, Nebraska | 28.45 | 722.6 | 29.50 | 749.3 | 43 | 6.1 | 92 | Calm | 0 | 0 | ..... | 2c | 2s | Calm | Calm | 0 | 0 | Fair | |
| Oswego, New York | 29.94 | 760.5 | 30.27 | 768.8 | 48 | 8.9 | 78 | S | 4 | 1.8 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Pembina, Dakota | 29.00 | 736.6 | 29.83 | 757.7 | 43 | 6.1 | 75 | E | 24 | 10.7 | ..... | ..... | 10s | ..... | E | 1.22 | 31.0 | Cloudy | |
| Philadelphia, Pennsylvania | 30.37 | 771.4 | 30.42 | 772.7 | 47 | 8.3 | 69 | S | 1 | 0.4 | ..... | 0 | Fog;hz | ..... | Calm | 0 | 0 | Clear | |
| Phœnix, Arizona | 28.82 | 732.0 | 30.67 | 779.0 | 45 | 7.2 | 46 | S | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.23 | 437.6 | 29.44 | 747.8 | —11 | —23.9 | 52 | NW | 42 | 18.8 | ..... | 0 | 0 | ..... | ..... | 0.14 | 3.6 | Clear | |
| Pioche, Nevada | 23.95 | 608.3 | 29.72 | 754.9 | 25 | — 3.9 | 75 | NW | 3 | 1.3 | ..... | 5c | 5s | Calm | Calm | 0 | 0 | Cloudy | |
| Pittsburg, Pennsylvania | 29.40 | 746.7 | 30.22 | 767.6 | 52 | 11.1 | 66 | E | 3 | 1.3 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Port Huron, Michigan | 29.43 | 747.5 | 30.09 | 764.3 | 53 | 11.7 | 73 | SE | 6 | 2.7 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Portland, Maine | 30.10 | 764.5 | 30.15 | 765.8 | 42 | 5.6 | 74 | S | 4 | 1.8 | ..... | 5k | Haze | W | ..... | 0 | 0 | Fair | |
| Portland, Oregon | 30.16 | 766.1 | 30.27 | 768.8 | 43 | 6.1 | 83 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | |
| Prescott, Arizona | 24 68 | 626.9 | 30.04 | 763.0 | 22 | — 5.6 | 45 | N | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Punta Rassa, Florida | 30.07 | 763.8 | 30.08 | 764.0 | 67 | 19.4 | 73 | E | 12 | 5.4 | ..... | 10k | Haze | E | Calm | 0 | 0 | Cloudy | |
| Red Bluff, California | 29.76 | 755.9 | 30.12 | 765.0 | 49 | 9.4 | 85 | NW | 4 | 1.8 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Rochester, New York | 29.59 | 751.6 | 30.21 | 767.3 | 55 | 12.8 | 56 | SW | 4 | 1.8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roseburg, Oregon | 29.69 | 754.1 | 30.28 | 769.1 | 44.5 | 6.9 | 96 | Calm | 0 | 0 | ..... | Haze | 8s | ..... | Calm | 0.28 | 7.1 | Cloudy | |
| Sacramento, California | 30.01 | 762.2 | 30.09 | 764.3 | 50 | 10.0 | 90 | SE | 4 | 1.8 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| St. Louis, Missouri | 29.17 | 740.9 | 29.73 | 755.1 | 55 | 12.8 | 87 | SW | 3 | 1.3 | ..... | ..... | 10s | ..... | S | 0.75 | 19.1 | Cloudy | |
| St. Marks, Florida | 30.06 | 763.5 | 30.08 | 764.0 | 66 | 18.9 | 78 | SE | 18 | 8.0 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| St. Paul, Minnesota | 28.80 | 731.5 | 29.60 | 751.8 | 54 | 12.2 | 90 | E | 18 | 8.0 | ..... | ..... | 10n | ..... | SE | 0.39 | 9.9 | Light rain | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.99 | 660.2 | 29.93 | 760.2 | 28 | — 2.2 | 77 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Antonio, Texas | 29.22 | 742.2 | 29.82 | 757.4 | 43 | 6.1 | 83 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Diego, California | 29.98 | 761.5 | 30.05 | 763.3 | 45 | 7.2 | 76 | NE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandusky, Ohio | 29.44 | 747.8 | 30.11 | 764.8 | 55 | 12.8 | 74 | S | 16 | 7.2 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Sandy Hook, New Jersey | 30.37 | 771.4 | 30.39 | 771.9 | 42 | 5.6 | 83 | SW | 9 | 4.0 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| San Francisco, California | 30.06 | 763.5 | 30.12 | 765.0 | 55 | 12.8 | 87 | SE | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.03 | 0.8 | Light rain | |
| Santa Fé, New Mexico | 23.03 | 585.0 | 29.57 | 751.1 | 24 | — 4.4 | 55 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 30.13 | 765.3 | 30.22 | 767.6 | 65 | 18.3 | 78 | S | 5 | 2.2 | ..... | 2cs | 8s | W | SE | Inap. | Inap. | Fair | |
| Shreveport, Louisiana | 29.71 | 754.6 | 29.93 | 760.2 | 46 | 7.8 | 100 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.50 | 12.7 | Clear | |
| Smithville, North Carolina | 30.31 | 769.9 | 30.35 | 770.9 | 60 | 15.6 | 88 | SE | 7 | 3.1 | ..... | 5cs | 5ks | Calm | SE | 0 | 0 | Cloudy | |
| Springfield, Massachusetts | 30.08 | 764.0 | 30.21 | 767.3 | 43 | 6.1 | 59 | S | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Stockton, Texas | 26.83 | 681.5 | 29.83 | 757.7 | 38 | 3.3 | 30 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 30.14 | 765.5 | 30.20 | 767.1 | 41 | 5.0 | 82 | SW | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Smoky | |
| Toledo, Ohio, | 29.40 | 746.7 | 30.07 | 763.8 | 53 | 11.7 | 79 | E | 4 | 1.8 | ..... | 8c | 0 | W | ..... | 0 | 0 | Fair | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 30 | — 1.1 | 79 | SE | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tybee Island, Georgia | 30.18 | 766.6 | 30.21 | 767.3 | 60 | 15.6 | 94 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Umatilla, Oregon | 29.81 | 757.2 | ..... | ..... | 40 | 4.4 | 82 | E | 6 | 2.7 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Vicksburg, Mississippi | 29.66 | 753.4 | 29.93 | 760.2 | 52 | 11.1 | 100 | SW | 2 | 0.9 | ..... | 0 | 5s | ..... | W | 4.51 | 114.6 | Fair | |
| Virginia City, Montana | 24.23 | 615.4 | 29.71 | 754.6 | 25 | — 3.9 | 62 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Visalia, California | 29.77 | 756.1 | 30.15 | 765.8 | 43 | 6.1 | 92 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C | 30.27 | 768.8 | 30.39 | 771.9 | 46 | 7.8 | 69 | E | 2 | 0.9 | ..... | 2c | 2s; sm | SW | SW | 0 | 0 | Smoky | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 32 | 0.0 | 59 | NW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.25 | 768.8 | 30.33 | 770.4 | 60 | 15.6 | 82 | SE | 5 | 2.2 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Winnemucca, Nevada | 25.62 | 650.7 | 29.98 | 761.5 | 34 | 1.1 | 61 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Wood's Holl, Mass | 30.26 | 768.6 | 30.31 | 769.9 | 50 | 10.0 | 71 | SW | 12 | 5.4 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear | |
| Yankton, Dakota | 28.30 | 718.8 | 29.56 | 750.8 | 43 | 6.1 | 91 | E | 1 | 0.4 | ..... | ..... | Fog | ..... | Calm | 0.02 | 0.5 | Foggy | |
| Yuma, Arizona | 29.87 | 758.7 | 30.04 | 763.0 | 60 | 10.0 | 32 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 30.61 | 777.5 | 30.66 | 778.7 | 30 | — 1.1 | 87 | NE | 4 | 1.8 | ..... | 2c | 3s | E | ..... | 0.01 | 0.3 | Cloudy | J. Fortescue, W. Wood |
| Havana, Cuba, W. I. | 30.00 | 762.0 | 30.02 | 762.5 | 73 | 22.8 | 85 | SE | 1.2 | 0.5 | ..... | 8c | 0 | Calm | ..... | 0 | 0 | Fair | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.12 | 765.0 | 30.13 | 765.3 | 75 | 23.9 | 90 | Calm | 0 | 0 | ..... | 2ck | 0 | Calm | ..... | 0.34 | 8.6 | ..... | James Gall. |
| Navassa, W. I. | 29.91 | 759.7 | 29.99 | 761.7 | 79 | 26.1 | ..... | E | 8 | 3.6 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | ..... | ..... | 30.01 | 762.2 | 81 | 27.2 | 83 | E | ..... | ..... | 2 | ..... | 8ks | ..... | ..... | 0 | 0 | Cloudy | C. J. Hering. |
| Batavia, Dutch Guiana, S. A. | 30.07 | 763.8 | 30.08 | 764.0 | 81.5 | 27.5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.25 | 641.3 | ..... | ..... | 68.5 | 20.8 | 85 | Calm | ..... | ..... | 0 | ..... | 10ks | ..... | ..... | 0.45 | 11.4 | ..... | Thomas Herran |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medillin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,838 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,700 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.6 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,676 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,550 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.56 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er. 0—10. | Clouds. Amount. Low'r. 0—10. | Clouds. Direction. Up'er. From— | Clouds. Direction. Low'r. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.06 | 763.5 | 53 | 11.7 | 51 | 10.6 | 100 | NW | 2 | 0.9 | .... | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Overcast..... | |
| Navy Yard, Pensacola, Fla. | 30.06 | 763.5 | 62 | 16.7 | 63 | 17.2 | 94 | SSE | 11 | 4.9 | .... | ..... | 10 | ..... | ..... | 2.84 | 72. 1 | ..... | ..... | Raining..... | |
| Navy Yard, Portsmouth, N.H | 30.20 | 767.1 | 62 | 16.7 | 39 | 3.9 | 73 | W | 2 | 0.9 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Misty..... | |
| Naval Hospital, Yokohama, Japan | 30.15* | 765.8* | 50 | 10.0 | 42.2 | 5.7 | ? | NNE | ..... | ..... | 3 | ..... | 9s | ..... | WNW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Adams. Panama | 29.97 | 761.2 | 81 | 27.2 | 81 | 27.2 | 87 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Alliance, Piraeus, Greece | 30.16‡ | 766.1‡ | ..... | ..... | 52 | 11.1 | 41 | N | ..... | ..... | 1 | ..... | 3 | ..... | NNW | ..... | ..... | ..... | ..... | Clear..... | |
| Ashuelot. Shanghai, China | 30.40* | 772.1* | 54 | 12.2 | 48 | 8.9 | 78 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | D. clouds..... | |
| Canonicus, New Orleans, La | 29.90 | 759.4 | 49 | 9.4 | 57 | 13.9 | 88 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Colorado, New York, N. Y. | 30.30‡ | 769.6‡ | ..... | ..... | 46 | 7.8 | 69 | WSW | 9 | 4.0 | ..... | ..... | 8 | ..... | WSW | 0 | 0 | ..... | ..... | Foggy..... | |
| Constitution, N. 41° 41′ W. 51° 31′ | 29.79‡ | 756.7‡ | ..... | ..... | 43 | 6.1 | 83 | NW | ..... | ..... | 2 | ..... | 2 | ..... | Calm | ..... | ..... | Long | W | Clear..... | |
| Despatch, Constantinople, Turkey | 30.22 | 767.6 | 81 | 27.2 | 44 | 6.7 | 60 | NW | ..... | ..... | 4 | ..... | 8 | ..... | NW | ..... | ..... | ..... | ..... | Snowing..... | |
| Enterprise, New Orleans, La | 29.93‡ | 760.2‡ | ..... | ..... | 60 | 15.6 | 88 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Franklin, Norfolk, Va | 30.38‡ | 771.6‡ | ..... | ..... | 53 | 11.7 | 86 | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | ..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.08 | 764.0 | 73 | 22.8 | 72 | 22.2 | 76 | NE | ..... | ..... | 3 | ..... | 2 | ..... | NE | ..... | ..... | Mod'ate Ground | NW | Clear..... | |
| Marion, Piraeus, Greece | 30.12 | 765 0 | 58 | 14.4 | 54 | 12.2 | 38 | NNE | ..... | ..... | 2 | ..... | 2 | ..... | NNW | 0 | 0 | ..... | ..... | Fair..... | |
| Michigan, Erie, Pa | 29.68 | 753.9 | 62 | 16.7 | 55 | 12.8 | 62 | S | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Monongahela. N. 18° 30′, E. 117° 50′ | 30.16* | 766.1* | 77 | 25.0 | 77 | 25.0 | 86 | N | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Mod'ate | N | D. clouds..... | |
| New Hampshire, Port Royal, S. C | 30.43 | 772 9 | 65 | 18.3 | 64 | 17.8 | 94 | S | 11 | 4.9 | ..... | ..... | 8 | ..... | S | 0 | 0 | ..... | ..... | Cloudy..... | |
| Omaha, S. 11° 25′, W. 30° 50′ | 30.12* | 765.0* | 83 | 28.3 | 81.5 | 27.5 | 73 | ESE | 4 | 1.8 | ..... | ..... | 2 | ..... | ESE | 0 | 0 | Mod'ate | E | Pleasant..... | |
| Onward, Callao, Peru | 30.03† | 762.7† | ..... | ..... | 72 | 22.2 | 90 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, N. 20° 00′, W. 90° 48′ | 29.91‡ | 759.7‡ | ..... | ..... | 79 | 26.1 | 86 | SW | ..... | ..... | 1 | ..... | 8 | ..... | ENE | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Palos, Shanghai, China | 30.41* | 772.4* | 55 | 12.8 | 47 | 8.3 | 85 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Pensacola, Honolulu, H. I | 30.23 | 767.8 | 74 | 23.3 | 72 | 22.2 | 100 | NE | 12 | 5.4 | ..... | ..... | 2 | ..... | ..... | 0.01 | 0.3 | ..... | ..... | Clear..... | |
| Plymouth. Norfolk, Va | 30.29‡ | 769.4‡ | ..... | ..... | 53 | 11.7 | 86 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Powhatan, Santiago de Cuba, W. I. | 30.07‡ | 763.8‡ | ..... | ..... | 79 | 26.1 | 95 | N | 1.2 | 0.5 | ..... | ..... | 8 | ..... | ..... | 0.02 | 0.5 | Smooth | ..... | Pleasant..... | |
| Ranger. Amoy, China | 30.39* | 771.9* | ..... | ..... | 59.5 | 15 3 | 85 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Smooth | ..... | Drizzling..... | |
| Rio Bravo, Brownsville, Texas | ..... | ..... | ..... | ..... | 47 | 8.3 | 92 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Heavy dew.. | |
| Santee, Annapolis, Md | 30.44* | 773.2* | 60 | 15.6 | 49 | 9.4 | 71 | E | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Saratoga, Washington, D. C | 30.30* | 769.6* | ..... | ..... | 46 | 7.8 | 100 | NE | ..... | ..... | 1 | ..... | 5 | ..... | Calm | 0 | 0 | ..... | ..... | Pleasant..... | |
| St. Louis, League Island, Pa | 30.32 | 770.1 | 58 | 14.4 | 44 | 6 7 | 92 | SW | 2 | 0.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Supply, N. 48° 25′ W. 30° 05′ | 30.30 | 769.6 | 57 | 13.9 | 54 | 12.2 | 93 | SSE | ..... | ..... | 6 | ..... | 10 | ..... | SSE | ..... | ..... | Mod'ate | SW | Cloudy..... | |
| Swatara, N. 14° 31′ W. 73° 24′ | 30.08* | 764 0* | ..... | ..... | 81 | 27.2 | 83 | ENE | ..... | ..... | 5 | ..... | 5 | ..... | E | ..... | ..... | Smooth | ..... | D. clouds..... | |
| Tennessee, N. 6° 14′, E. 107° 11′ | 29.99* | 761.7* | 82 | 27.8 | 82 | 27.8 | 87 | NNE | 5 | 2.2 | ..... | ..... | 5 | ..... | NNE | 0 | 0 | Long | NNE | D. clouds..... | |
| Trenton, Smyrna, Turkey | 30.05‡ | 763.3‡ | ..... | ..... | 50 | 10.0 | 72 | N | ..... | ..... | 3-4 | ..... | 2 | ..... | N | 0.5 | 13. | Smooth | ..... | Fair..... | |
| Tuscarora, N. 28° 30,′ W. 116° 20′ | 30.16 | 766.1 | 62 | 16.7 | 59 | 15.0 | 82 | NW | ..... | ..... | 3 | ..... | 2 | ..... | NW | 0 | 0 | smooth | NW | Fair..... | |
| Vandalia, Piraeus, Greece | 30.06‡ | 763.5‡ | ..... | ..... | 54 | 12.2 | 49 | N | ..... | ..... | 1 | ..... | 2 | ..... | NW | ..... | ..... | ..... | ..... | Clear..... | |
| Wabash, Boston, Mass | 30.24‡ | 768.1‡ | ..... | ..... | 45 | 7.2 | 61 | W | 12 | 5.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

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

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Panama, Esquimault, B. C. | | | 30.15† | 765.8† | | | | SW | | | 3 | | 10 | | | | | Variable | Capt. Seabury. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Yokio, N. 34° 00′, E. 137° 11′ | | | | | 42 | 5.6 | | WNW | | | 6 | | | | | Smooth | NNW | Blue sky | Capt. Maury. |
| S. S. Colima, N. 23° 2′, W. 108° 14′ | | | 29.95† | 760.7† | 69 | 20.6 | 85 | NNW | | | 5 | | 0? | | NNW | Mod'ate | NNW | D. clouds | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Granada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Aarnatic, N. 40° 52′, W. 67° 45′ | | | 30.30* | 769.6* | | | | W | | | 4 | | 0 | | | None | | Clear | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, N. 50° 58′, W. 24° 00′ | | | 30.37† | 771.4† | 50 | 10.0 | ?? | SW | | | 4 | | 10ck | | SW | High | WNW | Fair | Capt. W. H. Thompson |
| S. S. Celtic, Mersey River | | | 30.08† | 764.0† | 48 | 8.9 | 85 | NW | | | 5 | | | NW | | | | D. clouds | Capt. B. Gleadell. |
| S. S. Germanic, N. 50° 41′, W. 16° 03′ | | | 30.41† | 772.4† | 54 | 12.2 | 93 | NNW | | | 2 | | 10 | | NNE | | | D. clouds | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. *Aneroid; corrected for elevation; instrumental error not known. †Aneroid.

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

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic | | | | | | | | | | | | | | | | | | | Capt. John Metcalf. |
| S. S. Gaelic, N. 31° 00′, E. 168° 50′ | | | 29.77† | 756.1† | 62 | 16.7 | ?? | W | | | 6 | | lc | | W | Heavy | WNW | D. clouds | Capt. W. H. Kidley |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio, N. 38° 57′, W. 75° 38′ | S44W | | 30.44 | 773.2 | 64.0 | 17.8 | ?? | Calm | | | 0 | | 0 | | | Tranq'l | | Clear | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—CONTINUED.

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

| NAME OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | Character | Direction From— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois, N. 40° 19′, W. 58° 07′ | | | 30.10* | 764.5* | 48 | 8.9 | ?? | NW | | | 6 | | 6 | | NW | Mod'ate | NW | D. clouds | Captain Shackelford. |
| S. S. Indiana, Philadelphia, Pa | | | 30.39† | 771.9† | 60 | 15.6 | 88 | SSE | | | 4 | | 4 | | ESE | | | Cloudy | Captain Sargent. |
| S. S. Ohio, Liverpool | | | 30.04 | 763.0 | 54 | 12.2 | 87 | NW | | | 4 | | 6? | | NW | | | Clear? | Captain Morrison. |
| S. S. Pennsylvania, N. 49° 48′, W. 29° 56′ | | | 30.16 | 766.1 | 52 | 11.1 | 93 | S | | | 3 | | 9 | | S | Light | SW | Cloudy | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid †Aneroid; unreliable, corrected for elevation, instrumental error not known.

## RED STAR LINE MARINE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland, N. 30° 11′, W. 67° 23′ | | | 30.37* | 771.4* | | | | WNW | 8 | 3.6 | | | 0 | | | Smooth | | Clear | Capt. Jackson. Capt. Nichols. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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*Aneroid; regulated to standard at Antwerp.

## ALLAN LINE MARINE SERIES.

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

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

## MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller N. 40° 40′ W. 70° 30′ | | | 30.28 | 769.1 | 45 | 7.2 | 92 | SW | 10 | 4.5 | | | Haze | | | Smooth | | Hazy | Capt. James Jorgensen |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 30.14 | 765.5 | —34 | —36.7 | 87* | Calm | 0 | 0 | | | 10s | | Calm | | | Cloudy | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Determined by use of hair hygrometer.

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

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

Albert J. Myer

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

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 11, 1878.

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

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

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:38 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

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

## ALGERIAN SERIES.

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

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.16 | 766.0 | 62.2 | 16.8 | ..... | NE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Dr. Ollive. |
| Nemours | ..... | ..... | 30.21 | 767.4 | 64.9 | 18.3 | 80 | E | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Michel. |
| Algiers | ..... | ..... | 30.23 | 767.8 | 59.7 | 15.4 | 75 | ENE | ..... | ..... | 6 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair | Towillere. |
| La Calle | ..... | ..... | 30.18 | 766.5 | 57.9 | 14.4 | 82 | NW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Boulangeot. |
| Tunis | ..... | ..... | 30.17 | 766.4 | 65.8 | 18.8 | 54 | NW | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 0.024 | 0.6 | Covered | Jacques. |
| Sfax | ..... | ..... | 30.22 | 767.5 | 75.2 | 24.0 | ..... | SW | ..... | ..... | 5 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Gau. |
| Saida | ..... | ..... | 30.19 | 766.7 | 72.5 | 22.5 | 88 | NNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Herbin. |
| Tebessa | ..... | ..... | 30.35 | 770.9 | ..... | ..... | ..... | NNW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0 | 0 | Covered | Bourgeois. |
| Geriville | ..... | ..... | 30.26 | 768.6 | 60.8 | 16.0 | 85 | SW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Lemaillot. |
| Laghouat | ..... | ..... | 30.15 | 765.8 | 74.1 | 23.4 | 29 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Guyot. |
| Biskra | ..... | ..... | 30.20 | 767.0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

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

## AUSTRIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.66 | 753.4 | 30.22 | 767.5 | 50.7 | 10.4 | 39 | NE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.27 | 743.5 | 30.07 | 763.6 | 38.5 | 3.6 | 60 | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.012 | 0.3 | ..... | Dr. Wierzbiski. |
| Eperies | 29.19 | 741.4 | 30.10 | 764.6 | 36.7 | 2.6 | 62 | S | ..... | ..... | 2 | ..... | 7cs;s | ..... | N | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.91 | 734.3 | 30.19 | 766.9 | 45.0 | 7.2 | 51 | SSW | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.71 | 729.2 | 30.19 | 766.8 | 37.0 | 2.8 | 47 | NNW | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.83 | 732.2 | 30.22 | 767.5 | 39.6 | 4.2 | 84 | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.031 | 0.8 | ..... | Prof. C. Wagner |
| Lemberg | 29.02 | 737.1 | 30.05 | 763.2 | 35.4 | 1.9 | 64 | NW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Dr. T. Stanecki. |
| Pola | 30.08 | 763.9 | 30.19 | 766.8 | 47.7 | 8.7 | 67 | E | ..... | ..... | 2 | ..... | 10s | ..... | ..... | 0.122 | 3.1 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.76 | 755.9 | 30.24 | 768.2 | 38.8 | 3.8 | 57 | SW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.91 | 759.7 | 30.20 | 767.1 | 44.2 | 6.8 | 54 | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Karl Stancel. |
| Trieste | 30.11 | 764.7 | 30.21 | 767.3 | 46.8 | 8.2 | 79 | NW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0.322 | 8.2 | Raining | P. Busin. |
| Vienna | 29.42 | 747.2 | 30.15 | 765.9 | 43.0 | 6.1 | 66 | W | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

## BELGIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.74 | 729.9 | 30.20 | 769.3 | 42.6 | 5.9 | 86 | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.173 | 4.4 | ..... | Prof. M. Passau. |
| Brussels | 30.01 | 762.2 | 30.21 | 767.4 | 50.6 | 10.3 | 74 | WSW | ..... | ..... | 3 | 1 | 9 | NNW | WSW | 0.122 | 3.1 | Solar halo | Royal Observatory. |
| Furnes | 30.23 | 767.7 | 30.25 | 768.3 | 50.9 | 10.5 | 78 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.065 | 1.4 | ..... | M. E. de Cae. |
| Maeseyck | 30.06 | 763.4 | 30.18 | 766.0 | 49.1 | 9.5 | 84 | WSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.189 | 4.8 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

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

## BRITISH SERIES.

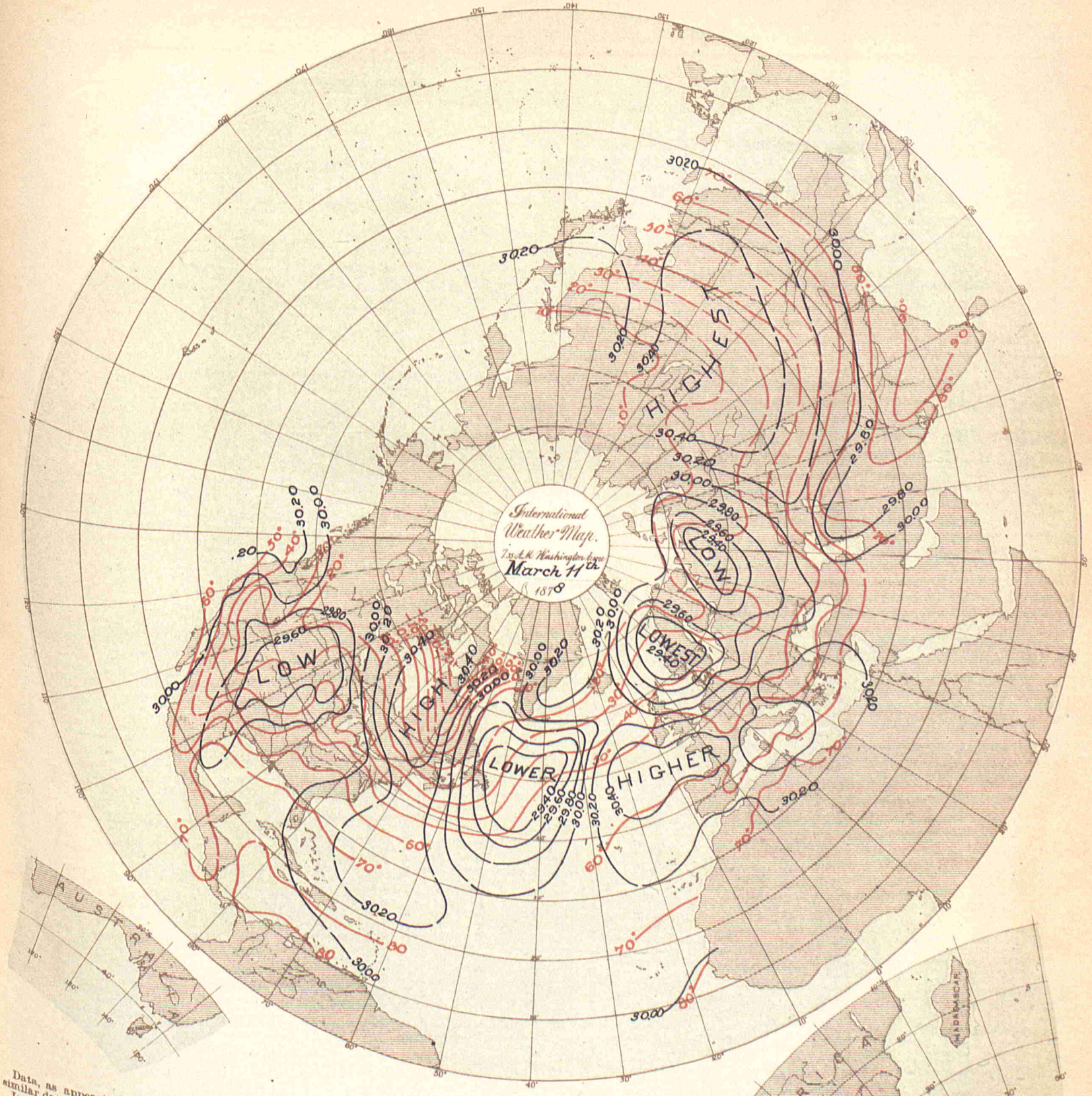
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum't'al error and temperature. Inches. | Barometer. Corrected for instrum't'al error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force (—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.63 | 752.6 | 29.73 | 755.1 | 46.7 | 8.2 | ..... | W | 48 | 21.5 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | Blue sky | W. Boswell. |
| Ardrossan | 29.97 | 761.2 | 29.99 | 761.7 | 49 | 9.4 | ..... | WNW | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.18 | 766.6 | 50.2 | 10.1 | ..... | WSW | 18 | 8.0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | S. Call, for Dr. Robinson. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.15 | 765.8 | 48.3 | 9.1 | ..... | W | 27 | 12.1 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | John Hartnup. |
| Birr Castle, (Parsonstown) | 30.10 | 764.5 | 30.30 | 769.6 | 50.4 | 10.2 | ..... | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | J. Dreyer. |
| Bradford, Yorkshire | 29.68 | 753.9 | 30.08 | 764.0 | 50.9 | 10.5 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.02 | 0.5 | Overcast | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.98 | 761.5 | 30.01 | 762.2 | 82.0 | 27.8 | ..... | NE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 30.10 | 766.8 | 51.0 | 10.6 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | H. Todd. [H. C. |
| Cardington | ..... | ..... | 30.20 | 767.1 | 51.0 | 10.6 | ..... | NW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | John McLaren. |
| Chatham, School M. E | 30.10 | 764 5 | 30.24 | 768.1 | 50.2 | 10 1 | ..... | SW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.90 | 734.0 | 30.41 | 772.4 | 45.0 | 7.2 | ..... | NW | ..... | ..... | 5 | ..... | 7 | ..... | ..... | ..... | ..... | Squally | Alexander Watt. |
| Donaghadee | 30.07 | 763.8 | 30.10 | 764.5 | 49 | 9.4 | ..... | NNW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | D clouds | J. Mac Gowan. |
| Dover | 30.22 | 767.6 | 30.24 | 768.1 | 53 | 11.7 | ..... | WNW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | ⅗ clouded | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 30.14 | 765.5 | 50.7 | 10.4 | ..... | W | 7.8 | 3.5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Thomas Mackereth. |
| Falmouth, Observatory | 30.20 | 767.1 | 30.44 | 773.2 | 51.1 | 10.6 | ..... | WNW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.68 | 703 1 | 29.88 | 758.9 | 83.0 | 28.3 | ..... | NE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.68 | 753.9 | 29.91 | 759.7 | 87.0 | 30.6 | ..... | N | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's College | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.14 | 765.5 | 30.20 | 767.1 | 59.5 | 15.3 | ..... | E | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | Corpl. C. Aitken, A. H. C. |
| Glasgow, Observatory | 29.73 | 755 1 | 29.93 | 760.2 | 45.5 | 7.5 | ..... | WSW | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | Squally | D. G. Maclean. |
| Great Yarmouth | 30.11 | 764.8 | 30.11 | 764.8 | 51 | 10.6 | ..... | W | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | G. T. Watson. |
| Greenwich, Royal Obs'y | 30.06 | 763.5 | 30.24 | 768.1 | 50.0 | 10.0 | ..... | WSW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | The Staff, for G. B. Airy. |
| Guernsey | 30.18 | 766.6 | 30.40 | 772.1 | 52 | 11.1 | ..... | WNW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 30.43 | 772.9 | 52 | 11.1 | ..... | W | ..... | ..... | 4 | ..... | 4c | ..... | ..... | 0 | 0 | Fine | M. P. Moyle. |
| Holyhead | 30.16 | 766.1 | 30.21 | 767.3 | 50 | 10.0 | ..... | WSW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | John Tilston. |
| Jersey | 30.16 | 766.1 | 30.46 | 773.7 | 50.9 | 10.5 | ..... | WSW | ..... | ..... | 5 | ..... | 7 | ..... | ..... | ..... | ..... | Gloomy | J. Fisher. |
| Kew, Observatory | ..... | ..... | 30.25 | 768.3 | 51.6 | 10.9 | ..... | WSW | 13 | 5.8 | ..... | ..... | 10d | ..... | ..... | ..... | ..... | Overcast | The Staff. |
| Kingstown | 30.21 | 767.3 | 30.24 | 768.1 | 52 | 11.1 | ..... | WNW | ..... | ..... | 5 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | George Mitchell. |
| Leicester, Museum | ..... | ..... | 30.18 | 766.6 | 51.3 | 10.7 | ..... | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 30.06 | 763.5 | 30.13 | 765.3 | 62.0 | 16.7 | ..... | SE | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | Sgt. Fred. Travis, A. H. |
| Nairn | 29.70 | 754.4 | 29.79 | 756.7 | 44 | 6.7 | ..... | NW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | ⅘ clouded | W. D. Penny. [O. |
| Nassau, (Bahamas) | ..... | ..... | 30.07 | 763.8 | 74.5 | 23.8 | ..... | SE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.97 | 761.2 | 30.17 | 766.3 | 49.7 | 9.8 | ..... | SW | ..... | ..... | 3 | ..... | 10k;d | ..... | WSW | 0 | 0 | Overcast | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.67 | 753.6 | 30.20 | 767.1 | 49.3 | 9.6 | ..... | W | ..... | ..... | 5–6 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.24 | 768.1 | 52 | 11.1 | ..... | W | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | Mr. Lucas. |
| Plymouth | 30.32 | 770.1 | 30.40 | 772.1 | 52.7 | 11.5 | ..... | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Merrifield. |
| Roche's Point | 30.33 | 770.4 | 30.37 | 771.4 | 49 | 9.4 | ..... | W | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Cloudy | W. Kennedy. |
| Saint Ann's Head | 30.17 | 766.3 | 30.33 | 770.4 | 49 | 9.4 | ..... | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John C. Walker. |
| Sandwick Manse, (Orkneys | ..... | ..... | 29.63 | 752.6 | 36.3 | 2.4 | ..... | WNW | 50 | 22.4 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Showery | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 30.29 | 769.4 | 44.2 | 6.8 | ..... | SW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | Sergt. W. H. Lyne. |
| Sheffield | 29.87 | 758.7 | 30.16 | 766.1 | 50.6 | 10.3 | ..... | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.02 | 0.5 | Overcast | W. F. Cooper. |
| Silloth Rectory | 29.97 | 761.2 | 30.00 | 762.0 | 51.1 | 10.6 | 79 | W | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0.010 | 0.25 | D. clouds | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.72 | 754.9 | 30.12 | 765.0 | 47.0 | 8.3 | ..... | W | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | Misty | Rev. S. J. Perry. |
| Stornoway, Lews C. (Hebr.) | ..... | ..... | 29.77 | 756.1 | 40 | 4.4 | ..... | WNW | ..... | ..... | 7 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | John Smith. |
| Stratfield Turgiss | 30.06 | 763.5 | 30.28 | 769.1 | 52.5 | 11.4 | ..... | W | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Rev. C. H. Griffith, F. M. S |
| Thurso | ..... | ..... | 29.69 | 754.1 | 40 | 4.4 | ..... | WNW | ..... | ..... | 6 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 30.42 | 772.7 | 53 | 11.7 | ..... | NW | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 30.38 | 771.6 | 52.2 | 11.2 | ..... | WSW | 22 | 9.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds | The Staff. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.72 | 754.9 | 71.5 | 21.9 | 83 | E | ..... | ..... | 1 | ..... | 10k | ..... | ..... | 0 | 0 | Cloudy | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.74 | 755.4 | 29.93 | 760.2 | 82.4 | 28.0 | 54 | ENE | 6.0 | 2.7 | ..... | 1 | 7 | ..... | SE | 0 | 0 | Cloudy: fine | C. Meldrum. |
| Melbourne, Observatory | 29.76 | 755.9 | 29.85 | 758.2 | 66.5 | 19.2 | 63 | NNE | 6 | 2.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Fine | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngehause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

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

| MARINE SERIES. VESSELS. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|
| S. S. Algeria | ..... | ..... | ..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | Capt. J. E. Monland. |
| Ship Camperdown | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon, N. 17° 53′, W. 74° 35′ | 5 | E | D. clouds | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | Capt. C. C. Prehn. [R. |
| S. S. Peruvian | ..... | ..... | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire, N. 37° 5′ W. 57° 10′ | 6 | NW | Squally | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.




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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—1. | Clouds. Amount. Low'r 0—1. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | OBSERVER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.20 | 665.5 | | | 67.1 | 19.5 | 86 | E | | | 1 | p | | | | 0 | 0 | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.60 | 751.7 | 29.64 | 752.9 | 44.4 | 6.9 | 80 | WNW | | | 6 | | 6 | | | | | | |
| Faröe | 29.73 | 755.1 | 29.75 | 755.6 | 42.6 | 5.9 | 93 | WSW | | | 4 | | 10 | | | | | | |
| Godthaab, (Greenland) | 29.91 | 759.6 | 29.95 | 760.7 | 17.2 | — 8.2 | 97 | SW | | | 5 | | 10 | | | | | | |
| Stykkisholm, (Iceland) | 30.35 | 770.8 | 30.39 | 771.9 | 17.1 | — 8.3 | 94 | NE | | | 7 | | 5 | | | | | | |
| Thorshavn, (Faröe) | 29.60 | 751.7 | 29.63 | 752.6 | 33.8 | 1.0 | 65 | NW | | | 5 | | 4 | | | | | | Snowing |
| Vestervig | 29.38 | 746.3 | 29.55 | 750.6 | 41.4 | 5.2 | 97 | SW | | | 6 | | 10 | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.77 | 756.1 | 30.32 | 770.1 | 50 | 10 | 82 | W | | | 1 | | 8 | | | 0.031 | 0.8 | Very cloudy | Collignon, Director. |
| Amiens, Normal School | 30.22 | 767.6 | 30.34 | 770.5 | 54.0 | 12.2 | 87 | W | | | 2 | | 5 | | W | 0.150 | 3.8 | Cloudy | Bonvarne, Director. |
| Avignon, Normal School | 30.17 | 766.2 | 30.24 | 768.2 | 59.4 | 15.2 | 36 | NNW | | | 3 | | 0 | | | 0 | 0 | Clear | Mr. Girard, Director |
| Bar-sur-Seine | 29.80 | 756.8 | 30.37 | 771.4 | 52.3 | 11.3 | 60 | N | | | 1 | | 8kn | | N | 0.043 | 1.1 | Very cloudy | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 53.2 | 11.8 | 67 | WNW | | | 2 | | 8 | | WNW | 0 | 0 | Very cloudy | Normal School. |
| Besançon | 29.48 | 748.9 | 30.41 | 772.3 | 46.4 | 8 | 91 | S | | | 3 | | 5 | | S | 0.031 | 0.8 | Cloudy | Normal School. |
| Bourg-en-Bresse | 29.45 | 748.0 | 30.37 | 771.5 | 49.5 | 9.7 | 71 | N | | | 2 | | 5kn | | W | 0.008 | 0.2 | Cloudy | Normal School. |
| Bourges, Normal School | 29.73 | 755.1 | 30.28 | 769.2 | 51.1 | 10.6 | 82 | NE | | | 2 | | 2 | | S | 0 | 0 | Slightly cl'dy | A. Wagner, Director. |
| Brest, Naval Observatory | 30.21 | 767.2 | 30.42 | 772.7 | 55.2 | 12.9 | 72 | WNW | | | 2 | | 7 | | WNW | 0 | 0 | Squally | The Staff. |
| Carcassonne, Normal School | 30.01 | 762.3 | 30.43 | 773.0 | 53.6 | 12 | 80 | W | | | 6 | | 2 | | NW | 0 | 0 | Slightly cl'dy | Vateau, Director. |
| Caen | 30.35 | 770.8 | 30.42 | 772.7 | 51.4 | 10.8 | 82 | W | | | 2 | | 5 | | W | 0.102 | 2.6 | Cloudy | Normal School. |
| Chartres, Normal School | 29.81 | 757.1 | 30.38 | 771.6 | 55.0 | 12.8 | 88 | W | | | 2 | | 7 | | W | 0.16 | 4. | | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 30.00 | 762.0 | 30.32 | 770.2 | 53.2 | 11.8 | 72 | W | | | 2 | | 5ck | | W | 0 | 0 | Cloudy | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 29.02 | 737.2 | 30.41 | 772.3 | 52.7 | 11.5 | 34 | NW | | | 3 | | 8 | | N | 0 | 0 | Very cloudy | Alluard, Director. |
| Commercy, Normal School | 29.44 | 747.6 | 30.35 | 770.8 | 46.0 | 7.8 | 77 | W | | | 2 | | 10 | | W | 0.12 | 3. | Covered | Dr. Goulet, Director. |
| Commune de Gréasque* | 29.06 | 738.2 | 30.21 | 767.2 | 58.5 | 14.7 | 80 | NW | | | 4 | | 2 | | NW | 0 | 0 | ¼ Covered | V. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 30.28 | 769.0 | 30.50 | 774.6 | 54.7 | 12.6 | 63 | N | | | 1 | | 5 | | N | 0 | 0 | Cloudy | Mouillot, Director. |
| Le Mans, Normal School | 30.13 | 765.2 | 30.44 | 773.1 | 50.4 | 10.2 | 76 | W | | | 4 | | 2 | | W | 0.020 | 0.5 | Slightly cl'dy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.40 | 746.7 | 30.34 | 770.5 | 47.5 | 8.6 | 78 | S | | | 2 | | 10 | | N | 0.031 | 0.80 | Raining | Voudez, Director. |
| Lorient, Naval Observatory | 30.42 | 772.6 | 30.52 | 775.1 | 54.3 | 12.4 | 65 | W | | | 3 | | 8 | | NW | 0 | 0 | ¾ covered | T. Carré, Director. |
| Mâcon, Normal School | 29.65 | 753.1 | 30.31 | 769.9 | 50.0 | 10 | 86 | Calm | | | | | 10 | | | 0 | 0 | Covered | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | 29.28 | 743.7 | 30.35 | 770.9 | 47.5 | 8.6 | 78 | NW | | | 1 | | 10 | | SE | 0 | 0 | Covered | Normal School. |
| Niames, Normal School | 30.07 | 763.8 | 30.28 | 769.0 | 53.6 | 14.8 | 80 | N | | | 6 | | 2 | | NW | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Orleans, Normal School | 29.96 | 761.4 | 30.35 | 770.9 | 53.6 | 12 | 61 | W | | | | | 5 | | N | 0 | 0 | Partly cl'dy | Bernard, Director. |
| Paris, Observatory | 30.13 | 765.2 | 30.37 | 771.4 | 52.3 | 11.3 | 70 | W | | | 1 | | 9 | | | 0.039 | 1.01 | Almost cov'd | National Observatory. |
| Privas | 29.24 | 742.6 | 30.32 | 770.0 | 53.6 | 12 | 72 | N | | | 2 | | 1 | | | 0 | 0 | Clear | Normal School |
| Puy de Dome (Summit) | | | | | | | | | | | | | | | | | | | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.47 | 774.0 | 30.50 | 774.8 | 57.9 | 14.4 | 70 | W | | | 2 | | 5 | | W | 0 | 0 | ⅛ covered | Lt. Decante, Director. |
| Rouen, Normal School | 30.30 | 769.6 | 30.39 | 771.8 | 52.0 | 11.1 | 85 | W | | | 3 | | 5 | | NW | 0.035 | 0.9 | Cloudy | F. Lucard, Director. |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | M. H. Hercouet. |
| Tarbes, Normal School | 29.32 | 744.6 | 30.41 | 772.5 | 53.6 | 12 | 43 | ESE | | | 2 | | 10 | | | 0 | 0 | Covered | T. Hugues, Director. |
| Villefranche | 29.58 | 751.4 | 30.31 | 769.8 | 51.1 | 10.6 | 85 | NNW | | | 2 | | 10 | | NE | 0 | 0 | Covered | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.84 | 758.0 | 29.87 | 758.7 | 79.2 | 26.2 | | | | | | | | | | 0 | 0 | | L'Abbé Marchés. |
| Lyons | | | 30.40 | 772.1 | 50.4 | 10.2 | | | | | | | 5 | | | 0 | 0 | | M. Jeys. |
| Marseilles, Observatory | | | 30.15 | 765.8 | 61.0 | 16.1 | 93 | NNW | | | 4–6 | | 1 | | | 0 | 0 | Clear | The Staff. |
| Mont-Louis | 25.07 | 636.8 | 30.39 | 771.8 | 38.8 | 3.8 | 39 | N | 18.6 | 8.33 | | | 0 | | | 0.020 | 0.5 | | Mr. Falguère. |
| Nice | 30.03 | 762.7 | 30.11 | 764.7 | 60.1 | 15.6 | 61 | S | | | 3 | | 1 | | W | 0 | 0 | Clear | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 30.08 | 764.0 | 30.35 | 771.0 | 52.9 | 11.6 | 72 | W | | | 3 | | 8 | | NW | 0.043 | 1.1 | | Marié Davy, Director. |
| Perpignan | | | 30.35 | 771.0 | 59.0 | 15 0 | 41 | N | 29.8 | 13.33 | | | 0 | | | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.89 | 576.3 | | | 31.1 | — 0.6 | | N | | | 1 | | 0 | | | 0.071 | 1.8 | Clear | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 30.20 | 767.1 | 30.36 | 771.3 | 54.1 | 12.3 | 66 | WNW | | | 1 | | 8 | N | WNW;NW | 0 | 0 | | E. Renou. |
| Toulouse, Observatory | 29.78 | 756.3 | 30.51 | 774.9 | 50.2 | 10.1 | 63 | NW | | | 4 | | 9 | | | 0 | 0 | | The Staff. |
| Tours | 30.24 | 768.1 | 30.44 | 773.1 | 54.7 | 12.6 | 57 | WNW | | | 3 | | 5 | | W | 0.020 | 0.5 | | C. Marquet. |
| Versailles, (near Paris) | | | 30.35 | 771.0 | 53.2 | 11.8 | 69 | NW | | | 3 | | 10 | | | 0.022 | 0.55 | Lightly cov'd | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.34 | 770.6 | 30.37 | 771.3 | 47.3 | 8.5 | 92 | ENE | 3.6 | 1.6 | | 7ck | | W | | 0 | 0 | Very cloudy | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 29.73 | 755.1 | 29.90 | 759.4 | 44.6 | 7.0 | 86 | W | | | 2 | | 10 | | | 0.060 | 1.52 | Raining | Prof. Arndt. |
| Breslau | 29.47 | 748.4 | 30.00 | 761.9 | 38.8 | 3.8 | 79 | WSW | | | 2 | | 10 | | | | | Raining | Royal University Obs'y |
| Carlsruhe | 29.81 | 757.2 | 30.25 | 768.3 | 48.2 | 9.0 | 76 | SW | | | 4 | | 9 | | | 0 | 0 | | Albert Sens. |
| Cassel | 29.49 | 749.0 | 30.10 | 764.5 | 46.8 | 8.2 | 72 | W | | | 4 | | 10 | W | | 0.041 | 1.04 | | Dr. H. Möhl. |
| Crefeld | 29.97 | 761.3 | 30.13 | 765.4 | 50.5 | 10.3 | 75 | W | | | 3 | | 9 | | | 0.12 | 3. | | Director Lose. |
| Emden | 29.98 | 761.5 | 30.02 | 762.4 | 46.6 | 8.1 | 86 | W | | | 1 | | 10 | | | 0 | 0 | | Prof. Prestel. |
| Frankfort on the Main | 29.86 | 758.5 | 30.23 | 767.9 | 50.4 | 10.2 | 61 | SW | | | 1 | | 9 | | | 0.067 | 1.7 | | Physical Society. |
| Friedrichshafen | 28.86 | 733.1 | 30.35 | 770.8 | 41.9 | 5.6 | 85 | W | | | 4 | | 10 | W | | 0.268 | 6.8 | | M. Wilhelm. |
| Hamburg | 29.84 | 758.0 | 29.91 | 759.8 | 45.9 | 7.7 | 85 | W | | | 5 | | 10 | | | 0.059 | 1.5 | Raining | Captain F. Hegemann. |
| Kiel | 29.80 | 756.9 | 29.82 | 757.3 | 44.4 | 6.9 | 81 | W | | | 5 | | 10 | | | 0.112 | 2.84 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.58 | 751.3 | 29.66 | 753.4 | 32.9 | 0.5 | 90 | SW | | | | | | | | 0.045 | 1.15 | Snowing | Prof. E. Luther. |
| Köslin | | | 29.74 | 755.3 | 36.1 | 2.3 | | SW | | | 4 | | 5 | | | 0.720 | 18.3 | | H. Müller. |
| Leipsic, Observatory | 29.63 | 752.6 | 30.06 | 763.5 | 44.8 | 7.1 | 77 | SW | | | 5 | | 10 | WSW | | | | Rainy | Prof. Bruhns. |
| Memel, Naval School | 29.70 | 754.4 | 29.75 | 755.6 | 32.9 | 0.5 | 92 | SSW | | | 2 | | 10n | | | | | Snowing | Reinbrech von Skalweit. |
| Neufahrwasser | 29.71 | 754.7 | 29.73 | 755.1 | 35.4 | 1.9 | 88 | SW | | | 4 | | 10 | | | 0.028 | 0.7 | | A. Lothes. |
| Posen | 29.63 | 752.6 | 29.93 | 760.2 | 37.0 | 2.8 | 55 | W | | | 5 | | 10 | | | 0.052 | 1.32 | Covered | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.76 | 755.8 | 30.32 | 770.1 | 48.9 | 9.4 | 75 | SW | | | 3 | | 9 | W | | 0.088 | 2.24 | | Dr. Schur. |
| Stuttgart | 29.28 | 743.8 | 30.25 | 768.3 | 45.9 | 7.7 | 79 | W | | | 5 | | 8 | W | | 0.488 | 12.4 | | Prof. Schoder. |
| Treves, (Trier) | 29.63 | 752.7 | 30.16 | 766.0 | 48.7 | 9.3 | 67 | W | | | 5 | | 10 | | | 0.089 | 2.25 | Foggy | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.70 | 728.9 | 30.25 | 768.4 | 40.3 | 4.6 | 84 | W | 9 | 4 | | | 10 | | WSW | 0.031 | 0.8 | Covered | Dr. Von Bebber. |
| Wustrow, Naval School | 29.81 | 757.2 | 29.85 | 758.2 | 41.2 | 5.1 | 90 | W | | | 4 | | 10 | | | 0.089 | 2.26 | Foggy | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.91 | 759.8 | 30.31 | 769.9 | 54.0 | 12.2 | | SW | | | 1.5 | | | | | | | Clear | Dr. J. F. J. Schmidt. |

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

## INDIAN SERIES.

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

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.86 | 758.5 | 29.92 | 759.8 | 78.2 | 25.7 | 72 | SW | 25.0? | 11.2? | | 2 | | | 0 | 0 | D. clouds |
| Deesa | 29.46 | 748.2 | 29.92 | 760.0 | 95.3 | 35.2 | 26 | Calm | | | | 0 | | | 0 | 0 | Blue sky. |
| Bombay | 29.82 | 757.3 | 29.85 | 758.3 | 80.3 | 26.8 | 74 | NW | 21.0 | 9.4 | | 2 | ENE | NNE | 0 | 0 | D. clouds |
| Poona | 27.82 | 706.6 | 29.77 | 756.1 | 92.7 | 33.7 | 32 | E | | | | 7 | | SE | 0 | 0 | Dust-whirl. |
| Lahore | 29.20 | 741.6 | 29.95 | 760.7 | 74.8 | 23.8 | 40 | N | 1.7 | 0.8 | | 10 | | | 0 | 0 | Cloudy |
| Belgaum | 27.36 | 694.9 | 29.85 | 758.1 | 86.7 | 30.4 | 56 | W | 15.0 | 6.7 | | 1 | | E | 0 | 0 | D. clouds |
| Bangalore | | | | | | | | | | | | | | | | | |
| Roorkee | 29.02 | 737.1 | 29.93 | 760.2 | 75.8 | 24.3 | 41 | Calm | 1.4 | 0.6 | | 5 | | | 0 | 0 | |
| Agra | 29.36 | 745.7 | 29.92 | 759.9 | 85.7 | 29.8 | 28 | W | | | | | | | 0 | 0 | |
| Trichinopoly | | | | | | | | | | | | | | | | | |
| Nagpur | 28.87 | 733.3 | 29.90 | 759.3 | 90.5 | 32.5 | 26 | NE | 3.2 | 1.4 | | | | | 0 | 0 | Blue sky |
| Madras | | | | | | | | | | | | | | | | | |
| Lucknow | 29.53 | 750.0 | 29.90 | 759.5 | 84.3 | 29.1 | 52 | NW | 1.1 | 0.5 | | 2 | SE | | 0 | 0 | D. clouds |
| Allahabad | 29.58 | 751.3 | 29.89 | 759.2 | 88.9 | 28.8 | 30 | Calm | 0.8 | 0.4 | | 2 | | | 0 | 0 | D. clouds |
| Patna | 29.72 | 754.9 | 29.90 | 759.5 | 82.3 | 27.9 | 31 | W | 0.9 | 0.4 | | 2 | W | W | 0 | 0 | Blue sky |
| Hazaribagh | 27.91 | 709.0 | 29.92 | 759.9 | 81.6 | 27.6 | 12 | NW | 6.6 | 3.0 | | 0 | | | 0 | 0 | Blue sky |
| Cuttack | 29.85 | 758.2 | 29.93 | 760.3 | 86.1 | 30.1 | 61 | S | 1.8 | 0.8 | | 0 | | | 0 | 0 | Misty |
| Calcutta (Alipore) | 29.91 | 759.8 | 29.93 | 760.3 | 81.5 | 27.5 | 44 | NW | 2.0 | 0.9 | | 0 | | | 0 | 0 | Blue sky |
| Goalpara | 29.58 | 751.2 | 29.98 | 761.4 | 69.8 | 21.0 | 75 | E | 6.0 | 2.7 | | 3 | | W | 0.13 | 3.3 | D. clouds |
| Chittagong | 29.89 | 759.2 | 29.98 | 761.6 | 79.3 | 26.3 | 82 | WSW | 5.4 | 2.4 | | 0 | | | 0 | 0 | Blue sky |
| Sibsagar | 29.73 | 755.2 | 30.08 | 764.1 | 65.9 | 18.8 | 73 | ENE | 3.6 | 1.6 | | 3 | | | 0 | 0 | Blue sky |
| Rangoon | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.56 | 725.4 | 29.92 | 759.8 | 85.0 | 29.4 | 25 | NW | 1.8 | 0.8 | | | | | 0 | 0 | Blue sky |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,969 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.76 | 755.8 | 30.18 | 766.5 | 50.9 | 10.5 | 47 | NW | 1.3 | 0.6 | | | 2 | | | 0 | 0 | | Prof. Giovanni Codig. |
| Padua | 30.09 | 764.2 | 30.20 | 767.1 | 48 9 | 9.4 | 65 | ESE | 9.8 | 4.4 | | | 7 | NE | | 0 | 0 | | Prof. Dott. Lorenzioni |
| Vicenza | 30.00 | 761.9 | 30.19 | 766.9 | 49.3 | 9.6 | 55 | ESE | 2.5 | 1.1 | | | 2 | | | 0 | 0 | | Conte Alm. Da Schio. |
| Bergamo | 28.84 | 732.6 | 30.19 | 766.7 | 52.2 | 11.2 | 41 | SW | | | 2 | | 0 | | | 0 | 0 | | Prof. Trionfini Carlo. |
| Milan | 29.68 | 753.9 | 30.21 | 767.4 | 51.1 | 10.6 | | S | | | 1 | | 0 | | | 0 | 0 | | Prof. Schiaparelli. |
| Moncalieri | 29.26 | 743.3 | 30.19 | 766.8 | 53.2 | 11.8 | 40 | ESE | 2.5 | 1.1 | | | 1 | | | 0 | 0 | | Prof. P. F. Denza. |
| Mondovi | 28.24 | 717 8 | 30.19 | 766.8 | 49.3 | 9.6 | 29 | NW | | | 4 | | 0 | | | 0 | 0 | | Prof. D. C. Bruno. |
| Porto Maurizio | 29.94 | 760.5 | 30.17 | 766.3 | 57.9 | 14.4 | 48 | SSW | | | 4 | | 2 | | | 0 | 0 | | Prof. L. Vassallo. |
| Genoa | 29.94 | 760.5 | 30.11 | 764.9 | 59.0 | 15.0 | 26 | N | 8.1 | 3.6 | | | 0 | | | 0 | 0 | | Prof. G. M. Garibaldi. |
| Parma | 29.92 | 759.9 | 30.24 | 768.1 | 51.4 | 10.8 | 56 | SSE | | | 6 | | 3 | | | 0 | 0 | | Prof. P. Pigorini. |
| Florence | 29.85 | 758.2 | 30.11 | 764.9 | 49.1 | 9.5 | 58 | NE | | | 4 | | 10 | NE | | 0.260 | 6.6 | | Cav. F. Meucci. |
| Leghorn | 30.00 | 762.1 | 30.09 | 764.3 | 54.0 | 12.2 | 69 | SE | 15.4 | 6.9 | | | 4 | | | 0.630 | 16.0 | | Prof. P. Monte. |
| Pesaro | 30.11 | 764.8 | 30.16 | 766.1 | 47.3 | 8.5 | 96 | SSW | 3.1 | 1.4 | | | 10 | E | | 0.528 | 13.4 | | Prof. Luigi Guidi. |
| Urbino | 28.55 | 725.1 | 30.15 | 765.9 | 40.6 | 4.8 | 98 | NE | | | 1 | | 10 | | | 0.976 | 24.8 | | Prof. P. Serpieri. |
| Grosseto | 29.93 | 760.3 | 30.05 | 763.2 | 47.5 | 8.6 | 90 | ENE | | | 4 | | 6 | SE | | 0.094 | 2.4 | | Avv. P. Ponticelli. |
| Rome | 29.88 | 758.9 | 30.06 | 763.5 | 56.1 | 13.4 | 82 | S | 0.7 | 0.3 | | | 10 | | | 0.201 | 5.1 | | Prof. P. G. S. Ferrari. |
| Naples, O. U. | 29.68 | 759.0 | 30.09 | 764.2 | 57.2 | 14.0 | 76 | SSE | | | 6 | | 10 | SSW | | 0.949 | 24.1 | | Prof. L. Palmieri. |
| Lecce | | | | | 56.7 | 13.7 | 68 | WSW | 21.7 | 9.7 | | | 10 | WSW | | 0 | 0 | | Prof. C. De Giorgi. |
| Cagliari | 29.87 | 758.8 | 30.07 | 763.8 | 59.0 | 15.0 | 66 | NW | | | 2 | | 9 | W | | 0 | 0 | | Prof. A. Pacinotti. |
| Cosenza | 29.24 | 742.6 | 30.14 | 765.6 | 58.6 | 14.8 | 70 | SE | 3.8 | 1.7 | | | 8 | | | 0 | 0 | | Prof. F. D. Conti. |
| Palermo | 29.78 | 756.3 | 30.01 | 762 9 | 63.0 | 17.2 | 57 | WSW | 29.8 | 13.3 | | | 9 | | | 0 | 0 | | Prof. G. Cacciatore. |
| Syracuse | 30.07 | 763.8 | 30.15 | 765.7 | 58.6 | 14.8 | 78 | SE | | | 2 | | 10 | SW | | 0.114 | 2.9 | | Prof. V. Giuliano. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.55 | 750.6 | 30.11 | 764.7 | 53.2 | 11.8 | 82 | WNW | 6.2 | 2.8 | | | 10 | W | | 1.508 | 38.3 | | Prof. F. Brioschi |

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

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 30 27 | 768.8 | 30.29 | 769.3 | 41.3 | 5.2 | 91 | S | 4.0 | 1.8 | | | 0 | | | 0 | 0 | Clear | The Observatory. |
| Tokei (Yeddo) University | 30.17 | 766.3 | 30.27 | 768.9 | 45.3 | 7.4 | 84 | SSE | 6 | 2.7 | | | | | | 0 | 0 | Hazy | Prof. P. V. Veeder. |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | | | | | | | | | | | | | | | | | | | I. N. Marin, M. D. |
| Córdoba | | | | | | | | | | | | | | | | | | | C. Peña, M. D. |
| Cuernavaca | 25.04 | 635.9 | 29.82 | 757.4 | 59.9 | 15.5 | 39 | N | 5.1 | 2.3 | | 0? | 0? | | | 0 | 0 | Very cloudy? | L. Castillo, A. E. |
| Guadalajara | 25.02 | 635.6 | 30.12 | 765.0 | 37.6 | 3.2 | 49 | W | 0.9 | 0.4 | | | | | | 0 | 0 | Blue sky | Prof. L. Perez. |
| Guanajuato | 23.64 | 600.5 | 29.89 | 759.2 | 56.3 | 13.5 | 63 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Very clear | Prof. V. Fernandes |
| Leon | | | | | 53.6 | 12.0 | 36 | NNW | 1.8 | 0.8 | | 0 | 0 | | | 0 | 0 | Very clear | Prof. M. Leal. |
| Mexico | 23.04 | 585.1 | 30.12 | 765.1 | 50.5 | 10.3 | 34 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | Central Observatory. |
| Orizaba | | | | | | | | | | | | | | | | | | | N. N. |
| Orizaba | | | | | | | | | | | | | | | | | | | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | | | | | 44 4 | 6.9 | 35 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Fair | M. V. de Leon, M. E. |
| Puebla | | | | | | | | | | | | | | | | | | | Prof. B. Gonzalez. |
| Toluca | | | | | | | | | | | | | | | | | | | Prof. C. Velasquez. |
| Tlacotalpam | 29.81 | 757.0 | 29.82 | 757.3 | 69.8 | 21.0 | 90 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Dry fog | Prof. F. R. Bayly. |
| San Luis Potosi | | | | | | | | | | | | | | | | | | | G. Barroeta, M. D. |
| Vera-Cruz | 29.84 | 757.9 | 29.87 | 758.6 | 71.6 | 22.0 | 82 | WNW | 0.7 | 0.3 | | 0 | 10sk | | | 0 | 0 | Covered | Prof. J. Rossell. |
| Zacatecas | | | | | 49.6 | 9.8 | 47 | NW | 1.8 | 0.8 | | 0 | 0 | | | 0 | 0 | Clear | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.33 | 592.6 | 30.10 | 764.7 | 42.8 | 6.0 | 45 | E | 0.7 | 0.3 | | 0 | 0 | | | 0 | 0 | Very clear | P. Spina. [M. M. D. D. |
| Morelia | | | | | | | | | | | | | | | | | | | M. Tena, F. L. Parram |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,660 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known The data are published as given.

## NETHERLANDS' SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.21 | 767.3 | 30.21 | 767.3 | 49.3 | 9.6 | | W | | | 4 | | | | | 0.012 | 0.3 | | |
| Groningen | 29.94 | 760 5 | 30.00 | 761.9 | 47.3 | 8.5 | | NW | | | 5 | | | | | 0.004 | 0.1 | | |
| Helder | 30.04 | 762.9 | 30.04 | 762 9 | 46.4 | 8.0 | | WSW | | | 6 | | | | | 0.020 | 0.5 | | |
| Hellevoetsluis | 30.15 | 765.9 | 30.15 | 765.9 | 47.8 | 8.8 | 83 | W | | | 4 | | | | | | | | |
| Utrecht | 30.08 | 764.1 | 30.13 | 765.3 | 52.7 | 11.3 | 62 | W | | | 4 | | 5 | | | 0.055 | 1.3 | Cloudy | H. v d Brink. |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give and humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper the lower clouds.

## NORWEGIAN SERIES.

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

| STATIONS | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.30 | 744.2 | 29.35 | 745.6 | 34.2 | 1.2 | 100 | S | 14.8 | 6.6 | ..... | ..... | 10 | ..... | ..... | 0.339 | 8.6 | Rain & snow | |
| Bröno | 29.22 | 742.1 | 29.26 | 743.1 | 36.3 | 2.4 | 57 | ESE | 7 | 3 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.23 | 742.5 | 29.38 | 746.3 | 37.2 | 2.9 | 80 | SSW | 0 | 0 | ..... | ..... | 6 | ..... | ..... | 0.209 | 5.3 | ..... | |
| Tromsö | 29.41 | 747.0 | 29.45 | 748.1 | 21.6 | — 5.8 | 74 | E | 5 | 2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |

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

## PORTUGUESE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.07 | 763.6 | 30.26 | 768.5 | 58.3 | 14.6 | 87 | SSE | 3.1 | 1.4 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.23 | 742.5 | 30.25 | 768.4 | 64.0 | 17.8 | 33 | ENE | 21.7 | 9.7 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.16 | 766.0 | 30.24 | 768.2 | 65.3 | 18.5 | 55 | SW | 8.1 | 3.6 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.87 | 758.8 | 30.23 | 767.9 | 63.7 | 17.6 | 32 | NE | 19.9 | 8.9 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.24 | 768.1 | 30.33 | 770.3 | 62.6 | 17.0 | 72 | SSE | 19.9 | 8.9 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |

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

| Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell: Height scale 0-9 | Sea or swell: Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd't. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd t. |
| Mindello | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Mozambique, Mozambique | 29.72 | 755.0 | 29.78 | 755.2 | 85.6 | 29.8 | ..... | S | ..... | ..... | 3 | ..... | 3 | ..... | S | 1 | ..... | Blue sky |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Sado, N. 11° 49', W. 16° 24' | 29.96* | 761.0* | 29.97* | 761.3* | 82.4 | 28.0 | ..... | WSW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 1 | WSW | Blue sky |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.80 | 756.9 | 29.80 | 757.0 | 84.2 | 29.0 | ..... | W | ..... | ..... | 3 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

| Naval Series. Vessels. | Observer |
|---|---|
| Bartholomew Dias | R. A. T. Pinha, Com'd't. |
| D. Fernando | A. M. de Sande, Com'd't. |
| India | A. D. Pedroso, Com'd t. |
| Mindello | |
| Mozambique, Mozambique | J. F. R. R. Bastos, Com'd't. A. J. de Mattos, Com'd't. |
| Quanza | |
| Sado, N. 11° 49', W. 16° 24' | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | F. Texeira da Silva, Com'd't. |
| Tejo | F. J. Ferreira, dos Amas, Com' |

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.49 | 749.0 | 29.93 | 760.2 | 36.0 | 2.2 | 66 | SW | 18 | 8 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Light snow | Astronomical Obs. |
| Wilna | 29.43 | 747.5 | 29.87 | 758.6 | 30.9 | — 0.6 | 58 | WSW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 29.48 | 748.7 | 29.73 | 755.2 | 23.5 | — 4.7 | 75 | WSW | 4 | 2 | ..... | ..... | 4c | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.56 | 750.9 | 29.58 | 751.3 | 27.0 | — 2.8 | 62 | NW | 16 | 7 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Knopio | 29.31 | 744.4 | 29.65 | 753.1 | 19.4 | — 7.0 | 94 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Ch. Forsten. |
| Kief | 29.28 | 743.6 | 29.94 | 760.5 | 30.4 | — 0.9 | 56 | NW | 13 | 6 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 30.07 | 763.6 | 30.13 | 765.4 | 40.1 | 4.5 | 57 | WSW | 9 | 4 | ..... | ..... | 6kn | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.97 | 761.1 | 29.98 | 761.6 | 42.8 | 6.0 | 66 | W | 4 | 2 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.06 | 738.2 | 29.63 | 752.7 | 26.8 | — 2.9 | 78 | SSW | 9 | 4 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | Light snow | Meteorological Obs. |
| Lugan | 29.74 | 755.4 | 29.95 | 760.8 | 32.0 | 0.0 | 74 | W | 13 | 6 | ..... | ..... | 5n | ..... | ..... | ..... | ..... | Heavy clouds | Meteorological Obs. |
| Archangel | 29.44 | 747 8 | 29.46 | 748.3 | 30.6 | — 0.8 | 92 | NNE | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.58 | 726.0 | 30.04 | 762.9 | 42.8 | 6.0 | 43 | NW | 45 | 20 | ..... | ..... | 8cs | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.13 | 765.2 | 30.01 | 763.1 | 37.6 | 3.1 | 74 | NW | 4 | 2 | ..... | ..... | 10n | ..... | ..... | Blank | Blank | ..... | Sebastianof. |
| Kasan | 29.47 | 748.6 | 29.75 | 755.7 | 31.6 | — 0.2 | 92 | SSE | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.97 | 735.7 | 29.96 | 760.9 | 26.4 | — 3.1 | 85 | SE | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.58 | 751.4 | 29.81 | 757.2 | 74.3 | 23.5 | 70 | SSE | 7 | 3 | ..... | ..... | 2ks | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.40 | 721.4 | 30.08 | 764.0 | 63.6 | 17.5 | 43 | NW | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.80 | 756.8 | 30.35 | 771.0 | 27.0 | — 2.8 | 70 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 30.23 | 767.8 | 30.57 | 776.5 | 26.1 | — 3.3 | 82 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Krotkowo* | 29.32 | 744.8 | 29.81 | 757.2 | 30.2 | — 1.0 | 82 | W | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light snow | Cand. Fatjanow. |
| Peking, (China) | 30.36 | 771.2 | 30.50 | 774.8 | 42.6 | 5.9 | 17 | N | 18 | 8 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 28.03 | 711.9 | 30.26 | 768.5 | 11.7 | —11.3 | 60 | NW | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 2.3 | —16.5 | 75 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47', E. 48° 34'.

## SPANISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 30.19 | 766.8 | 30.29 | 769.4 | 64.0 | 17.8 | 66 | SSE | 4.7 | 2.11 | ..... | ..... | 1ks | ..... | ..... | 0 | 0 | Misty | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.48 | 774.1 | 30.54 | 775.6 | 56.1 | 13.4 | 71 | NW | 2.1 | 0.92 | ..... | 3 | 4 | NW | ..... | 0.118 | 3.0 | Cloudy | Prof. Manuel de Naveran. |
| Burgos, Met. Obs'y | 27.43 | 696.8 | ..... | ..... | 46.4 | 8.0 | 82 | NE | 9.9 | 4.42 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 28.05 | 712.5 | 30.29 | 769.4 | 60.3 | 15.7 | 31 | NE | 20.9 | 9.34 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |
| Murcia, Met. Obs'y | 30.17 | 766.2 | 30.32 | 770.1 | 60.1 | 15.6 | 76 | NE | 4.4 | 1.97 | ..... | 5 | 5 | WSW | ..... | 0 | 0 | Covered | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.44 | 747.7 | 30.33 | 770.4 | 62.8 | 17.1 | 42 | NE | 20.5 | 9.17 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.92 | 760.0 | 29.99 | 761.6 | 72.9 | 22.7 | 90 | ESE | 10.1 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J. |
| San Fernando, Naval Obs'y | 30.09 | 764.4 | 30.19 | 766.9 | 64.4 | 18.0 | 61 | ESE | 20.8 | 13.3 | ..... | 0 | 9 | ..... | E | 0 | 0 | Clear | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.97 | 761.1 | 30.06 | 763.4 | 78.1 | 25.6 | 83 | E | 0 | 0 | ..... | 2c | 1k | E | E | 0 | 0 | ..... | Leonardo de Tejeda, Chief of Engineers. |

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

## SWEDISH SERIES.

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

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.63 | 752.6 | 29.67 | 753.6 | 17.6 | — 8.0 | ..... | SE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.47 | 748.5 | 29.52 | 749.8 | 27.3 | — 2.6 | 92 | S | ..... | ..... | 7 | ..... | 4 | ..... | ..... | ..... | ..... | Snowing | |
| Hernosand | 29.34 | 745.2 | 29.39 | 746.5 | 32.0 | 0.0 | 90 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.26 | 743.1 | 29.43 | 747.6 | 34.9 | 1.6 | 89 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.47 | 748.4 | 29.52 | 749.9 | 34.5 | 1.4 | 89 | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.37 | 745.9 | 29.44 | 747.8 | 33.4 | 0.8 | 87 | S | 10.3 | 4.6 | ..... | ..... | 10 | ..... | ..... | 0.056 | 1.41 | Snowing | Dr. Hildebrandsson. |

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

## SWISS SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.88 | 733.6 | 30.33 | 770.4 | 48.9 | 8.3 | 63 | NE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | 0.012 | 0.3 | Cloudy. | The Observatory. |
| Zurich | 28.67 | 728.1 | 30.35 | 770.9 | 40.6 | 4.8 | 80 | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.197 | 5.0 | Raining | The Observatory. |
| ..... | | | | | | | | | | | | | | | | | | | |
| ..... | | | | | | | | | | | | | | | | | | | |
| ..... | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +8.7 mm.; Thermometer, +1.2 cent.; Relative Humidity, —9 per cent.

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

## TURKISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.34 | 770.5 | 44.6 | 7.0 | 66 | SW | 9 | 4.0 | ..... | ..... | 6 | ..... | W | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanides. |
| Valona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. Bertrand. |
| Varna | ..... | ..... | 30.21 | 767.2 | 57.7 | 14.3 | ..... | W | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | Imperial Observatory. |
| Beirut, (Syria,) Lee Obs'y | 30.02 | 762.5 | 30.13 | 765.4 | 61.2 | 16.2 | 62 | WSW | ..... | ..... | 1 | ..... | 8n | ..... | W | 0.10 | 2.5 | Raining | Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.80 | 756 9 | 30.12 | 765.0 | 30 | — 1.1 | ..... | NE | 13 | 5.8 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | W. R. Bigg. |
| *Chatham, N B | 30.20 | 767.1 | 30.27 | 768.8 | 13 | —10.6 | 87 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | G. A. Blair. |
| Charlottetown, P. E. Island | 30.13 | 765.3 | 30.18 | 766.6 | 14 | —10.4 | 78 | N | 20 | 8.9 | ..... | ..... | s | ..... | Calm | 0 | 0 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 30.05 | 763.3 | 30.25 | 768.3 | 25.7 | — 3.5 | 96 | E | ..... | ..... | 4 | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | James Smith, M. A |
| Dalhousie, N. B | 30.31 | 769.9 | 30.35 | 770.9 | 8.2 | —13.2 | 96 | W | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | Bright | H. A. Johnson. |
| Esquimault, B. C | 30.07 | 763.8 | 30.11 | 764.8 | 35.1 | 1.7 | 100 | N | ..... | ..... | ..... | 2cs | 0 | ..... | ..... | 0 | 0 | Frosty | W. H. Bevis. |
| *Father Point, Quebec | 30.47 | 773.9 | 30.49 | 774.4 | 9 | —12.8 | 78 | N | 16 | 7.2 | ..... | 2ck | 0 | N | ..... | 0 | 0 | Clear | J. McWilliams. |
| Fredericton, N. B | 30.28 | 769.1 | 30.36 | 770.9 | 18.0 | — 7.8 | 52 | NW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. Harrison. |
| *Fort Garry Manitoba | 28.95 | 735.3 | 29.79 | 756.7 | 32 | 0 0 | 100 | E | 9 | 4.0 | ..... | 5k | 8n | E | E | 0.520 | 13.21 | Heavy rain | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| *Halifax, N. S | 28.90 | 734.0 | 30.03 | 762.7 | 38 | 3.3 | 91 | E | ..... | ..... | 1 | 2cs | 0 | ..... | ..... | 0.10 | 2.5 | Clear | James Grant. |
| Hamilton, Ontario | 29.99 | 761.7 | 30.13 | 765.3 | 22 | — 5.6 | 82 | NW | 18 | 8.0 | ..... | 0 | 2ks | ..... | NW | 0 | 0 | Fair | F. Allison, M. A. |
| Heart's Content, N. F | 29.72 | 754.9 | 30.10 | 764.6 | 37.7 | 3.2 | 90 | NE | ..... | ..... | 2 | 10cs | 0 | ..... | ..... | 0 | 0 | Cloudy | Geo. Dickson, M. A. |
| *Kingston, Ontario | 29.31 | 744.5 | 29.33 | 745.0 | 28 | — 2.2 | 88 | N | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0.02 | 0.5 | Overcast | E. Weedon. |
| Little Glace Bay, N. S | 29.79 | 756.7 | 30.14 | 765.5 | 35 | 1.7 | 90 | NE | 9 | 4.0 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | S. Woods, M. A. |
| *Montreal, Quebec | 29.89 | 759.2 | 29.93 | 760.2 | 17 | — 8.3 | ..... | N | 12 | 5.4 | ..... | 8k | 0 | N | ..... | 0.05 | 1.3 | Cloudy | C. H. Rigby. |
| *Parry Sound, Ontario | 30.15 | 765.8 | 30.36 | 771.1 | 23 | — 5.0 | 71 | NE | 18 | 8.0 | ..... | ..... | 10s | ..... | ..... | Inap. | Inap. | Cloudy | C. H. McLeod, C. E. |
| Peterboro, Ontario | 29.41 | 747.0 | 30.12 | 765.0 | 38 | 3.3 | 80 | E | 7 | 3.1 | ..... | 2k | 8n | SE | SE | 0 | 0 | Cloudy | Rev. R. Mosley. |
| Port Dover, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. Jeffers, B. A. |
| Port Hastings, N. S | 29.38 | 746.2 | 30.09 | 764.3 | 38 | 3.3 | 91 | NE | 13 | 5.8 | ..... | 10ck | 0 | SW | ..... | 0.07 | 1.8 | Fair | H. Morgan. |
| Port Stanley, Ontario | 30.05 | 763.3 | 30.10 | 764.6 | 16.9 | — 8.4 | ..... | NW | 17 | 7.6 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| *Quebec, Quebec | 29.36 | 745.7 | 30.02 | 762.5 | 40 | 4.4 | 93 | NE | 7 | 3.1 | ..... | ..... | 10m | ..... | SE | 0.08 | 2.0 | Cloudy | M. Payne. |
| *Rockliffe, Ontario | 30.10 | 764.5 | 30.44 | 773.2 | 19 | — 7.2 | 69 | NE | ..... | ..... | 5 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Capt. Ashe, R. N. |
| St. Andrews, N. B | 29.76 | 755.9 | 30.23 | 767.8 | 33 | 0.6 | 42 | SE | 10 | 4.5 | ..... | ..... | 8s | ..... | SE | 0 | 0 | Cloudy | W. H. McIntyre. |
| St. John, N. B | 30.26 | 768.6 | 30.31 | 769.9 | 21 | — 6.1 | 57 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Dr. Gove. |
| *Saugeen, Ontario | 30.12 | 765.0 | 30.29 | 769.4 | 20 | — 6.7 | 85 | NW | 14 | 6.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | G. Murdock, C. E. |
| Stayner, Ontario | 29.29 | 744.0 | 30.02 | 762.5 | 41 | 5.0 | 95 | SE | 5 | 2.2 | ..... | ..... | 10s | ..... | ..... | 0.15 | 3.8 | Light rain | K. Stewart. |
| Stratford, Ontario | 29.31 | 744.5 | 30.11 | 764.8 | 36 | 2.2 | 91 | SE | 3 | 1.3 | ..... | ..... | 10n | ..... | SW | 0.09 | 2.3 | Light rain | R. J. Cole. |
| *Sydney, C. B | 28.72 | 729.5 | 30.04 | 763.0 | 36.8 | 2.7 | 86 | SE | 10 | 4.5 | ..... | ..... | 10ks | ..... | ..... | 0.127 | 3.23 | Cloudy | C. J. MacGregor, M. A. |
| *Toronto, Ontario | 29.04 | 760.5 | 29.97 | 761.2 | 17 | — 8.3 | 74 | NW | 16 | 7.2 | ..... | 0 | 5ks | ..... | NW | 0.03 | 0.8 | Fair | T. C. Hill. |
| Windsor, N S | 29.68 | 753.9 | 30.08 | 764.0 | 37 | 2.8 | 85 | NE | 6 | 2.7 | ..... | ..... | 10k | ..... | E | 0.14 | 3.6 | Heavy rain | Magnetic Observatory. |
| Woodstock, Ontario | 30.08 | 764.0 | 30.18 | 766.6 | 21.0 | — 6.1 | 86 | N | 24 | 10.7 | ..... | 8cs | 4s | ..... | ..... | 0 | 0 | Fair | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | J. Montgomery. |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 28.0 | — 2.2 | ..... | W | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0.05 | 1.3 | Snowing | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182ft. or 360.3 m.

UNITED STATES SERIES.

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

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Upper. 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.95 | 760.7 | 30.18 | 766.6 | 38 | 3.3 | 68 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Alpena, Michigan | 29.32 | 744.7 | 29.98 | 761.5 | 37 | 2.8 | 90 | E | 16 | 7.2 | ..... | ..... | Fog | ..... | Calm | 0.33 | 8.4 | Foggy | |
| Atlantic City, New Jersey | 30.10 | 764.5 | 30.12 | 765.0 | 48 | 8.9 | 92 | S | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Augusta, Georgia | 29.87 | 758.7 | 30.05 | 763.3 | 64 | 17.8 | 94 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | SE | 0.10 | 2.5 | Threatening | |
| Baltimore, Maryland | 30.02 | 762.5 | 30.07 | 763.8 | 55 | 12.8 | 87 | S | 1 | 0.4 | ..... | ..... | 10n;fg | ..... | Calm | Inap. | Inap. | Light rain | |
| Barnegat, New Jersey | 30.10 | 764.5 | 30.12 | 765.0 | 48 | 8.9 | 91 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Bismarck, Dakota | 27.74 | 704.6 | 29.59 | 751.6 | 34 | 1.1 | 100 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | SE | 0.41 | 10.4 | Cloudy | |
| Boise City, Idaho | 27.16 | 689.8 | 30.04 | 763.0 | 33 | 0.6 | 79 | W | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Boston, Massachusetts | 30.13 | 765.3 | 30.29 | 769.4 | 38.5 | 3.6 | 60 | E | 17 | 7.6 | ..... | 10cs;ck | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Brackettville, Texas | 28.64 | 727.4 | 29.65 | 753.1 | 57 | 13.9 | 63 | SE | 6 | 2.7 | ..... | 0 | 5s | ..... | SE | 0 | 0 | Fair | |
| Breckenridge, Minnesota | 28.58 | 725.9 | 29.56 | 750.8 | 40 | 4.4 | 91 | SE | 14 | 6.3 | ..... | ..... | 10s | ..... | SE | 0.21 | 5.3 | Cloudy | |
| Brownsville, Texas | 29.72 | 754.9 | 29.79 | 756.7 | 60 | 15.6 | 94 | E | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 29.28 | 743.8 | 29.98 | 761.5 | 42 | 5.6 | 100 | NE | 7 | 3.1 | ..... | ..... | 10n | ..... | NE | 0.10 | 2.5 | Light rain | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 38 | 3.3 | 41 | W | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 30.01 | 762.2 | 30.29 | 769.4 | 30 | — 1.1 | 59 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Cairo, Illinois | 29.56 | 750.8 | 29.95 | 760.7 | 50 | 10.0 | 79 | Calm | 0 | 0 | ..... | 8c | 0 | Calm | ..... | 0.03 | 0.8 | Fair | |
| Camp Grant, Arizona | 24.96 | 634.0 | 29.76 | 755.9 | 38 | 3.3 | 31 | E | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | 26.66 | 677.2 | 30.15 | 765.8 | 35 | 1.7 | 53 | W | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.35 | 694.7 | 29.92 | 760.0 | 40 | 4.4 | 91 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Cape Hatteras, N. Carolina | 30.17 | 766.3 | 30.18 | 766.6 | 59 | 15.0 | 94 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Cape Henry, Virginia | 30.10 | 764.5 | 30.12 | 765.0 | 53 | 11.7 | 93 | SE | 6 | 2.7 | ..... | 5k | 5s | SW | S | 0 | 0 | Cloudy | |
| Cape Lookout, N. Carolina | 30.14 | 765.5 | 30.16 | 766.1 | 64 | 17.8 | 83 | S | 9 | 4.0 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Cape May, New Jersey | 30.09 | 764.3 | 30.12 | 765.0 | 51 | 10.6 | 86 | S | 8 | 3.6 | ..... | 10k | 0 | W | ..... | 0 | 0 | Cloudy | |
| Charleston, South Carolina | 30.03 | 762.7 | 30.09 | 764.3 | 64 | 17.8 | 94 | SE | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | 0.21 | 5.3 | Foggy | |
| Cheyenne, Wyoming | 23.63 | 600.2 | 29.57 | 751.1 | 24 | — 4.4 | 87 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Chicago, Illinois | 29.2[illegible] | 742.[illegible] | 29.91 | 759.7 | 48 | 8.9 | 63 | SW | 2 | 0.9 | ..... | 5cs | Fog | Calm | ..... | 0.47 | 11.9 | Fair | |
| Cincinnati Ohio | 29.33 | 745.0 | 29.97 | 761.2 | 55 | 12.8 | 87 | SE | 1 | 0.4 | ..... | 2k | Fog | W | Calm | 0.47 | 11.9 | Foggy | |
| Cleveland, Ohio | 29.29 | 744.0 | 30.00 | 762.0 | 54 | 12.2 | 74 | SW | 4 | 1.8 | ..... | 0 | 1ks | ..... | Calm | Inap. | Inap. | Clear | |
| Concho, Texas | 27.81 | 706.4 | 29.53 | 750.0 | 38 | 3.3 | 30 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.35 | 745.5 | 29.82 | 757.4 | 49 | 9.4 | 71 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Davenport, Iowa | 29.25 | 742.9 | 29.89 | 759.2 | 49 | 9.4 | 64 | SE | 4 | 1.8 | ..... | 7k | 4s | S | S | 0.63 | 13.6 | Cloudy | |
| Deadwood, Dakota | 24.95 | 634.0 | ..... | ..... | 22 | — 5.6 | 100 | S | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Denison, Texas | 29.00 | 736.6 | 29.78 | 756.4 | 51 | 10.6 | 72 | S | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denver, Colorado | 24.40 | 619.8 | 29.02 | 752.3 | 34 | 1.1 | 34 | E | 4 | 1.8 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Detroit, Michigan | 29.29 | 744.0 | 29.96 | 761.0 | 47 | 8.3 | 92 | SE | 1 | 0.4 | ..... | ..... | 10s;fg | ..... | Calm | 0.21 | 5.3 | Cloudy | |
| Dodge City, Kansas | 27.07 | 687.6 | 29.37 | 746.0 | 35 | 1.7 | 70 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Dubuque, Iowa | 29.15 | 740.4 | 29.85 | 758.2 | 44 | 6.7 | 52 | SW | 5 | 2.2 | ..... | 5k | 1s | SW | Calm | 0.09 | 2.3 | Fair | |
| Duluth, Minnesota | 29.10 | 739.1 | 29.78 | 756.4 | 38 | 3.3 | 95 | NE | 14 | 6.3 | ..... | ..... | 10n | ..... | NE | 0.72 | 18.3 | Light rain | |
| Eagle Pass, Texas | 28.92 | 734.6 | 29.66 | 753.4 | 52 | 11.1 | 93 | E | 2 | 0.9 | ..... | ..... | 10k | ..... | Calm | 0 | 0 | Cloudy | |
| Eastport, Maine | 30.32 | 767.6 | 30.39 | 769.4 | 21 | — 6.1 | 57 | NW | 21 | 9.4 | ..... | 5cs | Haze | W | ..... | 0 | 0 | Fair | |
| Erie, Pennsylvania | 29.28 | 743.7 | 30.00 | 762.0 | 46 | 7.8 | 84 | Calm | 0 | 0 | ..... | 2k | 2s | SW | ..... | 0.03 | 0.8 | Fair | |
| Escanaba, Michigan | 29.27 | 743.4 | 29.94 | 760.5 | 36 | 2.2 | 90 | NE | 3 | 1.3 | ..... | ..... | 10n | ..... | Calm | 0.31 | 7.9 | Light rain | |
| Florence, Arizona | 28.27 | 718.0 | 29.87 | 758.7 | 40 | 4.4 | 56 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | 23.94 | 608.1 | 29.94 | 760.5 | 31 | — 0.6 | 68 | NW | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.26 | 641.6 | ..... | ..... | 29 | — 1.7 | 45 | SW | 1 | 0.4 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| Fort Gibson, Indian Ter | 29.20 | 741.7 | 29.74 | 755.4 | 48 | 8.9 | 56 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.40 | 721.3 | 29.66 | 753.4 | 48 | 8.9 | 49 | SE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.83 | 757.7 | 29.87 | 758.7 | —30 | —34.4 | 100 | SW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Sill, Indian Territory | 28.45 | 722.6 | 29.56 | 750.8 | 41 | 5.0 | 65 | N | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Galveston, Texas | 29.80 | 756.9 | 29.85 | 758.2 | 58 | 14.4 | 81 | SE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.28 | 743.7 | 29.93 | 760.2 | 44 | 6.7 | 84 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.11 | 2.8 | Clear | |
| Indianapolis, Indiana | 29.19 | 741.4 | 29.97 | 761.2 | 48 | 8.9 | 93 | E | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0.07 | 1.8 | Foggy | |
| Indianola, Texas | 29.80 | 756.9 | 29.83 | 757.7 | 63 | 17.2 | 78 | E | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.59 | 726.2 | 29.73 | 755.1 | 47 | 8.3 | 48 | S | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.00 | 762.0 | 30.02 | 762.5 | 67 | 19.4 | 84 | SE | 6 | 2.7 | ..... | 8k | 0 | S | ..... | 0.01 | 0.3 | Cloudy | |
| Keokuk, Iowa | 29.20 | 741.7 | 29.81 | 757.2 | 48 | 8.9 | 78 | E | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Key West, Florida | 29.96 | 761.0 | 30.00 | 762.0 | 73 | 22.8 | 90 | SE | 10 | 4.5 | ..... | 2c | 5s | W | Calm;SE | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 30.14 | 765.5 | 30.17 | 766.3 | 54 | 12.2 | 93 | SE | 7 | 3.1 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Knoxville, Tennessee | 28.99 | 736.3 | 29.98 | 761.5 | 56 | 13.3 | 87 | Calm | 0 | 0 | ..... | 1ck | 0 | S | ..... | 0.01 | 0.3 | Clear | |
| La Crosse, Wisconsin | 29.05 | 737.9 | 29.78 | 756.4 | 44 | 6.7 | 76 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.30 | 7.6 | Clear | |
| La Mesilla, New Mexico | 25.90 | 657.8 | 30.05 | 763.3 | 36 | 2.2 | 61 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.32 | 744.7 | 29.65 | 753.1 | 60 | 15.6 | 77 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 28.91 | 734.3 | 29.76 | 755.9 | 37 | 2.8 | 81 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.61 | 752.1 | 29.95 | 760.7 | 45 | 7.2 | 80 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.42 | 747.3 | 29.98 | 761.5 | 52 | 11.1 | 86 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | NE | 0.23 | 5.8 | Cloudy | |
| Lynchburg, Virginia | 29.40 | 746.7 | 30.07 | 763.8 | 60 | 15.6 | 82 | S | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.02 | 0.5 | Light rain | |
| Marquette, Michigan | 29.20 | 741.7 | 29.90 | 759.4 | 42 | 5.6 | 83 | E | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light rain | |
| Mason, Texas | 28.14 | 714.7 | 29.90 | 759.4 | 47 | 8.3 | 85 | Calm | 0 | 0 | ..... | 2s | 0 | S | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.60 | 751.8 | 29.92 | 760.0 | 51 | 10.6 | 64 | SE | 5 | 2.2 | ..... | 1c | Sm'e | SW | Calm | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.23 | 742.4 | 29.92 | 760.0 | 39 | 3.9 | 100 | SE | 3 | 1.3 | ..... | 8c | Sm'e | S | ..... | 0.38 | 9.7 | Fair | |
| Mobile, Alabama | 29.84 | 757.9 | 29.89 | 759.2 | 64 | 17.8 | 100 | SE | 3 | 1.3 | ..... | ..... | 10n | ..... | S | 0.08 | 2.0 | Light rain | |
| Montgomery, Alabama | 29.72 | 754.9 | 29.95 | 760.7 | 62.5 | 16.9 | 85 | SE | 5 | 2.2 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Morgantown, West Virginia | 28.98 | 736.1 | 30.01 | 762.2 | 58 | 14.4 | 76 | E | 1 | 0.4 | ..... | 0 | 2s | ..... | SW | 0.11 | 2.8 | Fair | |
| Mt. Washington, N. H. | 23.81 | 604.8 | 30.17 | 766.3 | 24 | — 4.4 | 61 | N | 18 | 8.0 | ..... | 10cs | 0 | W | ..... | 0 | 0 | Cloudy | |
| Nashville, Tennessee | 29.44 | 747.8 | 29.98 | 761.5 | 52 | 11.1 | 86 | E | 2 | 0.9 | ..... | 0 | Fog | ..... | Calm | 0.59 | 15.0 | Foggy | |
| New Haven, Connecticut | 30.09 | 764.3 | 30.21 | 767.3 | 45 | 7.2 | 76 | NE | 10 | 4.5 | ..... | ..... | 10s | ..... | ..... | 0.06 | 1.5 | Cloudy | |
| New London, Connecticut | 30.19 | 766.8 | 30.24 | 768.1 | 44 | 6.7 | 52 | NE | 12 | 5.4 | ..... | 0 | 10s | ..... | NE | Inap. | Inap. | Cloudy | |
| New Orleans, Louisiana | 29.81 | 757.2 | 29.86 | 758.4 | 52 | 16.7 | 94 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Newport, Rhode Island | 30.20 | 767.1 | 30.25 | 768.3 | 43 | 6.1 | 59 | E | 8 | 3.6 | ..... | ..... | 10ks | ..... | NE | 0 | 0 | Threatening | |
| New York, New York | 29.98 | 761.5 | 30.10 | 766.1 | 44 | 6.7 | 92 | NE | 21 | 9.4 | ..... | ..... | 10ks;fg | ..... | NE | 0.23 | 5.8 | Threatening | |
| Norfolk, Virginia | 30.10 | 764.5 | 30.16 | 766.1 | 59 | 15.0 | 100 | S | 1 | 0.4 | ..... | ..... | 10n | ..... | SW | Inap. | Inap. | Light rain | |
| North Platte, Nebraska | 26.71 | 678.4 | 29.28 | 743.7 | 33 | 0.6 | 79 | NW | 24 | 10.7 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Olympia, Washington Ter. | 30.07 | 763.8 | 30.11 | 764.8 | 32 | 0.0 | 100 | S | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Dense fog | |
| Omaha, Nebraska | 28.59 | 726.2 | 29.68 | 753.9 | 35 | 1.7 | 80 | Calm | 0 | 0 | ..... | 2c | 2s | SW | Calm | 0 | 0 | Fair | |
| Oswego, New York | 29.75 | 755.6 | 30.08 | 764.0 | 44 | 6.7 | 76 | NE | 2 | 0.9 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| Pembina, Dakota | 28.85 | 732.8 | 29.68 | 753.9 | 38 | 3.3 | 91 | E | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0.60 | 15.2 | Cloudy | |
| Philadelphia, Pennsylvania | 30.06 | 763.5 | 30.11 | 764.8 | 55 | 12.8 | 87 | S | 8 | 3.6 | ..... | ..... | 10n | ..... | SW | Inap. | Inap. | Light rain | |
| Phœnix, Arizona | 28.74 | 730.0 | 30.00 | 777.2 | 40 | 4.4 | 56 | E | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.26 | 438.4 | 29.48 | 748.8 | — 8 | —22.2 | 58 | NW | 18 | 8.0 | ..... | 2c | 0 | NW | ..... | 0 | 0 | Clear | |
| Ploche, Nevada | 23.92 | 607.6 | 29.68 | 753.9 | 29 | — 1.7 | 77 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.19 | 741.4 | 29.99 | 761.7 | 56 | 13.3 | 94 | SW | 3 | 1.3 | ..... | ..... | 10n | ..... | SW | 0.02 | 0.5 | Light rain | |
| Port Huron, Michigan | 29.30 | 744.2 | 29.96 | 761.0 | 48 | 8.9 | 93 | Calm | ..... | ..... | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Portland, Maine | 30.27 | 768.8 | 30.32 | 770.1 | 36 | 2.2 | 53 | NE | 16 | 7.2 | ..... | 5k | 2s | N | Calm | 0 | 0 | Cloudy | |
| Portland, Oregon | 30.09 | 764.3 | 30.20 | 767.1 | 37 | 2.8 | 100 | NW | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | 0.03 | 0.8 | Foggy | |
| Prescott, Arizona | 24.65 | 626.1 | 30.01 | 762.2 | 25 | — 3.9 | 50 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Punta Rassa, Florida | 29.99 | 761.7 | 30.01 | 762.2 | 70 | 21.1 | 90 | SE | 24 | 10.7 | ..... | ..... | 10n | ..... | SE | 0.42 | 10.7 | Light rain | |
| Red Bluff, California | 29.66 | 753.4 | 30.02 | 762.5 | 45 | 7.2 | 76 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Rochester, New York | 29.40 | 746.7 | 30.02 | 762.5 | 40 | 4.4 | 82 | E | 7 | 3.1 | ..... | 0 | 8s | ..... | Calm | 0 | 0 | Fair | |

## UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roseburg, Oregon | 29.58 | 751.3 | 30.10 | 766.1 | 40 | 4.4 | 86 | E | 6 | 2 7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Sacramento, California | 29.91 | 759.7 | 29.99 | 761.7 | 48 | 8.9 | 93 | SE | 4 | 1.8 | ..... | 1k | 0 | SW | ..... | 0 | 0 | Clear..... | |
| St. Louis, Missouri | 29.31 | 744.5 | 29.88 | 758.9 | 51 | 10.6 | 69 | S | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| St. Marks, Florida | 29.97 | 761.2 | 29.99 | 761.7 | 63 | 17.2 | 94 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.78 | 19.8 | Cloudy..... | |
| St. Paul, Minnesota | 28.85 | 732.8 | 29.67 | 753.6 | 42 | 5.6 | 83 | SE | 20 | 8.9 | ..... | 8k | 0 | S | ..... | 0.49 | 12.4 | Cloudy..... | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.59 | 647.7 | 29.83 | 757.7 | 34 | 1.1 | 61 | N | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| San Antonio, Texas | 29.12 | 739.6 | 29.70 | 754.4 | 51 | 10.6 | 93 | Calm | 0 | 0 | ..... | 10k | 0 | S | ..... | 0 | 0 | Cloudy..... | |
| San Diego, California | 29.93 | 760.2 | 30.00 | 762.0 | 55 | 12.8 | 51 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy..... | |
| Sandusky, Ohio | 29.34 | 745.2 | 30.01 | 762.2 | 53 | 11.7 | 86 | SW | 8 | 3.6 | ..... | 5k | 8s | NW | Calm | 0.03 | 0.8 | Cloudy..... | |
| Sandy Hook, New Jersey | 30.13 | 765.3 | 30.15 | 765.8 | 45 | 7.2 | 84 | E | 22 | 9.8 | ..... | ..... | 10s | ..... | E | 0.02 | 0.5 | Cloudy..... | |
| San Francisco, California | 29.96 | 761.0 | 30.03 | 762.7 | 51 | 10.6 | 86 | SE | 4 | 1.8 | ..... | 0 | Fog | ..... | Calm | 0.04 | 1.0 | Clear..... | |
| Santa Fé, New Mexico | 22.95 | 582.9 | 29.49 | 749.0 | 20 | — 6.7 | 56 | Calm | 0 | 0 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair..... | |
| Savannah, Georgia | 29.96 | 761.0 | 30.05 | 763.3 | 62 | 16.7 | 94 | S | 2 | 0.9 | ..... | 2c | Fog | S | ..... | 0.15 | 3.8 | Fair..... | |
| Shreveport, Louisiana | 29.67 | 753.6 | 29.89 | 759.2 | 50 | 10.0 | 79 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Smithville, North Carolina | 30.11 | 764.8 | 30.14 | 765.5 | 63 | 17.2 | 94 | S | 10 | 4.5 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy..... | |
| Springfield, Massachusetts | 30.04 | 763.0 | 30.17 | 766.3 | 45 | 7.2 | 53 | NE | 3 | 1.3 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy..... | |
| Stockton, Texas | 26.75 | 679.4 | 29.75 | 755.6 | 40 | 4.4 | 18 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Thatcher's Island, Mass | 30.24 | 768.1 | 30.29 | 769.4 | 38 | 3.3 | 63 | NE | 16 | 7.2 | ..... | 10cs | 0 | NW | ..... | 0 | 0 | Cloudy..... | |
| Toledo, Ohio | 29.30 | 744.2 | 29.97 | 761.2 | 52 | 11.1 | 86 | W | 4 | 1.8 | ..... | 0 | Haze | ..... | Calm | 0.07 | 1.8 | Clear..... | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 34 | 1.1 | 52 | SE | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Tybee Island, Georgia | 30.01 | 762.2 | 30.04 | 763.0 | 60 | 15.6 | 94 | E | 4 | 1 8 | ..... | 5c | Fog | W | Calm | 0.08 | 2.0 | Fair..... | |
| Umatilla, Oregon | 29.77 | 756.1 | ..... | ..... | 38 | 3.3 | 63 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Vicksburg, Mississippi | 29.66 | 753.4 | 29.92 | 760.0 | 54 | 12.2 | 55 | E | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Virginia City, Montana | 24.05 | 610.9 | 29.58 | 760.0 | 26 | — 3.3 | 88 | W | 1 | 0.4 | ..... | ..... | 19n | ..... | Calm | 0.01 | 0.3 | Light snow.. | |
| Visalia, California | 29.68 | 753.9 | 30.06 | 763.5 | 45 | 7.2 | 92 | Calm | 0 | 0 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear..... | |
| Washington, D. C | 29.98 | 761.5 | 30.09 | 764.3 | 57 | 13.9 | 87 | S | 7 | 3.1 | ..... | ..... | 10n | ..... | W | 0.01 | 0.3 | Light rain... | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 44 | 6.7 | 76 | N | ..... | ..... | ..... | 8ck | 0 | Calm | ..... | 0 | 0 | Fair..... | |
| Wilmington, N. Carolina | 30.05 | 763.3 | 30.13 | 765.3 | 60 | 15.6 | 94 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy..... | |
| Winnemucca, Nevada | 25.61 | 650.5 | 29.97 | 761.2 | 25 | — 3.9 | 75 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Wood's Holl, Mass | 30.19 | 766.8 | 30.25 | 768.3 | 43 | 6.1 | 50 | E | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Yankton, Dakota | 28.34 | 719.8 | 29.03 | 752.6 | 32 | 0.0 | 89 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | SE | 0.19 | 4.8 | Cloudy..... | |
| Yuma, Arizona | 29.81 | 757.2 | 29.98 | 761.5 | 57 | 13.9 | 40 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A | 30.18 | 766.6 | 30.24 | 768.1 | 11.5 | —11.4 | 90 | E | 10 | 4.5 | ..... | 2cs | 0 | E | ..... | 0 | 0 | Fair..... | J. Fortescue, W. Wood |
| Havana, Cuba, W. I | 29.95 | 760.7 | 29.97 | 761.2 | 73 | 22.8 | 90 | SE | 2.4 | 1.1 | ..... | 4ck | 0 | NW | ..... | 0 | 0 | Fair..... | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | 30.08 | 764.0 | 30.09 | 764.3 | 76 | 24.4 | 86 | Calm | 0 | 0 | ..... | 5ck | 2s | E | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I | 29.93 | 760.2 | 30.01 | 762.2 | 78 | 25.6 | ..... | NE | 8 | 3.6 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair..... | F. M. Everett. |
| Paramaribo, D. Guiana, S. A | ..... | ..... | 30.00 | 762.0 | 80 | 26.7 | 91 | E | ..... | ..... | 3 | ..... | 10n | ..... | ..... | 0.610 | 12.95 | Raining..... | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | 30.07 | 763.6 | 30.07 | 763.8 | 82.4 | 28 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.098 | 2.50 | Cloudy..... | Dr. H. Groot. |
| Medellin, Colombia, S. A | 25.21 | 640.3 | ..... | ..... | 69.0 | 20.6 | 83 | Calm | ..... | ..... | 0 | ..... | 10s;ks | ..... | ..... | 0 | 0 | ..... | Thomas Herran |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medillin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,676 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,060 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.56 in.; Salt Lake City, 4.88 in.; Santa Fé, 6.64 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er. —10. | Clouds. Amount. Low'r. 0—10. | Clouds. Direction. Up'er. From— | Clouds. Direction. Low'r. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NavyYard, Mare Island, Cal. | 29.97 | 761.2 | 50 | 10.0 | 47 | 8.3 | 100 | SW | 7 | 3.1 | ..... | ..... | 0 | ..... | ..... | 0.005 | 0.13 | ..... | ..... | Clear..... | |
| Navy Yard, Pensacola, Fla. | 30.02 | 762.5 | 64 | 17.8 | 64 | 17.8 | 94 | E | 13 | 5.8 | ..... | ..... | 10 | ..... | ..... | 2.23 | 56.6 | ..... | ..... | Raining..... | |
| NavyYard, Portsmouth, N.H | 30.34 | 770.6 | 70 | 21.1 | 35 | 1.7 | 70 | NE | 6 | 2.7 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Naval Hospital, Yokohama, Japan | 30.21* | 767.3* | 54 | 12.2 | 46 | 7.8 | 69 | Calm | ..... | ..... | 0 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | ..... | Clear; Lightning. | |
| Adams. Panama | 29.95 | 760.7 | 80 | 26.7 | 80 | 26.7 | 78 | NW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Alliance, Piraeus, Greece | 30.31‡ | 769.9‡ | ..... | ..... | 58 | 14.4 | 48 | SSW | ..... | ..... | 0–1 | ..... | 1 | ..... | WSW | ..... | ..... | ..... | ..... | Clear ..... | |
| Ashuelot. Shanghai, China | 30.40* | 772.1* | 58 | 14.4 | 48 | 8.9 | 85 | SE | ..... | ..... | 2 | ..... | 7 | ..... | SE | ..... | ..... | ..... | ..... | D. clouds..... | |
| Canonicus, New Orleans, La. | 29.87 | 758.7 | 48 | 8.9 | 61 | 16.1 | 94 | NE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Foggy ..... | |
| Colorado, New York, N. Y. | 30.15‡ | 765 8‡ | ..... | ..... | 44 | 6.7 | 84 | NE | 6 | 2.7 | ..... | ..... | 10 | ..... | ENE | 0.003 | 0.08 | ..... | ..... | Hazy..... | |
| Constitution, N. 42° 08′ W. 46° 35′ | 29.37‡ | 746.0‡ | ..... | ..... | 48 | 8.9 | 78 | NW | ..... | ..... | 6 | ..... | 8 | ..... | NW | ..... | ..... | Mod'ate | NW | Cloudy..... | |
| Despatch, Constantinople, Turkey. | 30.47 | 773.9 | 75 | 23.9 | 47 | 8.3 | 62 | SW | ..... | ..... | 3 | ..... | 5 | ..... | SW | ..... | ..... | ..... | ..... | Fair ..... | |
| Enterprise, New Orleans, La. | 29.88‡ | 758.9‡ | ..... | ..... | 64 | 17.8 | 89 | N | ..... | ..... | 2 | ..... | 10 | ..... | N | ..... | ..... | ..... | ..... | Misty..... | |
| Franklin. Norfolk, Va. | 30.16‡ | 766.1‡ | ..... | ..... | 58 | 14.4 | 70 | SW | 5.4 | 2.4 | ..... | ..... | 0? | ..... | ..... | ..... | ..... | ..... | ..... | Rainy ..... | |
| Gettysburg Valetta, Malta | 30.10‡ | 764.5‡ | ..... | ..... | 64 | 17.8 | ? ? | SSE | ..... | ..... | 3 | ..... | 5 | ..... | Calm | 0 | 0 | ..... | ..... | Fair..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.03 | 762.7 | 74 | 23.3 | 73 | 22.8 | 76 | NE | ..... | ..... | 4 | ..... | 2 | ..... | NE | ..... | ..... | Mod'ate Ground | NW | Clear ..... | |
| Marion, Piraeus, Greece | 30.30 | 769.6 | 57 | 13.9 | 56 | 13.3 | 57 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Michigan. Erie, Pa. | 29.47 | 748.5 | 58 | 14.4 | 45 | 7.2 | 61 | ENE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Monongahela. N. 21° 00′, E. 115° 03′ | 30 28* | 769.1* | 70 | 21.1 | 70 | 21.1 | 80 | NE | ..... | ..... | 5–6 | ..... | 8 | ..... | ..... | ..... | ..... | Rough | N&E | D. clouds.... | |
| New Hampshire, Port Royal, S. C. | 30.26 | 768.6 | 66 | 18.9 | 64 | 17.8 | 94 | SE | 1 | 0.4 | ..... | ..... | 8 | ..... | SW | 0 | 0 | ..... | ..... | Fair ..... | |
| Omaha, S. 8° 55′, W. 30° 35′ | 30.08* | 764.0* | 84 | 28.9 | 83 | 28.3 | 71 | ESE | 5 | 2.2 | ..... | ..... | 4 | ..... | ESE | 0 | 0 | Mod'ate | E | Pleasant..... | |
| Onward, Callao, Peru | 29.99† | 761.7† | ..... | ..... | 73 | 22.8 | 85 | SSE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, N. 19° 33.′ W. 93° 50′ | 29.86‡ | 758.4‡ | ..... | ..... | 75 | 23.9 | 90 | S | ..... | ..... | 1 | ..... | 10 | ..... | N | ..... | ..... | Long | NW | Hazy..... | |
| Palos, Shanghai, China | 30.43* | 772.9* | 65 | 18.3 | 48 | 8.9 | 85 | ESE | ..... | ..... | 1 | ..... | 6 | ..... | S&E | ..... | ..... | ..... | ..... | Clear?..... | |
| Pensacola, Honolulu, H. I. | 30.23 | 767.8 | 75 | 23.9 | 72 | 22 2 | 85 | NE | 5 | 2.2 | ..... | ..... | 2 | ..... | NE | 0.01 | 0.3 | ..... | ..... | Clear ..... | |
| Plymouth. Norfolk, Va. | 30.11‡ | 764.8‡ | ..... | ..... | 61 | 16.1 | 82 | S | ..... | ..... | 1 | ..... | 10 | ..... | S | ..... | ..... | ..... | ..... | Drizzling..... | |
| Powhatan, Santiago de Cuba, W. I. | 30.07‡ | 763.8‡ | ..... | ..... | 78 | 25.6 | 91 | E | 1.2 | 0.5 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | Smooth | ..... | Pleasant.. .. | |
| Ranger, Amoy, China | 30.41* | 772.4* | ..... | ..... | 63.5 | 17.5 | 80 | SE | ..... | ..... | 0–1 | ..... | 10 | ..... | N | ..... | ..... | Smooth | ..... | Overcast.... | |
| Rio Bravo, Brownsville, Texas | ..... | ..... | ..... | ..... | 58 | 14.4 | 94 | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | |
| Santee, Annapolis, Md. | 30.15* | 765.8* | 63 | 17.2 | 53 | 11.7 | 93 | S | ..... | ..... | 2 | ..... | 10 | ..... | W | 0.01 | 0.3 | ..... | ..... | Light rain.... | |
| Saratoga, Washington, D. C. | 30.04* | 763.0* | ..... | ..... | 58 | 14.4 | 100 | SW | ..... | ..... | 2 | ..... | 10 | ..... | Calm | Light | Light | ..... | ..... | Cloudy..... | |
| St. Louis, League Island, Pa | 30.03 | 762.7 | 64 | 17.8 | 53 | 11.7 | 100 | SE | 2 | 0.9 | ..... | ..... | 10 | ..... | NE | 0.01 | 0.3 | ..... | ..... | Rainy ..... | |
| Supply, N. 49° 05′ W. 25° 10′ | 30.40 | 772.1 | 59 | 15.0 | 54 | 12.2 | 93 | SSE | ..... | ..... | 6 | ..... | 10 | ..... | S | ..... | ..... | Mod'ate | S | Cloudy..... | |
| Swatara, N. 12° 27′ W. 73° 26′ | 30.00* | 762.0* | ..... | ..... | 78 | 25.6 | 95 | E | ..... | ..... | 4 | ..... | 2 | ..... | E | ..... | ..... | Long | E | Misty..... | |
| Tennessee, N. 3° 48′, E. 105° 41′ | 30.02* | 762.5* | 83 | 28.3 | 82 | 27.8 | 75 | NE | 4 | 1.8 | ..... | ..... | 2 | ..... | NE | 0 | 0 | Long | NE | D. clouds..... | |
| Trenton, Smyrna, Turkey | 30.34‡ | 770.6‡ | ..... | ..... | 52 | 11.1 | 60 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Hazy..... | |
| Tuscarora, N. 27° 53,′ W. 115° 30′ | 30.10 | 764.5 | 62 | 16.7 | 61 | 16.1 | 71 | NNW | ..... | ..... | 4–5 | ..... | 5 | ..... | NNW | 0 | 0 | Mod'ate | NNW | Fair ..... | |
| Vandalia, Piraeus, Greece | 30.22‡ | 767.6‡ | ..... | ..... | 55 | 12.8 | 56 | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Wabash, Boston, Mass. | 30.27‡ | 768.8‡ | ..... | ..... | 42 | 5.6 | 66 | ENE | 13 | 5.8 | ..... | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Threatening | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

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

| NAMES OF VESSELS. | TRUE COURSE TOWARD— | HOURLY RATE IN KNOTS. | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | SEA-SWELL. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | CHARACTER. | DIRECTION FROM— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Panama, Esquimault, B. C. | | | 30.11† | 764.8† | | | | Calm | | | 0 | | 8 | | NW | | | Frosty | Capt. Seabury. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, N. 32° 15′, E. 132° 30′ | | | | | 56 | 13.3 | | SW | | | 5 | | | | | Smooth | NNW | Blue sky | Capt. Maury. |
| S. S. Colima, N. 23° 12′, W. 106° 23′ | | | 29.87† | 758.7† | 63 | 17.2 | ?? | N | | | 2 | | 3 | | NNW | Mod'ate | N | D. clouds | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic, Off Fire Island, N. Y. | | | 30.21* | 767.3* | | | | NE | | | 2 | | 10 | | | None | | Cloudy | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, N. 49° 37′, W. 32° 40′ | | | 29.71† | 754.6† | 52 | 11.1 | ?? | SSW | | | 6 | | 10k | | SSW | High | SSW | Misty | Capt. W. H. Thompson |
| S. S. Celtic, Mersey River | | | 30.23† | 767.8† | 49 | 9.4 | 93 | WNW | | | 6 | | | NW | | | | D. clouds | Capt. B. Gleadell. |
| S. S. Germanic, Off Queenstown, Ireland | | | 30.41† | 772.4† | 54 | 12.2 | 93 | W | | | 3 | | 3 | | N | | | D. clouds | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. *Aneroid; corrected for elevation; instrumental error not known. †Aneroid.

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

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic | | | | | | | | | | | | | | | | | | | Capt. John Metcalf. |
| S. S. Gaelic, N. 31° 00′, E. 164° 50′ | | | 29.91† | 759.7† | 61 | 16.1 | ?? | W | | | 6 | | k | | W | Heavy | NW | Squally | Capt. W. H. Kidley |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—CONTINUED.

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

| NAMES OF VESSELS. | TRUE COURSE TOWARD— | HOURLY RATE IN KNOTS. | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | SEA-SWELL. | | WEATHER. | OBSERVER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | Character. | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois, N. 40° 55′, W. 50° 50′ | | | 29.52* | 749.8* | 50 | 10.0 | 93 | WNW | | | 7 | | 4 | | WNW | Mod'ate | WNW | Rain-squalls | Captain Shackelford. |
| S. S. Indiana, Philadelphia, Pa | | | 30.08† | 764.0† | 48 | 8.9 | 92 | ENE | | | 5 | | 7 | | NE | | | Cloudy | Captain Sargent. |
| S. S. Ohio, Liverpool | | | 30.19 | 766.8 | 54 | 12.2 | 87 | NW | | | 5 | | 5? | | NW | | | Clear? | Captain Morrison. |
| S. S. Pennsylvania, N. 49° 34′, W. 38° 02′ | | | 29.45 | 748.0 | 53 | 11.7 | 100 | SW | | | 5 | | 8 | | SW | Large | SW | Partly clear | Captain Harris. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid †Aneroid; unreliable, corrected for elevation, instrumental error not known.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland, N. 38° 52′, W. 61° 55′ | | | 30.12* | 765.0* | | | | N | 25 | 11.2 | | | 5 | | NNE | Mod'ate | N | D. clouds | Capt. Jackson. Capt. Nichols. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | |

*Aneroid; regulated to standard at Antwerp.

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

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

**MARINE SERIES. (Miscellaneous.)**

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller N. 39° 51′ W. 72° 25′ | | | 30.11 | 764.8 | 48 | 8.9 | 92 | SE | 4 | 1.8 | | | Fog | | | Smooth | | Foggy | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 30.23 | 767.8 | —39.5 | —39.7 | 86* | Calm | 0 | 0 | | 0 | 0 | | | | | Clear | O. T. Sherman. |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Determined by use of hair hygrometer.

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

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

Albert J. Myer

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

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 12, 1878.

**7:85 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.

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

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

## ALGERIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.15 | 765.8 | 62.8 | 17.1 | ..... | SW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Dr. Ollive. |
| Nemours | ..... | ..... | 30.17 | 766.4 | 62.2 | 16.8 | 72 | E | ..... | ..... | 5 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair. | Michel. |
| Algiers | ..... | ..... | 30.21 | 767.4 | 60.1 | 15.6 | 78 | ENE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Towilliere. |
| La Calle | ..... | ..... | 30.16 | 766.1 | 60.6 | 15.9 | 58 | NW | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Boulangeot. |
| Tunis | ..... | ..... | 30.17 | 766.3 | 61.5 | 16.4 | 49 | WNW | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy. | Jacques. |
| Sfax | ..... | ..... | 30.22 | 767.5 | 75.2 | 24.0 | ..... | SE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Gau. |
| Saida | ..... | ..... | 30.16 | 766.1 | 73.8 | 23.2 | 80 | NE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Herbin. |
| Tebessa | ..... | ..... | 30.41 | 772.5 | ..... | ..... | ..... | NW | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Bourgeois. |
| Geriville | ..... | ..... | 30.26 | 768.6 | 61.5 | 16.4 | 83 | NW | ..... | ..... | 7 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Lemaillot. |
| Laghouat | ..... | ..... | 30.18 | 766.5 | 65.5 | 18.6 | 57 | ENE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Guyot. |
| Biskra | ..... | ..... | 30.20 | 767.1 | 70.5 | 21.4 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

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

## AUSTRIAN SERIES.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.25 | 743.0 | 29.80 | 757.0 | 50.7 | 10.4 | 40 | SW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 0.063 | 1.6 | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 28.82 | 732.1 | 29.60 | 751.9 | 39.9 | 4.4 | 56 | W | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0.260 | 6.6 | ..... | Dr. Wierzbiski. |
| Eperies | 28.67 | 728.1 | 29.55 | 750.5 | 45.0 | 7.2 | 70 | S | ..... | ..... | 1 | ..... | 10k;s | ..... | N | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.49 | 723.6 | 29.74 | 755.3 | 51.4 | 10.8 | 44 | Calm | ..... | ..... | 0 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.32 | 719.3 | 29.74 | 755.4 | 49.6 | 9.8 | 45 | WNW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.47 | 723.1 | 29.86 | 758.4 | 34.5 | 1.4 | 93 | W | ..... | ..... | 8 | ..... | 10 | ..... | ..... | 0.413 | 10.5 | ..... | Prof. C. Wagner |
| Lemberg | 28.50 | 723.9 | 29.51 | 749.5 | 37.4 | 3.0 | 83 | NW | ..... | ..... | 8 | ..... | 10 | ..... | ..... | 0.063 | 1.6 | ..... | Dr. T. Stanecki. |
| Pola | 29.80 | 756.9 | 29.91 | 759.8 | 48.4 | 9.1 | 77 | WNW | ..... | ..... | 1 | ..... | 9s | ..... | ..... | 0.071 | 1.8 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.27 | 743.5 | 29.74 | 755.5 | 43.9 | 6.6 | 65 | SW | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 0.079 | 2.0 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.51 | 749.5 | 29.79 | 756.7 | 49.6 | 9.8 | 62 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Karl Stancel. |
| Trieste | 29.80 | 756.9 | 29.90 | 759.5 | 48.2 | 9.0 | 84 | SW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | Fair | P. Busin. |
| Vienna | 29.06 | 738.1 | 29.80 | 756.9 | 35.8 | 2.1 | 85 | NW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0.197 | 5.0 | ..... | I. R. Central Met.Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

## BELGIAN SERIES.

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| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.84 | 727.6 | 30.10 | 766.9 | 41.9 | 5.5 | ..... | NW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0.028 | 0.7 | Solar halo | Prof. M. Passau. |
| Brussels | 30.02 | 762.4 | 30.22 | 767.6 | 44.6 | 7.0 | 64 | WNW | ..... | ..... | 3 | ..... | 9 | ..... | NNW | 0.028 | 0.7 | ..... | Royal Observatory. |
| Furnes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.008 | 0.2 | ..... | M. E. de Cae. |
| Maeseyck | 30.02 | 762.4 | 30.14 | 765.6 | 46.2 | 7.9 | 97 | NW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

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

## BRITISH SERIES.

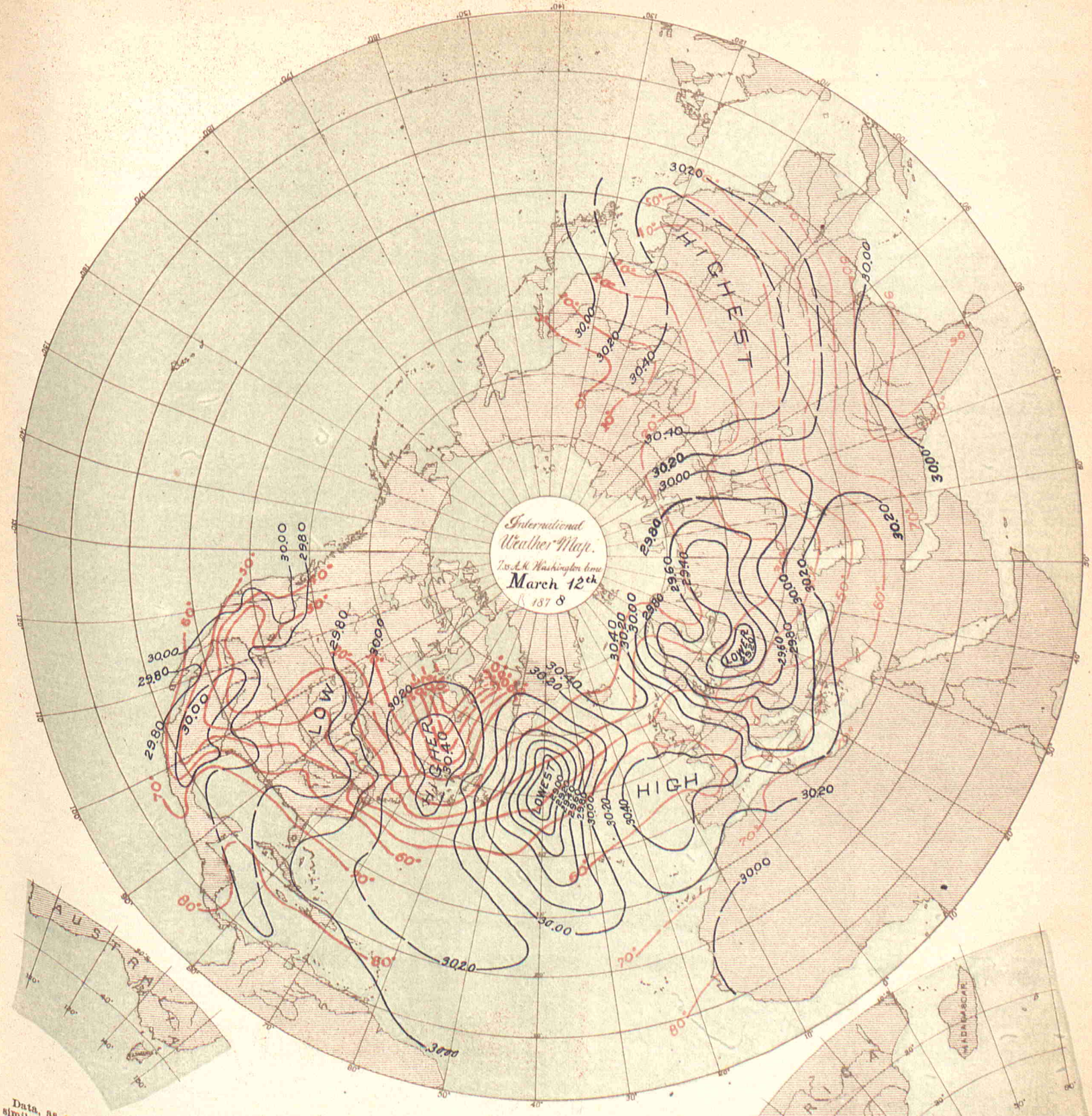
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.21 | 767.3 | 30.31 | 769.9 | 39.6 | 4.2 | ..... | NW | 20 | 8.9 | ..... | ..... | 8 | ..... | ..... | 0.015 | 0.38 | Overcast..... | W. Boswell. |
| Ardrossan | 30.31 | 769.9 | 30.33 | 770.4 | 45 | 7.2 | ..... | SW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.39 | 771.9 | 46.1 | 7.8 | ..... | NNE | 5 | 2.2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | S. Cull, for Dr. Robinson. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.33 | 770.4 | 47.3 | 8.5 | ..... | ESE | 3 | 1.3 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | John Hartnup. |
| Birr Castle, (Parsonstown) | 30.18 | 766.6 | 30.38 | 771.6 | 53.0 | 11.7 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | J. Dreyer. |
| Bradford, Yorkshire | 29.90 | 759.4 | 30.30 | 769.6 | 45.1 | 7.3 | ..... | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.99 | 761.7 | 30.02 | 762.5 | 80.0 | 26.7 | ..... | NE | ..... | ..... | 2 | ..... | 5? | ..... | ..... | 0.01 | 0.3 | Overcast?.... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 30.31 | 769.9 | 49.0 | 9.4 | ..... | N | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | Hazy..... | H. Todd. [H.C. |
| Cardington | ..... | ..... | 30.33 | 770.4 | 46.6 | 8.1 | ..... | N | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | John McLaren. |
| Chatham, School M. E. | 30.16 | 766.1 | 30.30 | 769.6 | 48.2 | 9.0 | ..... | N | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.91 | 734.3 | 30.42 | 772.7 | 45.0 | 7.2 | ..... | NW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Rain and fog | Alexander Watt. |
| Donaghadee | 30.32 | 770.1 | 30.35 | 770.9 | 45 | 7.2 | ..... | NNE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | J. Mac Gowan. |
| Dover | 30.26 | 768.6 | 30.29 | 769.4 | 46 | 7.8 | ..... | NE | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | ¾ clouded... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 30.31 | 769.9 | 50.8 | 10.4 | ..... | N | 0.6 | 0.3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Blue sky..... | Thomas Mackereth. |
| Falmouth, Observatory | 30.16 | 766.1 | 30.40 | 772.1 | 53.3 | 11.8 | ..... | NW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | The Staff. |
| Fort Napier, (Natal) | 27.72 | 704.1 | 29.92 | 760.0 | 83.7 | 28.7 | ..... | W | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.69 | 754.1 | 29.92 | 760.0 | 86.0 | 30.0 | ..... | N | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's College | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.10 | 764.5 | 30.15 | 765.8 | 58.4 | 14.7 | ..... | E | ..... | ..... | 7 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy..... | Corpl. C. Aitken, A.H.C. |
| Glasgow, Observatory | 30.12 | 765.0 | 30.33 | 770.4 | 43.1 | 6.2 | ..... | NNW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | D. G. Maclean. |
| Great Yarmouth | 30.25 | 768.3 | 30.26 | 768.6 | 45 | 7.2 | ..... | NNW | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 30.13 | 765.3 | 30.31 | 769.9 | 50.0 | 10.0 | ..... | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | The Staff, for G. B. Airy. |
| Guernsey | 30.11 | 764.8 | 30.33 | 770.4 | 52.5 | 11.4 | ..... | WNW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 30.40 | 772.1 | 54 | 12.2 | ..... | W | ..... | ..... | 4 | ..... | 8k | ..... | ..... | 0 | 0 | Gloomy..... | M. P. Moyle. |
| Holyhead | 30.29 | 769.4 | 30.34 | 770.6 | 47 | 8.3 | ..... | NNW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | John Tilston. |
| Jersey | 30.08 | 764.0 | 30.37 | 771.4 | 51.0 | 10.6 | ..... | WNW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 30.32 | 770.1 | 47.7 | 8.7 | ..... | N | 9 | 4.0 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff. |
| Kingstown | 30.34 | 770.6 | 30.37 | 771.4 | 47 | 8.3 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 30.32 | 770.1 | 46.5 | 8.1 | ..... | NW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Blue sky..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.97 | 761.2 | 30.04 | 763.0 | 60.0 | 15.6 | ..... | NW | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Sgt. Fred. Travis, A. H. |
| Nairn | 30.35 | 770.9 | 30.43 | 772.9 | 40 | 4.4 | ..... | NW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded... | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 30.04 | 763.0 | 76.2 | 24.6 | ..... | SE | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 30.13 | 765.3 | 30.32 | 770.1 | 43.1 | 6.2 | ..... | NW | ..... | ..... | 2 | ..... | 1c;k | ..... | NW | 0.041 | 1.04 | Blue sky..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.78 | 756.4 | 30.32 | 770.1 | 48.0 | 8.9 | ..... | NNE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.31 | 769.9 | 47 | 8.3 | ..... | NE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | Mr. Lucas |
| Plymouth | 30.28 | 769.1 | 30.36 | 771.1 | 53.3 | 11.8 | ..... | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Merrifield. |
| Roche's Point | 30.35 | 770.9 | 30.39 | 771.9 | 54 | 12.2 | ..... | NW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Misty..... | W. Kennedy. |
| Saint Ann's Head | 30.29 | 767.1 | 30.36 | 771.1 | 50 | 10.0 | ..... | WNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John C. Walker. |
| Sandwick Manse, (Orkneys | ..... | ..... | 30.33 | 770.4 | 36 | 2.2 | ..... | NNW | 27 | 12.1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 30.06 | 763.5 | 53.2 | 11.8 | ..... | SW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | Blank | Blank | D. clouds..... | Sergt. W. H. Lyne. |
| Sheffield | 30.06 | 763.5 | 30.34 | 770.6 | 46.7 | 8.2 | ..... | NW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Blue sky..... | W. F. Cooper. |
| Silloth Rectory | 30.30 | 769.6 | 30.33 | 770.4 | 52.0 | 11.4 | 52 | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.92 | 760.0 | 30.33 | 770.4 | 46.4 | 8.0 | ..... | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 30.33 | 770.4 | 38 | 3.3 | ..... | NNE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Smith. |
| Stratfield Turgiss | 30.11 | 764.8 | 30.34 | 770.6 | 45.7 | 7.6 | ..... | E | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | Rev. C. H. Griffith, F.M.S. |
| Thurso | ..... | ..... | 30.31 | 769.9 | 38 | 3.3 | ..... | NNW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 30.38 | 771.6 | 55 | 12.8 | ..... | NW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 30.46 | 773.7 | 52.3 | 11.3 | ..... | W | 19 | 8.5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.92 | 760.0 | 72.5 | 22.5 | 69 | NW | ..... | ..... | 3 | ..... | 4k | ..... | ..... | 0 | 0 | ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.80 | 756.9 | 29.98 | 761.5 | 84.8 | 29.3 | 52 | SW | 6.0 | 2.7 | ..... | 2 | 2 | ..... | ..... | 0 | 0 | Fine..... | C. Meldrum. |
| Melbourne, Observatory | 29.94 | 760.5 | 30.03 | 762.7 | 61.0 | 16.1 | 88 | SE | 4 | 1.8 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Fine..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

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

| Marine Series. Vessels. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|
| S. S. Algeria | ..... | ..... | ..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon, Off Port Royal, Jamaica, W.I | 4 | E | Showery..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | Capt. C. C. Prehn. [R. |
| S. S. Peruvian | ..... | ..... | ..... | Capt. W. H. Smith, R.N. |
| Royal Alice | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | Capt. Alex Simpson. |
| S. S. Yorkshire, N. 37° 30′ W. 60° 20′ | 3 | NW | D. clouds .... | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | |

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.




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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

| STATIONS. | BAROMETER. Corrected for instrumental error and temperature. Inches. | BAROMETER. Corrected for instrumental error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er | CLOUDS. Amount. Low'r | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.19 | 665.2 | | | 66.6 | 19.2 | 81 | NE | | | 1 | p | 1ks | | E | 0 | 0 | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.52 | 749.9 | 29.57 | 751.1 | 37.0 | 2.8 | 74 | N | | | 6 | | 10 | | | | | | |
| Fanöe | 29.76 | 755.9 | 29.78 | 756.4 | 42.1 | 5.6 | 62 | NNW | | | 6 | | 1 | | | | | | |
| Godthaab, (Greenland) | 29.90 | 759.4 | 29.94 | 760.5 | 12.0 | —11.1 | 92 | NNW | | | 5 | | 10 | | | | | | Snowing |
| Stykkisholm, (Iceland) | 30.44 | 773.2 | 30.48 | 774.3 | 23.2 | — 4.9 | 100 | SE | | | 7 | | 8 | | | | | | |
| Thorshavn, (Fanöe) | 30.43 | 772.9 | 30.47 | 773.8 | 28.8 | — 1.8 | 78 | N | | | 3 | | 7 | | | | | | |
| Vestervig | 29.59 | 751.5 | 29.76 | 755.8 | 41.7 | 5.4 | 87 | NW | | | 6 | | 0 | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.80 | 756.9 | 30.35 | 770.9 | 50.0 | 10 | 95 | NW | | | 1 | | 10 | | | 0 | 0 | Covered | Collignon, Director. |
| Amiens, Normal School | 30.15 | 765.7 | 30.26 | 768.6 | 48.6 | 9.2 | 79 | NE | | | 2 | | 5 | | NW | 0.161 | 4.6 | Cloudy | Bonvarne, Director. |
| Avignon, Normal School | 30.13 | 765.2 | 30.21 | 767.2 | 59.0 | 15 | 47 | N | | | 6 | | 2 | | NNW | 0 | 0 | Partly cl'dy | Mr. Giraud, Director |
| Bar-sur-Seine | 29.64 | 752.9 | 30.22 | 767.6 | 47.5 | 8.6 | 92 | SW | | | 1 | | 10 | | WSW | 0.008 | 0.2 | Raining | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 46.9 | 8.3 | 78 | NNE | | | 2 | | 10 | | NNE | 0.128 | 3.25 | Covered | Normal School. |
| Besançon | 29.33 | 744.9 | 30.24 | 768.0 | 46.0 | 7.8 | 97 | S | | | 2 | | 8 | | W | 0.067 | 2.2 | Very cloudy | Normal School. |
| Bourg-en-Bresse | 29.45 | 747.9 | 30.36 | 771.1 | 46.6 | 8.1 | 81 | W | | | 2 | | 5n | | W | 0.04 | 1. | Cloudy | Normal School. |
| Bourges, Normal School | 29.76 | 755.9 | 30.32 | 770.1 | 50.7 | 10.4 | 90 | S | | | 2 | | 5 | | SW | 0.008 | 0.2 | Partly cl'dy. | A. Wagner, Director. |
| Brest, Naval Observatory | 30.15 | 765.9 | 30.37 | 771.5 | 52.0 | 11.1 | 82 | NNW | | | 3 | | 10 | | NNW | 0.010 | 0.25 | Raining | The Staff. |
| Carcassonne, Normal School | 29.95 | 760.7 | 30.37 | 771.4 | 53.6 | 12 | 88 | W | | | 6 | | 2 | | NW | 0 | 0 | Slightly cl'dy | Vateau, Director. |
| Caen | 30.24 | 768.0 | 30.31 | 769.9 | 52.9 | 11.6 | 87 | N | | | 1 | | 5 | | NW | 0.031 | 0.8 | Cloudy | Normal School. |
| Chartres, Normal School | 29.64 | 752.9 | 30.22 | 767.5 | 51.1 | 10.6 | 90 | NW | | | 2 | | 8 | | NW | 0 | 0 | | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.90 | 759.4 | 30.23 | 767.7 | 46.9 | 8.3 | 74 | W | | | 2 | | 5ck | | W | 0.055 | 1.4 | Cloudy | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.94 | 735.0 | 30.32 | 770.2 | 48.2 | 9.0 | 56 | NE | | | 2 | | 10 | | NW | 0 | 0 | Covered | Alluard, Director. |
| Commercy, Normal School | 29.32 | 744.7 | 30.23 | 767.7 | 48.2 | 6.2 | 77 | WNW | | | 2 | | 5 | | WNW | 0.08 | 2. | Cloudy | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.96 | 735.6 | 30.10 | 764.6 | 56.3 | 13.5 | 42 | NW | | | 6 | | 2 | | NW | 0 | 0 | ¾ covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 30.21 | 767.2 | 30.43 | 772.8 | 54.3 | 12.4 | 76 | N | | | 1 | | 10 | | | 0 | 0 | Covered | Mouillot, Director. |
| Le Mans, Normal School | 30.00 | 762.1 | 30.33 | 770.0 | 53.4 | 11.9 | 78 | NW | | | 4 | | 8 | | NW | 0 | 0 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 29.28 | 743.7 | 30.22 | 767.6 | 45.0 | 7.2 | 100 | SE | | | 2 | | 10 | | W | 0.16 | 4. | Raining | Voudez, Director. |
| Lorient, Naval Observatory | 30.34 | 770.7 | 30.45 | 773.3 | 50.1 | 13.4 | 69 | NW | | | 2 | | 5 | | NW | 0 | 0 | ½ Covered | T. Carré, Director. |
| Mâcon, Normal School | 29.64 | 752.9 | 30.30 | 769.7 | 48.0 | 8.9 | 89 | NW | | | 2 | | 8 | | | 0 | 0 | Very cloudy | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | | | | | | | | | | | | | | | | | | | Normal School. |
| Nismes, Normal School | 29.12 | 739.6 | 30.19 | 766.9 | 43.5 | 6.4 | 82 | NW | | | 4 | | 10 | | SE | 0.20 | 5. | Covered | Alluard, Director. |
| Orleans, Normal School | 29.99 | 761.7 | 30.19 | 766.8 | 63.0 | 17.2 | 41 | N | | | 6 | | 2 | | NE | 0 | 0 | Slightly cl'dy | Normal School. |
| Paris, Observatory | 29.88 | 759.0 | 30.27 | 768.9 | 52.9 | 11.6 | 78 | WNW | | | | | 10 | | NW | 0 | 0 | Covered | Boyer, Director. |
| Privas | 30.02 | 762.5 | 30.26 | 768.7 | 46.6 | 8.1 | 86 | NE | | | 1 | | 10 | | N | 0 | 0 | Drizzling | Bernard, Director. |
| Puy de Dome (Summit) | 29.13 | 740.0 | 30.21 | 767.4 | 53.6 | 12 | 62 | N | | | 2 | | 10 | | S | 0 | 0 | Covered | National Observatory. |
| Rochefort, Naval Obs'y | | | | | | | | | | | | | | | | | | | Normal School |
| Rouen, Normal School | 30.43 | 772.9 | 30.46 | 773.7 | 56.3 | 13.5 | 82 | NW | | | 3 | | 10 | | NW | 0 | 0 | Covered | Alluard, Director. |
| Saint Malo (Port) | 30.20 | 767.1 | 30.29 | 769.3 | 51.1 | 10.6 | 75 | NNE | | | 3 | | 10 | | W | 0.051 | 1.3 | Covered | Lt. Decante, Director. |
| Tarbes, Normal School | | | | | | | | | | | | | | | | | | | F. Lucard, Director. |
| Villefranche | 29.35 | 745.5 | 30.45 | 773.4 | 54.5 | 12.5 | 50 | SE | | | 3 | | 0 | | | 0 | 0 | Clear | M. H. Hercouet. |
| SUB-SERIES. | 29.61 | 752.0 | 30.34 | 770.7 | 47.3 | 8.5 | 81 | NW | | | 2 | | 8 | | NW | 0.063 | 1.6 | Very cloudy | T. Hugues, Director. |
| Fort de France, Martinique | 29.83 | 757.6 | 29.85 | 758.3 | 77.0 | 25 | | | | | | | | | | | | | Vilot, Director |
| Lyons | | | | | | | | | | | | | | | | 2.09 | 53. | | L'Abbé Marchesi. |
| Marseilles, Observatory | | | 30.32 | 770.2 | 47.7 | 8.7 | | | | | | | 10 | | | 0.016 | 0.4 | Rainy | M. Jeys. |
| Mont-Louis | | | 30.03 | 762.8 | 58.1 | 14.5 | 43 | NW | | | 8 | | 6 | | | 0 | 0 | Cloudy | The Staff. |
| Nice | 25.08 | 636.9 | 30.39 | 771.9 | 46.4 | 8.0 | 24 | N | 13.0 | 5.83 | | | 2 | | NW | 0 | 0 | | Mr. Falguère. |
| Paris, Montsouris Obs'y | 29.84 | 758.0 | 29.92 | 760.0 | 59.2 | 15.1 | 53 | S | | | 3 | | 5 | | WSW | 0 | 0 | Cloudy | Dr. A. Niepce. |
| Perpignan | 29.97 | 761.2 | 30.24 | 768.2 | 45.3 | 7.4 | 96 | NNE | | | 4 | | 10 | | N | 0.024 | 0.6 | Sprinkling | Marié Davy, Director. |
| Pic du Midi, (Summit,) H. P. | | | 30.18 | 766.6 | 62.2 | 16.8 | 42 | N | 35.4 | 15.83 | | | 1 | | NW | 0.055 | 1.4 | | Dr. Fines. |
| Pic du Midi, (Plantade,) H. P. | 22.72 | 577.0 | | | 39.2 | 4.0 | | N | | | 1 | | 2 | | | 0 | 0 | Clear | M. Baylac. |
| Saint Maur, (near Paris) | 30.09 | 764.3 | 30.26 | 768.5 | 46.4 | 8.0 | 86 | N | | | 2 | | 10 | | | 0.063 | 1.6 | Raining | Gen'l de Nansouty |
| Toulouse, Observatory | 29.74 | 755.3 | 30.47 | 773.9 | 49.5 | 9.7 | 63 | NW | | | 4 | | 8 | | | 0 | 0 | | E. Renou. |
| Tours | 30.12 | 765.0 | 30.32 | 770.0 | 54.0 | 12.2 | 72 | NW | | | 3 | | 10 | | NNW | 0 | 0 | | The Staff. |
| Versailles, (near Paris) | | | 30.26 | 768.6 | 46.4 | 8.0 | 94 | NE | | | 3 | | 10 | | | 0.095 | 2.42 | Raining | C. Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.51 | 775.0 | 30.54 | 775.6 | 41.9 | 5.5 | 67 | NE | 9.4 | 4.2 | | 10ck | | W | | 0 | 0 | Covered | Dr. A. Bériguy. |
| | | | | | | | | | | | | | | | | | | | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,273.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 303 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | 10 | | | 0.448 | 11.38 | Raining | Prof. Dr. Hoh. |
| Berlin | 29.45 | 748.0 | 29.63 | 752.6 | 39.9 | 4.4 | 80 | NW | | | 3 | | 6 | | | 0.152 | 3.86 | Snowing | Prof. Arndt. |
| Breslau | 29.05 | 737.9 | 29.58 | 751.2 | 39.7 | 4.3 | 49 | W | | | 7 | | 9 | | | 0.366 | 9.3 | Raining | Royal University Obs'y |
| Carlsruhe | 29.66 | 753.3 | 30.10 | 764.4 | 48.6 | 9.2 | 47 | N | | | 2 | | 10 | WNW | | 0.239 | 6.08 | Snow & graupel | Albert Senz. |
| Cassel | 29.36 | 745.8 | 29.97 | 761.2 | 37.8 | 3.2 | 87 | NW | | | 9 | | 9ks | | | 0.28 | 7. | | Dr. H. Möhl. |
| Crefeld | 29.93 | 760.2 | 30.09 | 764.3 | 46.0 | 7.8 | 57 | N | | | 7 | | 1 | | | 0.47 | 12. | | Director Lose. |
| Emden | 30.00 | 762.0 | 30.04 | 762.9 | 42.8 | 6.0 | 81 | NW | | | 5 | | 4 | | | 0.142 | 3.6 | | Prof. Prestel. |
| Frankfort on the Main | 29.71 | 754.7 | 30.08 | 764.1 | 47.3 | 8.5 | 48 | NNW | | | 5 | | 10 | WNW | | 0.094 | 2.4 | | Physical Society. |
| Friedrichshafen | 28.64 | 727.5 | 30.11 | 764.7 | 44.6 | 7.0 | 82 | WSW | | | 9 | | 8k | | | 0.366 | 9.3 | Fair | M. Wilhelm. |
| Hamburg | 29.73 | 755.1 | 29.80 | 756.9 | 42.3 | 5.7 | 58 | NW | | | 6 | | 1 | | | 0.212 | 5.38 | | Captain F. Hegemann. |
| Kiel | 29.72 | 754.9 | 29.74 | 755.3 | 42.4 | 5.8 | 59 | NW | | | 5 | | | | | 0.178 | 4.53 | Cloudy | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.10 | 739.1 | 29.18 | 741.2 | 35.2 | 1.8 | 86 | N | | | | | 5 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 29.37 | 746.1 | 33.8 | 1.0 | | NW | | | 6 | | 8 | NW | | 0.098 | 2.5 | | H. Müller. |
| Leipsic, Observatory | 29.35 | 745.4 | 29.78 | 756.4 | 40.1 | 4.5 | 60 | NW | | | 6 | | 9ks | | | | | | Prof. Bruhns. |
| Memel, Naval School | 29.14 | 740.1 | 29.18 | 741.2 | 37.2 | 2.9 | 85 | N | | | 2 | | 10 | | | 0.161 | 4.1 | | Reinbrech von Skalweit. |
| Neufahrwasser | 29.25 | 742.9 | 29.26 | 743.3 | 36.0 | 2.2 | 82 | NW | | | 4 | | 10 | | | 0.490 | 12.45 | Cloudy | A. Lothes. |
| Posen | 29.23 | 742.4 | 29.53 | 750.0 | 40.1 | 4.5 | 59 | SW | | | 9 | | 6 | NNW | | 0.153 | 3.88 | | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.61 | 752.1 | 30.17 | 766.4 | 46.0 | 7.8 | 72 | NNW | | | 3 | | 5 | N | | 0.244 | 6.2 | | Dr. Schur. |
| Stuttgart | 29.08 | 738.6 | 30.04 | 763.0 | 44.6 | 7.0 | 53 | NW | | | 5 | | 4 | | | 0.045 | 1.13 | Foggy | Prof. Schoder. |
| Treves, (Trier) | 29.54 | 750.4 | 30.07 | 763.7 | 46.6 | 8.1 | 45 | NW | | | 8 | | 8k | | NW | 0.213 | 5.4 | Squally | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.43 | 722.1 | 29.97 | 761.2 | 40.8 | 4.9 | 53 | NW | 31 | 14 | | | 7 | | | 0.194 | 4.93 | Cloudy | Dr. Von Bebber. |
| Wustrow, Naval School | 29.82 | 757.4 | 29.85 | 758.2 | 38.8 | 3.8 | 73 | N | | | 5 | | | | | | | | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.73 | 755.2 | 30.13 | 765.2 | 55.2 | 12.9 | | SW | | | 3.5 | | | | | | | Clear | Dr. J. F. J. Schmidt. |

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

## INDIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.93 | 760.3 | 29.98 | 761.6 | 77.4 | 25.2 | 77 | SW | 30.0? | 13.4? | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.52 | 749.7 | 29.98 | 761.5 | 96.1 | 35.6 | 25 | Calm | | | | | 1 | W | | 0 | 0 | D. clouds | |
| Bombay | 29.92 | 759.8 | 29.95 | 760.8 | 81.2 | 27.3 | 73 | W | 6.0 | 2.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.91 | 708.8 | 29.87 | 758.7 | 90.8 | 32.7 | 48 | SSW | | | | | 10 | | S | 0 | 0 | Dust-whirl | |
| Lahore | 29.29 | 743.8 | 30.04 | 763.0 | 75.6 | 24.2 | 45 | NW | 2.4 | 1.1 | | | 10 | S | W | 0.08 | 2.0 | Cloudy | |
| Belgaum | 27.43 | 696.8 | 29.94 | 760.4 | 84.9 | 29.4 | 59 | W | 10.0 | 4.5 | | | 3 | | | 0 | 0 | Misty | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 29.08 | 738.5 | 29.98 | 761.5 | 79.6 | 26.4 | 39 | Calm | 1.5 | 0.7 | | | 5 | | | 0 | 0 | | |
| Agra | 29.40 | 746.8 | 29.97 | 761.2 | 82.7 | 28.2 | 33 | W | | | | | 4 | | W | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.91 | 734.3 | 29.93 | 760.3 | 91.5 | 33.1 | 19 | Calm | 2.5 | 1.1 | | | 2 | | | 0 | 0 | Blue sky | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.59 | 751.6 | 29.96 | 761.0 | 84.3 | 29.1 | 54 | NW | 1.7 | 0.8 | | | 8 | S | | 0 | 0 | D. clouds | |
| Allahabad | 29.64 | 753.0 | 29.96 | 760.8 | 83.7 | 28.7 | 35 | Calm | 0.7 | 0.3 | | | 3 | W | | 0 | 0 | D. clouds | |
| Patna | 29.76 | 755.9 | 29.94 | 760.5 | 87.2 | 30.7 | 33 | W | 0.9 | 0.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.95 | 710.0 | 29.96 | 760.9 | 82.3 | 27.9 | 15 | NW | 5.5 | 2.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.88 | 759.0 | 29.96 | 761.1 | 85.8 | 29.9 | 52 | S | 4.3 | 1.9 | | | 0 | | | 0 | 0 | Misty | |
| Calcutta (Alipore) | 29.94 | 760.6 | 29.97 | 761.1 | 82.2 | 27.9 | 60 | SW | 4.0 | 1.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.61 | 752.1 | 30.01 | 762.2 | 73.7 | 23.2 | 59 | SE | 8.4 | 3.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.94 | 760.4 | 30.03 | 762.8 | 79.9 | 26.6 | 82 | W | 3.6 | 1.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Sibsagar | 29.75 | 755.7 | 30.10 | 764.6 | 67.0 | 19.4 | 75 | ENE | 1.9 | 0.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.61 | 726.7 | 29.96 | 760.9 | 90.0 | 23.2 | 20 | NW | 1.5 | 0.7 | | | | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.47 | 745.4 | 29.89 | 759.1 | 49.1 | 9.5 | 63 | SW | 1.8 | 0.8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 29.73 | 755.1 | 29.84 | 758.0 | 52.7 | 11.5 | 51 | WSW | 5.6 | 2.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.65 | 753.1 | 29.85 | 758.1 | 52.9 | 11.6 | 51 | SE | 1.3 | 0.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.52 | 724.5 | 29.87 | 758.6 | 59.7 | 15.4 | 29 | WSW | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. Trinfini Carlo. |
| Milan | 29.37 | 745.9 | 29.89 | 759.2 | 59.4 | 15.2 | ..... | W | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 28.98 | 736.2 | 29.91 | 759.7 | 55.9 | 13 3 | 38 | ESE | 3.8 | 1.7 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 27.96 | 710.2 | 29.91 | 759.7 | 57.0 | 13.9 | 34 | NW | ..... | ..... | 2 | ..... | 1 | NW | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.73 | 755.2 | 29.90 | 761.0 | 56.8 | 13.8 | 48 | SW | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.78 | 756.4 | 29.95 | 760.8 | 57.9 | 14.4 | 51 | SE | 6.3 | 2.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.68 | 751.2 | 29.89 | 759.3 | 57.9 | 14.4 | 50 | NNE | ..... | ..... | 6 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.67 | 753.5 | 29.93 | 760.2 | 56.3 | 13.5 | 47 | W | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Cav. F Meucci. |
| Leghorn | 29.89 | 759.2 | 29.98 | 761.4 | 55.6 | 13.1 | 69 | SW | 2.5 | 1.1 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 29.92 | 760.0 | 29.97 | 761.3 | 49.6 | 9.8 | 60 | NE | 15.4 | 6.9 | ..... | ..... | 10 | W | ..... | 0.102 | 2.6 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.34 | 719.9 | 29.96 | 760.7 | 50.5 | 10.3 | 74 | NE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0.390 | 9.9 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.84 | 757.9 | 29.95 | 760.8 | 59.0 | 15.0 | 67 | WNW | ..... | ..... | 4 | ..... | 2 | NW | ..... | 0.031 | 0.8 | ..... | Avv. P. Ponticelli. |
| Rome | 29.79 | 756.6 | 29.97 | 761.2 | 59.0 | 15.0 | 58 | W | 6.3 | 2.8 | ..... | ..... | 3 | ..... | ..... | 0.059 | 1.5 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U | 29.79 | 756.6 | 29.99 | 761.8 | 58.6 | 14.8 | 60 | WNW | ..... | ..... | 4 | ..... | 8 | W | ..... | 0.630 | 16.0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 54.6 | 12.5 | 85 | WSW | 9.4 | 4.2 | ..... | ..... | 8 | SW | ..... | 0.209 | 5.3 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.85 | 758.1 | 30.04 | 763.1 | 61.9 | 16.6 | 49 | NW | ..... | ..... | 4 | ..... | 3 | N | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.07 | 738.3 | 29.97 | 761.3 | 53.8 | 12.1 | 71 | NE | 5.6 | 2.5 | ..... | ..... | 7 | ..... | ..... | 0.894 | 22.7 | ..... | Prof. F. D. Conti. |
| Palermo | 29.72 | 754.8 | 29.98 | 761 4 | 55.2 | 12.9 | 71 | W | 6.3 | 2.8 | ..... | ..... | 10 | ..... | ..... | 0.161 | 4.1 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.89 | 759.2 | 29.97 | 761.1 | 58.8 | 14.9 | 57 | WNW | ..... | ..... | 6 | ..... | 6 | W | ..... | 0.075 | 1.9 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R | 29.40 | 746.8 | 29.96 | 760.9 | 56.5 | 13.6 | 64 | NNW | 0.7 | 0.3 | ..... | ..... | 7 | SW | ..... | 0 | 0 | ..... | Prof. F. Brioschi |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.1 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 29.90 | 759.4 | 29.92 | 759.9 | 42.0 | 5.6 | 61 | NNW | 8.2 | 3.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Cloudy..... | The Observatory. |
| Tokei (Yeddo) University | 29.81 | 757.2 | 29.91 | 759 8 | 42.5 | 5 8 | 54 | NNW | 15 | 6.7 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear..... | Prof. P. V. Veeder |

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Castillo, A. E. |
| Guadalajara | 25 04 | 636.0 | 29.82 | 757.4 | 62.6 | 17.0 | 43 | N | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear.. | Prof. L. Perez. |
| Guanajuato | 24.99 | 634.8 | 30.08 | 764.0 | 38.3 | 3.5 | 44 | Calm | 0 | 0 | ..... | 0 | 5 | ..... | SW | 0 | 0 | ½ cloudy..... | Prof. V. Fernandez |
| Leon | 23.61 | 599.8 | 29.86 | 758.5 | 55 4 | 13.0 | 62 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear... | Prof. M. Leal. |
| Mexico | ..... | ..... | ..... | ..... | 53.4 | 11.9 | 39 | NNW | 0.9 | 0.4 | ..... | 2c | 0 | SW | ..... | 0 | 0 | Dry fog..... | Central Observatory. |
| Orizaba | 23.03 | 584.9 | 30.14 | 765.5 | 46.8 | 8.2 | 42 | Calm | 0 | 0 | ..... | 3c | 1s | SW | SW | 0 | 0 | ½ cloudy..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, M. E. |
| Puebla | ..... | ..... | ..... | ..... | 44.2 | 6.8 | 33 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair..... | Prof. R. Gonzalez. |
| Toluca | 23.29 | 591.6 | 30.04 | 763.1 | 43.2 | 6.2 | 51 | ENE | 2.4 | 1.1 | ..... | 2c | 3cs | SW | ..... | ..... | ..... | ½ cloudy..... | Prof. C. Velazquez. |
| Tlacotulpam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. F. R. Bayly. |
| San Luis Potosi | 29.76 | 755.8 | 29.76 | 756.1 | 70.7 | 21.5 | 93 | S | 5.1 | 2.3 | ..... | 7sk | 0 | W | ..... | 0 | 0 | Cloudy..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | 29.77 | 756.0 | 29.79 | 756.7 | 72.5 | 22.5 | 91 | WNW | 5.1 | 2.3 | ..... | 2c | 0 | SW | ..... | 0 | 0 | Foggy..... | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 28.28 | 591.4 | 30.08 | 763.9 | 50.9 | 10.5 | 42 | W | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | P. Spina. [M. M. D. D. |
| Morelia | ..... | ..... | ..... | ..... | 45.3 | 7.4 | 49 | NNE | ..... | ..... | ..... | 0 | 2cs | ..... | WSW | ..... | ..... | Dry fog..... | M. Tena, F. L. Parra |

NOTE.—The elevation of Aguascalientes, is 1,881 m., or 6,105.4 ft.; Córdoba, 858 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,660 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,771 m., or 5,829 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known The data are published as given.

## NETHERLANDS' SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Groningen | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Helder | 30.25 | 768.3 | 30.25 | 768.3 | 40.4 | 8.0 | ..... | NW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.094 | 2.4 | ..... | |
| Hellevoetsluis | 29.97 | 761.1 | 30.02 | 762.5 | 44.1 | 6.7 | ..... | N | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0.028 | 0.7 | ..... | |
| Utrecht | 30.12 | 765.1 | 30.12 | 765.1 | 44.4 | 6.9 | ..... | WNW | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0.039 | 1.0 | ..... | |
| ..... | 30.21 | 767.4 | 30.21 | 767.4 | 46.0 | 7.8 | 72 | NW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | 30.11 | 764.8 | 30.16 | 766.0 | 47.1 | 8.4 | 56 | NW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0.055 | 1.4 | Cloudy..... | H. v d Brink. |

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give and humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper the lower clouds.

## NORWEGIAN SERIES.

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

| STATIONS | Barometer: Corrected for instrumental error and temperature. (Inches.) | Barometer: Corrected for instrumental error and temperature. (Millimeters.) | Barometer: Reduced to sea-level. (Inches.) | Barometer: Reduced to sea-level. (Millimeters.) | Temperature of the Air. (Fahrenheit.) | Temperature of the Air. (Centigrade.) | Relative Humidity. (Per cent.) | Wind. Direction. (From—) | Wind. Velocity. (Miles per hour.) | Wind. Velocity. (Meters per second.) | Wind. Force. (0—10.) | Clouds. Amount. Up'er (1—10.) | Clouds. Amount. Low'r (1—10.) | Clouds. Direction. Upper. (From—) | Clouds. Direction. Lower. (From—) | Rain-fall or melted snow in the past 24 hours. (Inches.) | Rain-fall or melted snow in the past 24 hours. (Millimeters.) | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.84 | 757.9 | 29.89 | 759.3 | 35 2 | 1.8 | 67 | N | 40.0 | 17.9 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.55 | 750.5 | 29 59 | 751.5 | 32.0 | 0.0 | 94 | SSW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | |
| Christiania | 29.48 | 748.9 | 29.63 | 752.7 | 43.0 | 6.1 | 40 | N | 7 | 3 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.64 | 752.9 | 29.69 | 754.0 | 28.4 | — 2.0 | 68 | NE | 7 | 3 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |

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

## PORTUGUESE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.94 | 760.4 | 30.13 | 765.3 | 61.9 | 16.6 | 92 | S | 2.5 | 1.1 | ..... | ..... | 4 | ..... | ..... | 1.693 | 43.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.22 | 742.3 | 30.24 | 768.2 | 65.3 | 18.5 | 91 | NE | 12.5 | 5.6 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos |
| Funchal, (Madeira) | 30.14 | 765.6 | 30.23 | 767.8 | 66.0 | 18.9 | 53 | SW | 4.9 | 2.2 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.89 | 759.1 | 30.24 | 768.1 | 63.5 | 17.5 | 36 | ENE | 18.6 | 8.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.15 | 765.8 | 30.24 | 768.0 | 63.3 | 17.4 | 84 | S | 14.3 | 6.4 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

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

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell: Height scale 0–9 | Sea or swell: Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd't. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd t. |
| Mindello, Mozambique, Mozambique | 29.77 | 756.1 | 29.78 | 756.3 | 80.6 | 27.0 | ..... | SW | ..... | ..... | 4 | ..... | 10 | ..... | SW | 1 | ..... | Raining | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Sado, Mouth of River Gambia | 29.96* | 761.0* | 29.97* | 761.3* | 82.0 | 27.8 | ..... | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 2 | NW | Blue sky | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.74 | 755.5 | 29.75 | 755.7 | ..... | ..... | ..... | WSW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreina, dos Anas, Com' |

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 28.94 | 735.1 | 29.37 | 746.1 | 34.0 | 1.1 | 90 | W | 22 | 10 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 28.76 | 730 5 | 29.19 | 741.3 | 34.7 | 1.5 | 94 | S | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Astronomical Obs. |
| Dorpat | 29.16 | 740.7 | 29.41 | 747.1 | 25.2 | — 3.8 | 78 | NE | 11 | 5 | ..... | ..... | 10k | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.43 | 747.6 | 29.45 | 748.0 | 23.9 | — 4.5 | 75 | WNW | 7 | 3 | ..... | ..... | 8n;ks | ..... | ..... | ..... | ..... | Light clouds | Central Physical Obs. |
| Kuopio | 29.17 | 740.9 | 29.50 | 749.4 | 20.1 | — 6.6 | 100 | N | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ch. Forsten. |
| Kieff | 28.89 | 733.8 | 29.54 | 750.3 | 36.5 | 2.5 | 77 | SSW | 13 | 6 | ..... | ..... | 10ks;n;c | ..... | ..... | ..... | ..... | ..... | Physical Cabinet |
| Nikolaiev | 29.78 | 756.4 | 29.85 | 758.2 | 44.1 | 6.7 | 53 | S | 22 | 10 | ..... | ..... | 5cs | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.12 | 765.0 | 30.14 | 765.5 | 43.0 | 6.1 | 74 | S | 9 | 4 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.04 | 737.7 | 29.61 | 752.1 | 28.6 | — 1.9 | 70 | S | 9 | 4 | ..... | ..... | 7ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.72 | 755.0 | 29.94 | 760.4 | 37.2 | 2.9 | 61 | SSW | 22 | 10 | ..... | ..... | 8s | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.37 | 745.9 | 29.39 | 746.4 | 26.2 | — 3.2 | 91 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.91 | 734.2 | 30.37 | 771.4 | 45.0 | 7.2 | 30 | Calm | 0 | 0 | ..... | ..... | 3k | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.38 | 771.6 | 30.30 | 769.5 | 38.1 | 3.4 | 50 | SW | 16 | 7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Kasan | 29.50 | 749.3 | 29.78 | 756.5 | 26.4 | — 3.1 | 70 | SSW | 4 | 2 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischet. |
| Ekaterinburg | 28.76 | 730.4 | 29.73 | 755.1 | 32.0 | 0.0 | 96 | SSE | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 30.00 | 761.9 | 30.24 | 768.0 | 42.1 | 5.6 | 75 | NW | 20 | 9 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.45 | 722.6 | 30.11 | 764.9 | 67.3 | 19.6 | 40 | NE | 7 | 3 | ..... | ..... | 8k | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.76 | 755.8 | 30.31 | 769.9 | 28.9 | — 1.7 | 60 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 30.23 | 767.9 | 30.58 | 776.6 | 28.8 | — 1.8 | 84 | SE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Krotkowo* | 29.39 | 746.5 | 29.89 | 759.2 | 25.7 | — 3.5 | 74 | S | 11 | 5 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | Light clouds | Cand. Fatjanow. |
| Peking, (China) | 30.27 | 768.9 | 30.41 | 772.5 | 41.2 | 5.1 | 27 | SW | 13 | 6 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 28.05 | 712.5 | 30.28 | 769.2 | 12.0 | —11.1 | 70 | NW | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | — 4.4 | —20.2 | 78 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 30.14 | 765.6 | 30.24 | 768.2 | 63.5 | 17.5 | 52 | W | 2.0 | 0.91 | ..... | 1c | 0 | N | ..... | 0 | 0 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.43 | 772.9 | 30.49 | 774.4 | 58.6 | 14.8 | 63 | E | 1.7 | 0.75 | ..... | 2 | 0 | N | ..... | 0 | 0 | Almost clear | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.38 | 695.4 | ..... | ..... | 52.9 | 11.6 | 72 | NE | 12.2 | 5.47 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 28.07 | 712.9 | 30.31 | 769.6 | 60.1 | 15.6 | 43 | E | 6.0 | 2.67 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |
| Murcia, Met. Obs'y | 30.15 | 765.9 | 30.30 | 769.7 | 64.4 | 18.0 | 55 | NE | 2.6 | 1.14 | ..... | 2 | 4 | W | ..... | 0 | 0 | Cloudy | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.40 | 746.7 | 30.29 | 769.4 | 62.8 | 17.1 | 51 | E | 11.2 | 5.00 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.91 | 759.7 | 29.98 | 761.4 | 75.9 | 24.4 | 86 | SE | 6.9 | 3.1 | ..... | 1cs | 1sk | S | SSE | 0 | 0 | Clear | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 30.10 | 764.6 | 30.20 | 767 2 | 60.4 | 15.8 | 61 | ENE | 38.4 | 17.2 | ..... | 0 | 10 | ..... | E | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W.I. | 29.98 | 761.5 | 30.07 | 763.8 | 77.0 | 25.0 | 89 | E | 4.8 | 2.13 | ..... | 5kn | 3kn | E | E | 0.305 | 7.75 | Cloudy | Leonardo de Tejeda, Chief of Engineers. |

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

## SWEDISH SERIES.

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

| STATIONS | Barometer: Corrected for instrum'tal error and temperature. Inches | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er (1–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.63 | 752.6 | 29.67 | 753.6 | 23.4 | — 4.8 | ..... | N | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.59 | 751.6 | 29.64 | 752.9 | 29.1 | — 1.6 | 100 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.248 | 6.3 | ..... | |
| Hernosand | 29.55 | 750.6 | 29.60 | 751.9 | 31.6 | — 0.2 | 96 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.213 | 5.4 | ..... | |
| Stockholm | 29.32 | 744 6 | 29.49 | 749.1 | 31.3 | — 0.4 | 92 | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.063 | 1.6 | Snowing | |
| Wisby | 29.28 | 743.6 | 29.34 | 745.1 | 33.1 | 0.6 | 85 | ENE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.209 | 5.3 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.45 | 748.1 | 29.53 | 750.0 | 30.6 | — 0.2 | 79 | NNE | 8.7 | 3.9 | ..... | ..... | 10 | ..... | NNE | 0.008 | 0.21 | ..... | Dr. Hildebrandsson. |

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

## SWISS SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.80 | 731.4 | 30.24 | 768.1 | 48.0 | 8.9 | 65 | SSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.012 | 0.3 | Covered | The Observatory. |
| Zurich | 28.50 | 723.8 | 30.17 | 766.4 | 42.1 | 5.6 | 86 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.307 | 7.8 | Covered | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +6.6 mm.; Thermometer, +1.6 cent.; Relative Humidity, +3 per cent.

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

## TURKISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.13 | 765.3 | 49.5 | 9.7 | 40 | SW | 8 | 3.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanides. |
| Valona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. Bertrand. |
| Varna | ..... | ..... | 29.93 | 760.3 | 53.4 | 11.9 | ..... | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 30.08 | 764.0 | 30.20 | 767.1 | 59.2 | 15.1 | 62 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.87 | 758.7 | 30.19 | 766.8 | 31 | — 0.6 | ..... | NE | 5 | 2.2 | ..... | ..... | 10s | ..... | NE | Inap. | Inap. | Light rain | W. R. Bigg. |
| *Chatham, N. B | 30.36 | 771.1 | 30.43 | 772.9 | 11 | —11.7 | 84 | SW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | G. A. Blair. |
| Charlottetown, P. E. Island | 30.34 | 770.6 | 30.39 | 771.9 | 17 | — 8.3 | 80 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.97 | 761.2 | 30.17 | 766.3 | 29.9 | — 1.2 | 81 | NE | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0 | - | Cloudy | James Smith, M. A. |
| Dalhousie, N. B | 30.40 | 772.1 | 30.43 | 772.9 | 36 | 2.2 | 97 | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | Bright | H. A. Johnson. |
| Esquimault, B. C | 29.77 | 756.1 | 29.81 | 757.2 | 44.8 | 7.1 | 96 | NW | ..... | ..... | ..... | 4ck | 0 | ..... | ..... | 0 | 0 | Cloudy | W. H. Bevis. |
| *Father Point, Quebec | 30.44 | 773.2 | 30.46 | 773.7 | 10 | —12.2 | 79 | Calm | 0 | 0 | ..... | 2cs | 0 | S | ..... | 0 | 0 | Clear | J. McWilliams. |
| Fredericton, N. B | 30.39 | 771.9 | 30.46 | 773.7 | 16.0 | — 8.9 | 83 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. Harrison. |
| *Fort Garry Manitoba | 29.06 | 738.1 | 29.90 | 759.4 | 35 | 1.7 | 96 | SE | 7 | 3.1 | ..... | 2ck | 2ks | S | S | 0.140 | 3.56 | Fair | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.89 | 733.8 | 30.03 | 762.7 | 35 | 1.7 | 100 | E | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | James Grant. |
| *Halifax, N. S | 30.23 | 767.8 | 30.37 | 771.4 | 21 | — 6.1 | 80 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | F. Allison, M. A. |
| Hamilton, Ontario | 29.70 | 754.4 | 30.08 | 764.0 | 36.7 | 2.6 | 99 | NE | ..... | ..... | 1 | 10cs | 0 | ..... | ..... | 0.15 | 3.8 | Misty | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.69 | 754.1 | 29.71 | 754.6 | 22 | — 5.6 | 64 | NE | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 0.01 | 0.3 | Overcast | E. Weedon. |
| *Kingston, Ontario | 29.80 | 756.9 | 30.14 | 765.5 | 34 | 1.1 | 88 | NE | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.20 | 767.1 | 30.24 | 768.1 | 18 | — 7.8 | ..... | NW | 8 | 3.6 | ..... | 1k | 0 | NW | ..... | 0 | 0 | Fair | C. H. Rigby. |
| *Montreal, Quebec | 30.04 | 763.0 | 30.25 | 768.3 | 25 | — 3.9 | 78 | NE | 6 | 2.7 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.38 | 746.2 | 30.10 | 764.5 | 34 | 1.1 | 84 | NE | 3 | 1.3 | ..... | ..... | 10n | ..... | E | 0.02 | 0.5 | Cloudy | Rev. R. Mosley. |
| Peterboro, Ontario | 29.32 | 744.7 | 30.10 | 764.5 | 33.7 | 0.9 | 87 | E | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Misty | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.33 | 745.0 | 30.04 | 763.0 | 35 | 1.7 | 100 | NE | 13 | 5.8 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | H. Morgan. |
| Port Hastings, N. S | 30.28 | 769.1 | 30.34 | 770.6 | 21.9 | — 5.6 | ..... | NW | 7 | 3.1 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.35 | 745.5 | 30.02 | 762.5 | 36 | 2.2 | 96 | NE | 6 | 2.7 | ..... | ..... | Fog | ..... | NE | 0 | 0 | Foggy | M. Payne. |
| *Quebec, Quebec | 29.99 | 761.7 | 30.33 | 770.4 | 25 | — 3.9 | 75 | NE | ..... | ..... | 5 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.69 | 754.1 | 30.17 | 766.3 | 32 | 0.0 | 65 | SE | 3 | 1.3 | ..... | 10cs | 0 | SE | ..... | Inap | Inap. | Cloudy | W. H. McIntyre. |
| St. Andrews, N. B | 30.35 | 770.9 | 30.40 | 772.1 | 26 | — 3.3 | 68 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Dr. Gove. |
| St. John, N. B | 30.25 | 768.3 | 30.43 | 772.9 | 19 | — 7.2 | 84 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0.450 | 11.43 | Clear | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.31 | 744.5 | 30.03 | 762.7 | 40 | 4.4 | 86 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | ..... | 0.01 | 0.3 | Cloudy | K. Stewart. |
| Stayner, Ontario | 29.25 | 742.9 | 30.05 | 763.3 | 36 | 2.2 | 91 | SE | 3 | 1.3 | ..... | ..... | 10n | ..... | SE | Inap. | Inap. | Cloudy | R. J. Cole. |
| Stratford, Ontario | 28.72 | 729.5 | 30.04 | 763.0 | 34.4 | 1.3 | 98 | E | 7 | 3.1 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.23 | 767.8 | 30.26 | 768.6 | 19 | — 7.2 | 59 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | T. C. Hill. |
| *Toronto, Ontario | 29.69 | 754.1 | 30.08 | 764.0 | 35 | 1.7 | 99 | N | 7 | 3.1 | ..... | ..... | Fog | ..... | Calm | 0.04 | 1.0 | Light rain | Magnetic Observatory. |
| Windsor, N. S | 30.30 | 769.6 | 30.40 | 772.1 | 23.5 | — 5.3 | 93 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 28.0 | — 5.0 | ..... | NE | ..... | ..... | ..... | 5k | 5s | E | E | 0.05 | 1.3 | Stormy | J. Montgomery. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182ft. or 360.3 m.

1878.—March 13.

UNITED STATES SERIES.

By authority of the SECRETARY OF WAR.

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

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Upper. 0–10 | Clouds. Amount. Low'r. 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 30.00 | 762.0 | 30.24 | 768.1 | 34 | 1.1 | 70 | SE | 10 | 4.5 | | | 10s | | Calm | 0.22 | 5.6 | Cloudy | |
| Alpena, Michigan | 29.40 | 746.7 | 30.06 | 763.5 | 35 | 1.7 | 100 | N | 3 | 1.3 | | | Fog | | Calm | 0.03 | 0.8 | Foggy | |
| Atlantic City, New Jersey | 30.10 | 764.5 | 30.12 | 765.0 | 42 | 5.6 | 100 | NE | 26 | 11.6 | | | 10n | | Calm | 0.39 | 9.9 | Heavy rain | |
| Augusta, Georgia | 29.64 | 752.8 | 29.82 | 757.4 | 64 | 17.8 | 89 | E | 5 | 2.2 | | 2c | 8s;ks | S | N;S | 0.03 | 0.8 | Threatening | |
| Baltimore, Maryland | 30.04 | 763.0 | 30.09 | 764.3 | 42 | 5.6 | 83 | NE | 10 | 4.5 | | | 10s | | NE | 2.23 | 56.6 | Threatening | |
| Barnegat, New Jersey | 30.12 | 765.0 | 30.14 | 765.5 | 39 | 3.9 | 100 | NE | 28 | 12.5 | | | 10n | | Calm | 0.43 | 10.9 | Heavy rain | |
| Bismarck, Dakota | 27.90 | 708.6 | 29.75 | 755.6 | 36 | 2.2 | 100 | N | 2 | 0.9 | | | 10s | | N | 0.08 | 2.0 | Cloudy | |
| Boise City, Idaho | 27.14 | 689.3 | 30.02 | 762.5 | 32 | 0.0 | 79 | S | 2 | 0.9 | | 0 | 2s | | Calm | 0 | 0 | Fair | |
| Boston, Massachusetts | 30.19 | 766.8 | 30.35 | 770.9 | 34 | 1.1 | 70 | NE | 16 | 7.2 | | | 10s | | NE | 0.07 | 1.8 | Cloudy | |
| Brackettville, Texas | 28.66 | 728.0 | 29.66 | 753.4 | 45 | 7.2 | 60 | NE | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 28.73 | 729.7 | 29.74 | 755.4 | 34 | 1.1 | 90 | E | 10 | 4.5 | | | 10n | | Calm | 0.08 | 2.0 | Light rain | |
| Brownsville, Texas | 29.78 | 756.4 | 29.85 | 758.2 | 64 | 17.8 | 94 | Calm | 0 | 0 | | 0 | Fog | | | 0 | 0 | Foggy | |
| Buffalo, New York | 29.27 | 743.4 | 29.98 | 761.5 | 38 | 3.3 | 100 | NE | 1 | 0.4 | | | 10s | | Calm | Inap. | Inap. | Cloudy | |
| Burkes, Arizona | | | | | 44 | 6.7 | 51 | NW | | | | 0 | 0 | | | 0 | 0 | Clear | |
| Burlington, Vermont | 29.97 | 761.2 | 30.24 | 768.1 | 38 | 3.3 | 54 | SE | 8 | 3.6 | | | 10s | | Calm | 0.04 | 1.0 | Cloudy | |
| Cairo, Illinois | 29.32 | 744.7 | 29.70 | 754.4 | 55 | 12.8 | 74 | N | 4 | 1.8 | | 8c | 0 | Calm | | 0 | 0 | Fair | |
| Camp Grant, Arizona | 25.10 | 637.5 | 29.90 | 759.4 | 40 | 4.4 | 25 | SE | | | 1 | 0 | 0 | | | 0 | 0 | Clear | |
| Camp Verde, Arizona | 26.69 | 677.9 | 30.18 | 766.6 | 37 | 2.8 | 53 | W | | | | 0 | 0 | | | 0 | 0 | Clear | |
| Campo, California | 27.30 | 693.4 | 29.87 | 758.7 | 33 | 0.6 | 89 | E | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.04 | 763.0 | 30.04 | 763.0 | 61 | 16.1 | 94 | SE | 10 | 4.5 | | 5cs | 5ks | SW | SW | Inap. | Inap. | Cloudy | |
| Cape Henry, Virginia | 29.97 | 761.2 | 30.00 | 762 0 | 61 | 16.1 | 94 | S | 6 | 2.7 | | | 10s | | S | 0.01 | 0.3 | Cloudy | |
| Cape Lookout, N. Carolina | 30.00 | 762.0 | 30.02 | 762.5 | 62 | 16.7 | 94 | S | 16 | 7.2 | | | 10s | | SW | 0.15 | 3.8 | Cloudy | |
| Cape May, New Jersey | 30.00 | 762.0 | 30.03 | 762.7 | 44 | 6.7 | 92 | NE | 26 | 11.6 | | | 10n | | | 0.78 | 19.8 | Heavy rain | |
| Charleston, South Carolina | 29.88 | 758 9 | 29.95 | 760.7 | 66 | 18.9 | 89 | SE | 7 | 3.1 | | 10cs | 0 | W | | 0.04 | 1.0 | Cloudy | |
| Cheyenne, Wyoming | 23.75 | 603.2 | 29.69 | 754.1 | 22 | — 5.6 | 72 | NW | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Chicago, Illinois | 29.13 | 739 9 | 29.82 | 757.4 | 44 | 6.7 | 92 | E | 6 | 2.7 | | | Fog | | | 0 | 0 | Foggy | |
| Cincinnati Ohio | 29.13 | 739.9 | 29.70 | 755.9 | 56 | 13.3 | 84 | E | 2 | 0.9 | | | 10s | | SW | Inap. | Inap. | Cloudy | |
| Cleveland, Ohio | 29.21 | 741.9 | 29.95 | 760.7 | 37 | 2.8 | 90 | NE | 8 | 3.6 | | | 10s;fg | | Calm | 0 | 0 | Threatening | |
| Concho, Texas | 27.86 | 707.6 | 29.58 | 751.3 | 38 | 3.3 | 30 | W | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Corsicana, Texas | 29.28 | 743.7 | 29.74 | 755.4 | 50 | 10.0 | 79 | W | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Davenport, Iowa | 29.18 | 741.2 | 29.81 | 757.2 | 47 | 8.3 | 70 | E | 2 | 0.9 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| Deadwood, Dakota | 25.13 | 638.3 | | | 23 | — 5.0 | 86 | SE | 1 | 0.4 | | | 10s | | NW | 1.70 | 43.2 | Cloudy | |
| Denison, Texas | 28.92 | 734.6 | 29.71 | 754 6 | 48 | 8.9 | 43 | NW | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Denver, Colorado | 24.53 | 623.0 | 29.75 | 755.6 | 28 | — 5.0 | 73 | SE | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Detroit, Michigan | 29.27 | 743.4 | 29.94 | 760.5 | 41 | 5.0 | 91 | NE | 6 | 2.7 | | | 10s | | Calm | 0.01 | 0.3 | Cloudy | |
| Dodge City, Kansas | 27.70 | 693.9 | 29.56 | 750.8 | 27 | — 2.8 | 76 | N | 7 | 3.1 | | 0 | 2s | | Calm | 0 | 0 | Clear | |
| Dubuque, Iowa | 29.12 | 739.6 | 29.82 | 757.4 | 45 | 7.2 | 76 | Calm | 0 | 0 | | 1c | Fog | Calm | Calm | 0 | 0 | Fair | |
| Duluth, Minnesota | 29.23 | 742.4 | 29.92 | 760.0 | 37 | 2.8 | 95 | NE | 26 | 11.6 | | | 10n | | NE | 0.08 | 2.0 | Light rain | |
| Eagle Pass, Texas | 29.05 | 737.9 | 29.80 | 756.9 | 46 | 7.8 | 84 | Calm | 0 | 0 | | | | | | 0 | 0 | Clear | |
| Eastport, Maine | 30.34 | 770.6 | 30.41 | 772.4 | 26 | — 3.3 | 81 | NE | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.23 | 742.4 | 29.96 | 761.0 | 30 | 3.9 | 91 | NE | 10 | 4.5 | | 0 | 0 | | | 0 | 0 | Cloudy | |
| Escanaba, Michigan | 29.39 | 746.5 | 30.06 | 763.5 | 33 | 0.6 | 89 | NE | 6 | 2.7 | | | 10s | | | 0 | 0 | Cloudy | |
| Florence, Arizona | 28.25 | 717.5 | 29.85 | 758.2 | 40 | 4.4 | 56 | Calm | | | | | Fog | | | Inap. | Inap. | Dense fog | |
| Fort Bayard, New Mexico | 24.00 | 609.6 | 30.00 | 762.0 | 33 | 0.6 | 43 | NW | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.38 | 644.6 | | | 29 | — 1.7 | 45 | NW | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.10 | 739.1 | 29.64 | 752.8 | 46 | 7.8 | 84 | E | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.53 | 724.6 | 29.82 | 757.4 | 39 | 3.9 | 46 | NW | 1 | 0.4 | | 2cs | 0 | Calm | | 0.02 | 0.5 | Clear | |
| Fort St. Michael, Alaska | 29.78 | 756.4 | 29.82 | 757.4 | —36 | —37.8 | 100 | S | 0.5 | 0.2 | | 0 | 0 | | | 0 | 0 | Fair | |
| Fort Sill, Indian Territory | 28.54 | 724.9 | 29.66 | 753.4 | 43 | 6.1 | 58 | N | 5 | 2.2 | | 0 | 2s | | | 0 | 0 | Clear | |
| Galveston, Texas | 29.79 | 756.7 | 29.83 | 757.7 | 61 | 16.1 | 94 | W | 6 | 2.7 | | | Fog | | Calm | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.29 | 744.0 | 29.93 | 760.2 | 47 | 8.3 | 85 | E | 14 | 6.3 | | | 10s | | Calm | 0 | 0 | Foggy | |
| Indianapolis, Indiana | 28.99 | 736.3 | 29.76 | 755.9 | 48 | 8.9 | 93 | NE | 8 | 3.6 | | 8cs | Sm'e | Calm | Calm | 0 | 0 | Cloudy | |
| Indianola, Texas | 29.84 | 757.9 | 29.86 | 758.4 | 64 | 17.8 | 89 | SW | 11 | 4.9 | | 10k | 0 | SW | | 0 | 0 | Fair | |
| Jacksboro, Texas | 28.64 | 727.4 | 29.78 | 756.4 | 43 | 6.1 | 36 | W | 7 | 3.1 | | | 0 | | | 0 | 0 | Clear | |
| Jacksonville, Florida | 29.85 | 758.2 | 29.87 | 758.7 | 67 | 19.4 | 84 | SE | 8 | 3.6 | | 8k | 0 | Calm | | 0.63 | 16.0 | Cloudy | |
| Keokuk, Iowa | 29.10 | 730.1 | 29.71 | 754.6 | 47 | 8.3 | 77 | E | 6 | 2.7 | | 1c | 0 | Calm | | 0 | 0 | Clear | |
| Key West, Florida | 29.94 | 760.5 | 29.98 | 761.5 | 75 | 23.9 | 90 | E | 8 | 3.6 | | 2c | Fog | Calm | E | 0 | 0 | Foggy | |
| Kittyhawk, North Carolina | 29.99 | 761 7 | 30.01 | 762.2 | 58 | 14.4 | 94 | SE | 17 | 7.6 | | 2cs | 2s | W | W | 0.10 | 2.5 | Fair | |
| Knoxville, Tennessee | 28.80 | 731.5 | 29.82 | 757.4 | 55 | 12.8 | 98 | E | 2 | 0.9 | | | 10n | | SW | 0.19 | 4.8 | Heavy rain | |
| La Crosse, Wisconsin | 29.09 | 738.9 | 29.82 | 757.4 | 46 | 7.8 | 77 | S | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 25.95 | 659.1 | 30.10 | 764.5 | 33 | 0.6 | 79 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Laredo, Texas | 29.42 | 747.3 | 29.75 | 755.6 | 65 | 18.3 | 89 | Calm | 0 | 0 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 28.82 | 732.0 | 29.65 | 753.1 | 47 | 8.3 | 92 | NW | 4 | 1.8 | | 5k | 5ks | S | NW | 0.18 | 3.8 | Cloudy | |
| Los Angeles, California | 29.58 | 751.3 | 29 93 | 760.2 | 48 | 8.9 | 93 | NE | 5 | 2.2 | | | Fog | | Calm | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.18 | 741.2 | 29.72 | 754.9 | 52 | 11.1 | 86 | NE | 4 | 1.8 | | 0 | 10s | | NE | 0 | 0 | Cloudy | |
| Lynchburg, Virginia | 29.27 | 743 4 | 29.94 | 760.5 | 59 | 15.0 | 81 | NE | 4 | 1.8 | | | 10n | | Calm | 1.53 | 38.9 | Light rain | |
| Marquette, Michigan | 29.32 | 744.7 | 30.03 | 762.7 | 39 | 3.9 | 73 | E | 8 | 3.6 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| Mason, Texas | 28.19 | 716.0 | 29.96 | 761.0 | 45 | 7.2 | 31 | NW | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.40 | 746.7 | 29.72 | 754.9 | 56 | 13.3 | 68 | NE | 2 | 0.9 | | Haze | 5s;hz | Calm | Calm | 0 | 0 | Fair | |
| Milwaukee, Wisconsin | 29.22 | 742.0 | 29.92 | 760.0 | 39 | 3.9 | 100 | E | 9 | 4.0 | | | Fog | | | 0 | 0 | Dense fog | |
| Mobile, Alabama | 29.75 | 755.6 | 29.89 | 759.0 | 66 | 18.9 | 95 | S | 4 | 1.8 | | | 10cs | | W | 0.05 | 1.3 | Cloudy | |
| Montgomery, Alabama | 29.54 | 750.3 | 29.77 | 756.1 | 65 | 18.3 | 89 | S | 7 | 3.1 | | | 10s | | SW | 0.54 | 13.7 | Threatening | |
| Morgantown, West Virginia | 28.83 | 732 3 | 29.86 | 758.4 | 58 | 14.4 | 76 | E | 6 | 2.7 | | 10c | 0 | W | | 0.41 | 10.4 | Cloudy | |
| Mt. Washington, N. H. | 23.84 | 605.5 | 29.29 | 741.7 | 31 | — 0.6 | 100 | SW | 9 | 4.0 | | | Fog | | SW | 0.11 | 2.8 | Foggy | |
| Nashville, Tennessee | 29.21 | 741.9 | 29.73 | 755.1 | 60 | 15.6 | 91 | SE | 10 | 4.5 | | | 10n | | S | 0.24 | 6.1 | Light rain | |
| New Haven, Connecticut | 30.13 | 765.3 | 30.25 | 768.3 | 34 | 1.1 | 90 | NE | 12 | 5.4 | | | 10n | | | 0.17 | 4.3 | Light rain | |
| New London, Connecticut | 30.23 | 767.8 | 30.28 | 769.1 | 34 | 1.1 | 100 | NE | 10 | 4.5 | | | 10n | | E | 0.32 | 8.1 | Light rain | |
| New Orleans, Louisiana | 29.74 | 755.4 | 29.80 | 756 9 | 66 | 18.9 | 89 | SW | 6 | 2.7 | | 0 | 0 | | | 0.02 | 0.5 | Clear | |
| Newport, Rhode Island | 30.25 | 768.3 | 30.30 | 769.6 | 36 | 2.2 | 80 | NE | 4 | 1.8 | | | 10ks | | NE | 0.38 | 9.7 | Threatening | |
| New York, New York | 30.02 | 762.7 | 30.21 | 767.3 | 37 | 2.8 | 90 | NE | 20 | 8.9 | | | Fog | | NE | 0.37 | 9.4 | Foggy | |
| Norfolk, Virginia | 29.95 | 760.7 | 30.02 | 762.5 | 62 | 16.7 | 94 | W | 4 | 1.8 | | | 10s | | W | 0.10 | 2.5 | Cloudy | |
| North Platte, Nebraska | 26.86 | 682.2 | 29.48 | 748.8 | 30 | — 1.1 | 78 | NW | 10 | 4.5 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Olympia, Washington Ter. | 29.85 | 758.2 | 29.89 | 759.2 | 43 | 6.1 | 100 | S | 2 | 0.9 | | | Fog | | Calm | 0 | 0 | Foggy | |
| Omaha, Nebraska | 28.58 | 725.9 | 29.65 | 753.1 | 38 | 3.3 | 91 | W | 6 | 2.7 | | | 10s | | Calm | 0.32 | 8.1 | Cloudy | |
| Oswego, New York | 29.76 | 755.9 | 30.09 | 764.3 | 45 | 7.2 | 68 | SE | 12 | 5.4 | | | 10s | | Calm | 0.03 | 0.8 | Cloudy | |
| Pembina, Dakota | 28.97 | 735.8 | 29.81 | 757.2 | 34 | 1.1 | 90 | SE | 7 | 3.1 | | | 5s | | Calm | 0.12 | 3.0 | Fair | |
| Philadelphia, Pennsylvania | 30.08 | 764.0 | 30.14 | 765.5 | 38 | 3.3 | 100 | NE | 32 | 14.3 | | | 10n | | NE | 0.45 | 11.4 | Light rain | |
| Phœnix, Arizona | 28.75 | 730.2 | 30.59 | 777.0 | 43 | 6.1 | 59 | Calm | | | | 0 | 0 | | | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.39 | 441.7 | 29.80 | 751.8 | — 5 | —20.6 | 63 | N | 14 | 6.3 | | 5ck | 0 | W | | 0.06 | 1.5 | Fair | |
| Ploche, Nevada | 23.95 | 608.3 | 29.72 | 754.9 | 28 | — 2.2 | 77 | N | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.09 | 738.9 | 29.89 | 759.2 | 54 | 12.2 | 87 | NE | 3 | 1.3 | | | 10ks | | NW | 0.36 | 9.1 | Cloudy | |
| Port Huron, Michigan | 29.29 | 744.0 | 29.96 | 761.0 | 37 | 2.8 | 100 | N | 8 | 3.6 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Portland, Maine | 30.32 | 770.1 | 30.37 | 771.4 | 38 | 3.8 | 54 | E | 10 | 4.5 | | 8k;cs | 2s | NW | Calm | 0 | 0 | Cloudy | |
| Portland, Oregon | 29.92 | 760.0 | 30.03 | 762.7 | 44 | 6.7 | 92 | SE | 4 | 1.8 | | | 10n | | Calm | 0.06 | 1.5 | Light rain | |
| Prescott, Arizona | 24.68 | 626.9 | 30.04 | 763.0 | 29 | — 1.7 | 14 | Calm | | | | 0 | 0 | | | 0 | 0 | Clear | |
| Punta Rassa, Florida | 29.96 | 761.0 | 29.98 | 761.5 | 72 | 22.1 | 90 | SE | 6 | 2.7 | | | 10s | | SE | 0.02 | 0.5 | Cloudy | |
| Red Bluff, California | 29.64 | 752.8 | 30.01 | 762.2 | 47 | 8.3 | 85 | NW | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Rochester, New York | 29.37 | 746.0 | 29.99 | 761.7 | 44 | 6.7 | 84 | SE | 8 | 3.6 | | | 10s | | Calm | Inap. | Inap. | Cloudy | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer. Corrected for instrum't'l error and temperature. Inches. | Barometer. Corrected for instrum't'l error and temperature. Millimeters | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roseburg, Oregon | 29.45 | 748.0 | 30.02 | 762.5 | 47 | 8.3 | 88 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Sacramento, California | 29.91 | 759.7 | 29.99 | 761.7 | 49 | 9.4 | 93 | SE | 3 | 1.3 | ..... | 1k | 0 | NW | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.17 | 740.9 | 29.74 | 755.4 | 49 | 9.4 | 78 | N | 6 | 2.7 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| St. Marks, Florida | 29.81 | 757.2 | 29.83 | 757.7 | 63 | 17.2 | 94 | SE | 14 | 6.3 | ..... | 2cs | 8s | Calm | SE | 1.42 | 36.1 | Fair | |
| St. Paul, Minnesota | 28.89 | 733.8 | 29.71 | 754.6 | 45 | 7.2 | 84 | E | 13 | 5.8 | ..... | 0 | 2ks | ..... | Calm | 0.04 | 1.0 | Fair | |
| St. Paul's Island, Alaska | | | | | | | | | | | | | | | | | | | |
| Salt Lake City, Utah | 25.59 | 650.0 | 29.92 | 760.0 | 35 | 1.7 | 70 | NE | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| San Antonio, Texas | 29.12 | 739.6 | 29.70 | 754.4 | 52 | 11.1 | 93 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Diego, California | 29.88 | 758.9 | 29.95 | 760.7 | 56 | 13.3 | 81 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 29.28 | 743.7 | 29.97 | 761.2 | 37 | 2.8 | 90 | E | 22 | 9.8 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Sandy Hook, New Jersey | 30.17 | 766.3 | 30.19 | 766.8 | 38 | 3.3 | 91 | NE | 27 | 12.1 | ..... | ..... | 10n | ..... | ..... | 0.67 | 17.0 | Light rain | |
| San Francisco, California | 29.97 | 761.2 | 30.04 | 763.0 | 50 | 10.0 | 86 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Santa Fé, New Mexico | 23.05 | 585.5 | 29.59 | 751.6 | 22 | — 5.6 | 58 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 29.81 | 757.2 | 29.90 | 759.4 | 65 | 18.3 | 84 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | S | 0.06 | 1.5 | Cloudy | |
| Shreveport, Louisiana | 29.58 | 750.0 | 29.74 | 755.4 | 55 | 12.8 | 87 | S | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 29.96 | 761.0 | 29.99 | 761.7 | 63 | 17.2 | 100 | S | 15 | 6.7 | ..... | ..... | 10s | ..... | S | 0.38 | 8.4 | Cloudy | |
| Springfield, Massachusetts | 30.11 | 764.8 | 30.25 | 768.3 | 36 | 2.2 | 71 | NE | 3 | 1.3 | ..... | ..... | 10s | ..... | NE | 0.31 | 7.9 | Cloudy | |
| Stockton, Texas | 26.84 | 681.7 | 29.84 | 757.9 | 34 | 1.1 | 27 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 30.31 | 769.9 | 30.36 | 771.1 | 37 | 2.8 | 63 | SE | 12 | 5.4 | ..... | 8cs | 2s | SE | SE | 0 | 0 | Cloudy | |
| Toledo, Ohio | 29.25 | 742.9 | 29.93 | 760.2 | 41 | 5.0 | 91 | E | 12 | 5.4 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Tucson, Arizona | | | | | 36 | 2.2 | 52 | SE | | | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tybee Island, Georgia | 29.87 | 758.7 | 29.90 | 759.4 | 63 | 17.2 | 88 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Umatilla, Oregon | 29.67 | 753.6 | | | 36 | 2.2 | 71 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Vicksburg, Mississippi | 29.52 | 749.8 | 29.78 | 756.4 | 58 | 14 4 | 76 | SW | 4 | 1.8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Virginia City, Montana | 24.08 | 611.6 | 29.56 | 750.8 | 27 | — 2.8 | 88 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.08 | 2.0 | Cloudy | |
| Visalia, California | 29.04 | 752.8 | 30.02 | 762.5 | 47 | 8.3 | 92 | Calm | 0 | 0 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Washington, D. C | 29.98 | 761.5 | 30.10 | 764.5 | 41 | 5.0 | 91 | NE | 14 | 6.3 | ..... | ..... | 10s | ..... | NE | 1.07 | 27.2 | Cloudy | |
| Wickenburg, Arizona | | | | | 35 | 1.7 | 61 | N | | | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 29.90 | 759.4 | 29.98 | 761.5 | 64 | 17.8 | 94 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | SE | 1.28 | 32.5 | Cloudy | |
| Winnemucca, Nevada | 25.61 | 650.5 | 29.97 | 761.2 | 28 | — 2.2 | 77 | NE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wood's Holl, Mass | 30.26 | 768.6 | 30.32 | 770.1 | 36 | 2.2 | 90 | SE | 15 | 6.7 | ..... | ..... | 10s; fg | ..... | Calm | 0.28 | 7.1 | Cloudy | |
| Yankton, Dakota | 28.42 | 721.9 | 29.73 | 755.1 | 32 | 0.0 | 84 | NW | 7 | 3.1 | ..... | 10cs | 0 | NW | ..... | 0.01 | 0.3 | Cloudy | |
| Yuma, Arizona | 29.69 | 754.1 | 29.85 | 758.2 | 66 | 13.3 | 57 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A | 30.00 | 762.0 | 30.06 | 763.5 | 10.0 | —12.2 | 90 | E | 12 | 5.4 | ..... | 3ck | 0 | E | ..... | 0.02 | 0.5 | Fair | J. Fortescue, W. Wood |
| Havana, Cuba, W. I | 29.93 | 760.2 | 29.95 | 760.7 | 77 | 25.0 | 90 | SE | 2.4 | 1.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | 30.08 | 764.0 | 30.09 | 764.3 | 77 | 25.0 | 90 | Calm | 0 | 0 | ..... | 2c | 0 | SE | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I | 29.90 | 759.4 | 29.98 | 761.5 | 80 | 26.7 | ..... | NE | 12 | 5.4 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | F. M. Everett. |
| Paramaribo, D. Guiana, S. A | ..... | ..... | 30.00 | 762.0 | 79 | 26.1 | 91 | NE | ..... | ..... | 3 | ..... | 10n | ..... | ..... | 0.470 | 11.94 | Raining | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | 30.06 | 763.5 | 30.07 | 763.7 | 83.3 | 28.5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | Dr. H. Groot. |
| Medellin, Colombia, S. A | 25.18 | 639.6 | ..... | ..... | 71.0 | 21.7 | 79 | Calm | ..... | ..... | 0 | 0 | 4ks | ..... | ..... | 0 | 0 | ..... | Thomas Herran |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Mukuwao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,700 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m., Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,888 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,692 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,100.7 ft., or 4,313.1 m.; Pioche, 5,776.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,862.2 ft., or 1,329.6 m.; Santa Fé, 6,802.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.6 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.16 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.38 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | BAROMETER. As read off. Inches. | BAROMETER. As read off. Millimeters. | BAROMETER. Attached Thermometer. Fahrenheit. | BAROMETER. Attached Thermometer. Centigrade. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er —10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Up'er From— | CLOUDS. Direction. Low'r From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | SEA-SWELL. Character. | SEA-SWELL. Direction from— | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.96 | 761.0 | 50 | 10.0 | 47 | 8.3 | 92 | W | 9 | 4.0 | .... | ..... | 2 | ..... | W | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Pensacola, Fla. | 29.95 | 760.7 | 66 | 18.9 | 65 | 18.3 | 100 | SW | 19 | 8.5 | .... | ..... | 8 | ..... | SE | 0.43 | 10.9 | ..... | ..... | Cloudy..... | |
| Navy Yard, Portsmouth, N.H | 30.39 | 771.9 | 69 | 20.6 | 35 | 1.7 | 70 | NE | 3 | 1.3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Naval Hospital, Yokohama, Japan..... | 29.88 | 758 9 | 56 | 13.3 | 44.5 | 6.9 | 64 | N | .... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Adams. Panama..... | 29.91 | 759.7 | 82 | 27.8 | 81 | 27.2 | 87 | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Alliance, Piraeus, Greece..... | 30.12‡ | 765.0‡ | ..... | ..... | 56 | 13.3 | 75 | S | ..... | ..... | 1-2 | ..... | 10 | ..... | S | ..... | ..... | ..... | ..... | Overcast..... | |
| Ashuelot. Shanghai, China ..... | 30.54* | 775.7* | 50 | 10.0 | 43 | 6.1 | 67 | NE | ..... | ..... | 2 | ..... | 6 | ..... | Calm | ..... | ..... | ..... | ..... | D. clouds..... | |
| Canonicus, New Orleans, La..... | 29.83 | 757.7 | 50 | 10.0 | 67 | 19.4 | 95 | SSW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Pleasant..... | |
| Colorado, New York, N. Y..... | 30.19‡ | 766.8‡ | ..... | ..... | 37 | 2.8 | 90 | NE | 5 | 2.2 | ..... | ..... | 10 | ..... | ENE | 0.24 | 6.1 | ..... | ..... | Light rain.. | |
| Constitution, N. 42° 00′ W. 44° 50′..... | 29.57‡ | 751.1‡ | ..... | ..... | 46 | 7.8 | 77 | NW | ..... | ..... | 8 | ..... | 5 | ..... | NW | ..... | ..... | Rough | NW | Fair..... | |
| Despatch, Constantinople, Turkey. | 30.30 | 769.6 | 74 | 23.3 | 51 | 10.6 | 79 | SW | ..... | ..... | 3 | ..... | 2 | ..... | SW | ..... | ..... | ..... | ..... | Clear. ..... | |
| Enterprise, New Orleans, La..... | 29.82‡ | 757.4‡ | ..... | ..... | 67 | 19.4 | 89 | W | ..... | ..... | 2 | ..... | 8? | ..... | S | ..... | ..... | ..... | ..... | Clear..... | |
| Franklin, Norfolk, Va..... | 30.07‡ | 763.8‡ | ..... | ..... | 63 | 17.2 | 89 | Calm | 0 | 0 | ..... | ..... | 9 | ..... | ..... | 0.5 | 13. | ..... | ..... | Cloudy..... | |
| Gettysburg Valetta, Malta..... | 30.01‡ | 762.2‡ | ..... | ..... | 61 | 16.1 | 100 | NW | ..... | ..... | 3 | ..... | 5 | ..... | N | Blank | Blank | ..... | ..... | Fair..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.04 | 763.0 | 73 | 22.8 | 72 | 22.2 | 71 | NNE | ..... | ..... | 4 | ..... | 2 | ..... | NNE | ..... | ..... | Mod'ate Ground | NW | Fair..... | |
| Marion, Piraeus, Greece..... | 30.12 | 765 0 | 58 | 14.4 | 58 | 14.4 | 58 | S | ..... | ..... | 2 | ..... | 10 | ..... | S | 0 | 0 | ..... | ..... | Cloudy..... | |
| Michigan, Erie, Pa..... | 29.47 | 748.5 | 65 | 18.3 | 47 | 8.3 | 85 | NE | ..... | ..... | 3 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monongahela. Hong-Kong, China..... | 30.26* | 768.6* | 68 | 20.0 | 68 | 20.0 | 70 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Hazy..... | |
| New Hampshire, Port Royal, S. C..... | 30.08 | 764 0 | 67 | 19.4 | 66 | 18.9 | 84 | SE | 14 | 6.3 | ..... | ..... | 10 | ..... | SE | 0 | 0 | ..... | ..... | Cloudy..... | |
| Omaha, S. 5° 30′, W. 30° 04′..... | 30.08* | 764.0* | 85 | 29.4 | 83.5 | 28.6 | 77 | SE | 5 | 2.2 | ..... | ..... | 4 | ..... | SE | 0 | 0 | Mod'ate | E | Pleasant..... | |
| Onward, Callao, Peru..... | 29.98† | 761.5† | ..... | ..... | 73 | 22.2 | 85 | SSE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, N. 19° 33,′ W. 95° 59′..... | 29.80‡ | 756.9‡ | ..... | ..... | 74 | 22.8 | 95 | NNW | ..... | ..... | 1 | ..... | 5 | ..... | NNW | ..... | ..... | Long | NE | Foggy..... | |
| Palos, Shanghai, China..... | 30.58* | 776.7* | 64 | 17.8 | 43 | 6.1 | 67 | NE | ..... | ..... | 2 | ..... | 0? | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Pensacola, Honolulu, H. I..... | 30.19 | 766.8 | 74 | 23.3 | 71 | 21.7 | 85 | NE | 4 | 1.8 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear ..... | |
| Plymouth. Norfolk, Va..... | 29.90‡ | 759.4‡ | ..... | ..... | 65 | 18.3 | 89 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | |
| Powhatan, N. 20° 22′, W. 74° 15′..... | 30.05‡ | 763.3‡ | ..... | ..... | 79 | 26.1 | 95 | NE | 6.0 | 2.7 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Smooth | ..... | Pleasant..... | |
| Ranger. Amoy, China..... | 30.45* | 773.4* | ..... | ..... | 58 | 14.4 | 70 | NE | ..... | ..... | 4-6 | ..... | 10 | ..... | NE | ..... | ..... | Smooth | ..... | Squally ..... | |
| Rio Bravo, Brownsville, Texas..... | ..... | ..... | ..... | ..... | 63 | 17.2 | 100 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Foggy ..... | |
| Santee, Annapolis, Md..... | 30.08* | 764.0* | 43 | 6.1 | 41 | 5.0 | 91 | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.11 | 2.8 | ..... | ..... | Cloudy..... | |
| Saratoga, Washington, D. C..... | 30.02* | 762.5* | ..... | ..... | 42 | 5.6 | 100 | SSW | ..... | ..... | 3 | ..... | 10 | ..... | Calm | Heavy | Heavy | ..... | ..... | Overcast..... | |
| St. Louis, League Island, Pa ..... | 30.03 | 762.7 | 64 | 17.8 | 41 | 5.0 | 91 | NE | 15 | 6.7 | ..... | ..... | 10 | ..... | NE | 0.84 | 21.3 | ..... | ..... | Raining..... | |
| Supply, N. 49° 55′ W. 19° 30′..... | 30.50 | 774.7 | 56 | 13.3 | 54 | 12.2 | 80 | SSE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Mod'ate | SW | Cloudy..... | |
| Swatara, N. 11° 30′ W. 74° 10′..... | 29.95* | 760.7* | ..... | ..... | 80 | 26 7 | 96 | E | ..... | ..... | 5 | ..... | 4 | ..... | E | ..... | ..... | Rough | E | D. clouds..... | |
| Tennessee, N. 2° 35′, E. 104° 57′..... | 30.02* | 762.5* | 84 | 28.9 | 82 | 27.8 | 87 | NE | 3 | 1.3 | ..... | ..... | 6 | ..... | NE | 0 | 0 | Slight | NE | D. clouds..... | |
| Trenton, Smyrna, Turkey..... | 30.22‡ | 767.6‡ | ..... | ..... | 60 | 15.6 | 71 | NW | ..... | ..... | 1 | ..... | 8 | ..... | NW | 0 | 0 | Smooth | ..... | Cloudy..... | |
| Tuscarora, N. 26° 42,′ W. 114° 45′..... | 30.02 | 762.5 | 62 | 16.7 | 60 | 15.6 | 76 | NW | ..... | ..... | 3 | ..... | 8 | ..... | Calm | 0 | 0 | Mod'ate | NW | Fair ..... | |
| Vandalia, Piraeus, Greece..... | 30.07‡ | 763.8‡ | ..... | ..... | 57 | 13.9 | 63 | S | ..... | ..... | 2 | ..... | 10 | ..... | S | ..... | ..... | ..... | ..... | Threatening | |
| Wabash, Boston, Mass..... | 30.37‡ | 771.4‡ | ..... | ..... | 42 | 5.6 | 58 | E | 12 | 5.4 | ..... | ..... | 10 | ..... | Calm | 0.06 | 1.5 | ..... | ..... | Cloudy..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

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

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the air. | | Relative Humidity. | Wind. | | | Force. | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | | Amount. | | Direction. | | Character. | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Panama, N. 47°, W. 125° | | | 29.88† | 758.9† | | | | WSW | | | 4 | | 8 | | SE | | SW | Variable.... | Capt. Cobb. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Tokio, N. 30° 20', E. 128° 55' | | | | | 60 | 15.6 | | NNW | | | 7 | | 7 | | WNW | Smooth | NNW | D. clouds.... | Capt. Dearborn. |
| S. S. Colima, N. 19° 58', W. 105° 34' | | | 29.81† | 757.2† | 68 | 20.0 | 90 | | | | 2 | | 3 | | SE | Small easy | NW | Misty..... | Capt. Maury. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, N. 48° 02', W. 40° 29' | | | 28.93† | 736.3† | 35 | 1.7 | ?? | WSW | | | 7 | | 10k | | WSW | High | SW | Squally..... | Capt. W. H. Thompson |
| S. S. Celtic, Mersey River | | | 30.38† | 771 6† | 52 | 11.1 | 79 | S | | | 2 | | 10 | NW | | | | Overcast.... | Capt. B. Gleadell. |
| S. S. Germanic, Off Queenstown, Ireland | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

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

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

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic | | | | | | | | | | | | | | | | | | | Capt. John Metcalf. |
| S. S. Gaelic, N. 31° 00', E. 160° 30' | | | 30.07† | 763.8† | 65 | 18.3 | ?? | WNW | | | 5 | | ks | | SW | Swell | W | D. clouds.... | Capt. W. H. Kidley |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—CONTINUED.

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

| NAME OF VESSELS. | TRUE COURSE TOWARD— | HOURLY RATE IN KNOTS. | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | SEA-SWELL. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | Character | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois, N. 43° 05′, W. 44° 09′ | | | 29.42* | 747.3* | 44 | 6.7 | 92 | W | | | 8 | | 5 | | W | Heavy | W | Hail-squalls | Captain Shackelford. |
| S. S. Indiana, Philadelphia, Pa | | | 30.09† | 764.3† | 43 | 6.1 | ?? | NE | | | 4 | | 8 | | E | | | Cloudy | Captain Sargent. |
| S. S. Ohio, Liverpool | | | 30.39 | 771.9 | 53 | 11.7 | 93 | Calm | | | 0 | | 10 | | Calm | | | Hazy | Captain Morrison. |
| S. S. Pennsylvania, N. 48° 59′, W. 45° 13′ | | | 28.80 | 731.5 | 40 | 4.4 | 91 | S | | | 2 | | 2 | | S | Large | S;NE | Clear | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid †Aneroid; unreliable, corrected for elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland, N. 40° 53′, W. 55° 54′ | | | 30.09* | 764.3* | | | | NNW | 30 | 13.4 | | | 9 | | N | Heavy | N | Cloudy | Capt. Jackson. Capt. Nichols. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

*Aneroid; regulated to standard at Antwerp.

**ALLAN LINE MARINE SERIES.**

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

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

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

**MARINE SERIES.** (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, N. 38° 37′ W. 73° 35′ | | | 30.00 | 762.0 | 53 | 11.7 | 93 | Calm | 0 | 0 | | | Fog | | | Swell | N | Dense fog | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 30.18 | 766.6 | —38 | —38.9 | 86* | Calm | 0 | 0 | | | 10s | | Calm | | | Cloudy | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Determined by use of hair hygrometer.

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

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

Albert J. Myer

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

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 13, 1878.

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

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

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

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

## ALGERIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.12 | 765.0 | 62.8 | 17.1 | ..... | NE | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Dr. Ollive. |
| Nemours | ..... | ..... | 30.09 | 764.2 | 64.0 | 17.8 | 68 | NNW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Michel. |
| Algiers | ..... | ..... | 30.08 | 764.0 | 61.9 | 16.6 | 67 | ENE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Towilliere. |
| La Calle | ..... | ..... | 30.0₂ | 763.0 | 60.6 | 15.9 | 71 | NW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Boulangeot. |
| Tunis | ..... | ..... | 30.02 | 762.4 | 64.9 | 18.3 | 50 | NW | ..... | ..... | 8 | ..... | 7 | ..... | ..... | 0 | 0 | Very cloudy | Jacques. |
| Sfax | ..... | ..... | 30.05 | 764.0 | 75.2 | 24.0 | ..... | W | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair. | Gau. |
| Saida | ..... | ..... | 30.09 | 764.3 | 75.6 | 24.2 | 90 | NNE | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Herbin. |
| Tebessa | ..... | ..... | 30.21 | 767.4 | ..... | ..... | ..... | NW | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Bourgeois. |
| Geriville | ..... | ..... | 30.18 | 766.6 | 57.2 | 14.0 | 86 | NW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.08 | 2. | Covered | Lemaillot. |
| Laghouat | ..... | ..... | 30.16 | 766.1 | 68.0 | 20.0 | 55 | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Guyot. |
| Biskra | ..... | ..... | 30.10 | 764.6 | 78.8 | 26.0 | 36 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,380? m.; or 4,461.7? ft.

## AUSTRIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.19 | 741.4 | 29.75 | 755.7 | 41.0 | 5.0 | 56 | NE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | Inap. | Inap. | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 28.93 | 734.8 | 29.72 | 754.9 | 33.4 | 1.8 | 67 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.055 | 1.4 | ..... | Dr. Wierzbiski. |
| Eperies | 28.74 | 730.1 | 29.65 | 753.0 | 36.7 | 2.6 | 62 | NW | ..... | ..... | 3 | ..... | 10k;s | ..... | ..... | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.52 | 724.3 | 29.79 | 756.7 | 40.6 | 4.8 | 44 | WNW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0.033 | 0.85 | ..... | Andreas Rospini. |
| Hermannstadt | 28.23 | 717.1 | 29.68 | 753.8 | 39.6 | 4.2 | 43 | WNW | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.47 | 723.2 | 29.86 | 758.4 | 35.6 | 2.0 | 75 | W | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0.276 | 7.0 | ..... | Prof. C. Wagner |
| Lemberg | 28.55 | 725.2 | 29.56 | 750.9 | 35.2 | 1.8 | 73 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.024 | 0.6 | ..... | Dr. T. Staneckl. |
| Pola | 29.02 | 737.4 | 29.73 | 755.2 | 52.9 | 11.6 | 63 | SSE | ..... | ..... | 1 | ..... | 5n;ks | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.21 | 741.8 | 29.68 | 753.8 | 43.2 | 6.2 | 59 | W | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0.028 | 0.7 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.45 | 747.9 | 29.73 | 755.1 | 44.6 | 7.0 | 50 | NW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0.035 | 0.90 | Thunder-storm. | Karl Stancel. |
| Trieste | 29.05 | 753.0 | 29.75 | 755.6 | 50.0 | 10.0 | 68 | NW | ..... | ..... | ..... | ..... | 1 | ..... | ..... | Inap. | Inap | Raining | P. Busin. |
| Vienna | 29.06 | 738.2 | 29.80 | 757.0 | 37.4 | 3.0 | 64 | WNW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0.094 | 2.4 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

## BELGIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.58 | 726.0 | 30.15 | 765.9 | 32.4 | 1.2 | 71 | NW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0.059 | 1.5 | ..... | Prof. M. Passau. |
| Brussels | 29.98 | 761.5 | 30.19 | 766.8 | 39.6 | 4.2 | 71 | WNW | ..... | ..... | 4 | ..... | 3 | ..... | N | 0.106 | 2.7 | ..... | Royal Observatory. |
| Furnes | 30.27 | 768.9 | 30.30 | 769.5 | 42.4 | 5.8 | 66 | NW | ..... | ..... | 5 | ..... | 9 | ..... | ..... | 0.063 | 1.6 | ..... | M. E. de Cae. |
| Maeseyck | 30.00 | 761.9 | 30.12 | 765.1 | 40.1 | 4.5 | 74 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.043 | 1.1 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

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

## BRITISH SERIES.

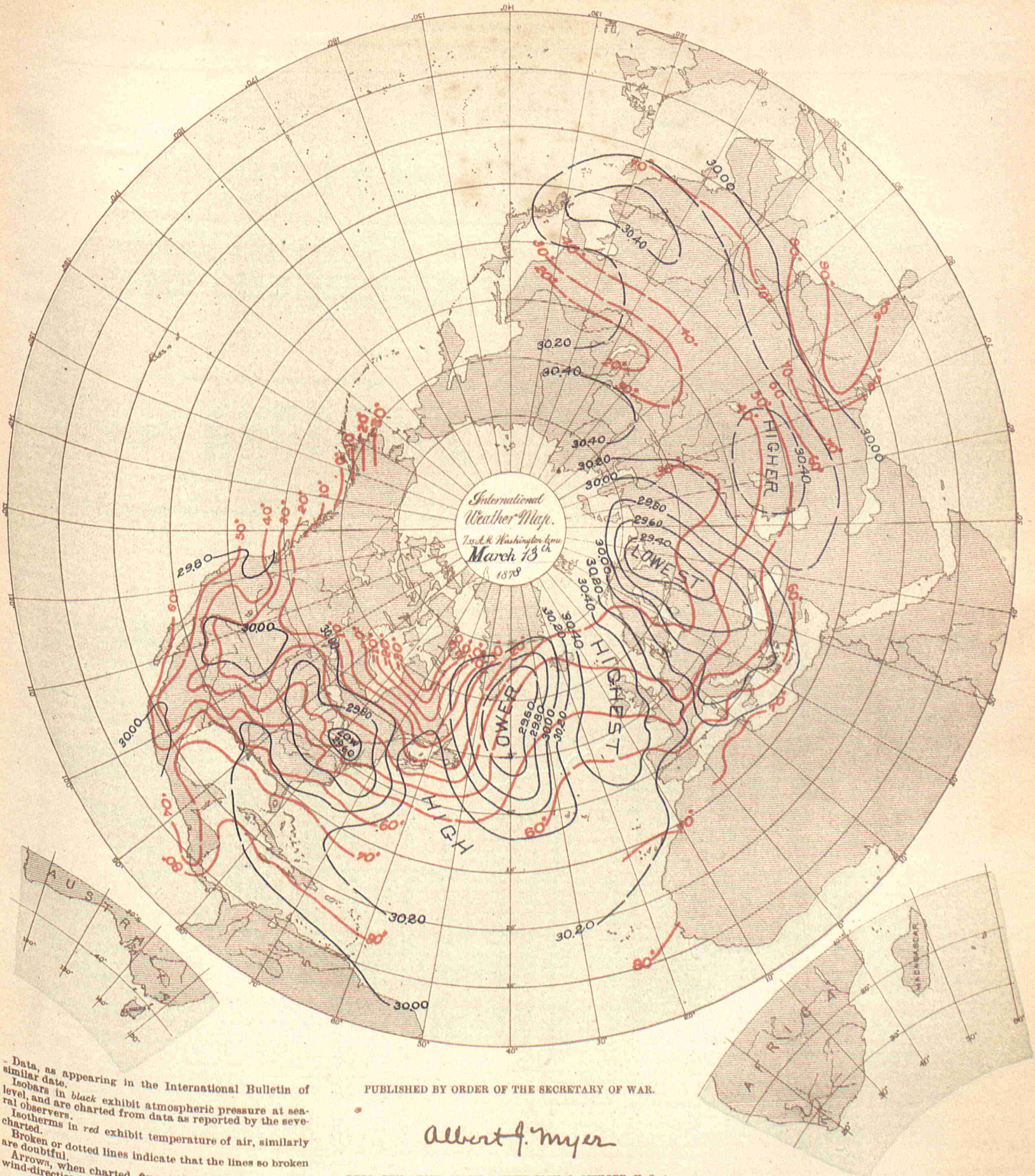
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Upper 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.41 | 772.4 | 30.51 | 774.9 | 42.0 | 5.6 | ..... | NNE | 22 | 9.8 | ..... | ..... | 4 | ..... | ..... | 0.010 | 0.25 | Blue sky | W. Boswell. |
| Ardrossan | 30.52 | 775.2 | 30.54 | 775.7 | 42 | 5.6 | ..... | WNW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.56 | 776.2 | 46.0 | 7.2 | ..... | ENE | 6 | 2.7 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | S. Call, for Dr. Robinson. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.49 | 774.4 | 41.0 | 5.0 | ..... | N | 12 | 5.4 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | John Hartnup. |
| Birr Castle, (Parsonstown) | 30.33 | 770.4 | 30.53 | 775.4 | 47.7 | 8.7 | ..... | NE | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | J. Dreyer. |
| Bradford, Yorkshire | 30.00 | 762.0 | 30.39 | 771.9 | 43.3 | 6.3 | ..... | NE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | D. clouds | J. McLandsborough. |
| Bridgetown, (Barbados) | 30.00 | 762.0 | 30.03 | 762.7 | 80.5 | 26.9 | ..... | NE | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 30.36 | 771.1 | 42.0 | 5.6 | ..... | N | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | H. Todd. [H. C. |
| Cardington | ..... | ..... | 30.39 | 771.9 | 41.4 | 5.2 | ..... | N | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | John McLaren. |
| Chatham, School M. E. | 30.22 | 767.6 | 30.36 | 771.1 | 40.7 | 4.8 | ..... | N | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.92 | 734.6 | 30.43 | 772.9 | 44.8 | 7.1 | ..... | E | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | Fine | Alexander Watt. |
| Donaghadee | 30.52 | 775.2 | 30.54 | 775.7 | 43 | 6.1 | ..... | NNE | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | J. Mac Gowan. |
| Dover | 30.26 | 768.6 | 30.28 | 769.1 | 42 | 5.6 | ..... | N | ..... | ..... | 5 | ..... | 7 | ..... | ..... | ..... | ..... | Hailing | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 30.45 | 773.4 | 47.0 | 8.3 | ..... | N | 2.0 | 0.9 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Thomas Mackereth. |
| Falmouth, Observatory | 30.21 | 767.3 | 30.45 | 773.4 | 48.3 | 9.1 | ..... | N | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.74 | 704.6 | 29.97 | 761.2 | 74.0 | 23.3 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.72 | 754.9 | 29.94 | 760.5 | 88.0 | 31.1 | ..... | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's College | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.04 | 763.0 | 30.09 | 764.3 | 59.9 | 15.5 | ..... | E | ..... | ..... | 5 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Corpl. C. Aitken, A.H.C. |
| Glasgow, Observatory | 30.32 | 770.1 | 30.53 | 775.4 | 42.9 | 6.1 | ..... | N | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | D. G. Maclean. |
| Great Yarmouth | 30.26 | 768.6 | 30.26 | 768.6 | 42 | 5.6 | ..... | NNW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | G. T. Watson. |
| Greenwich, Royal Obs'y | 30.20 | 767.1 | 30.38 | 771.6 | 41.6 | 5.3 | ..... | N | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | Nearly overcast. | The Staff, for G. B. Airy. |
| Guernsey | 30.18 | 766.6 | 30.40 | 772.1 | 47 | 8.3 | ..... | NE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 30.69 | 779.5 | 52 | 11.1 | ..... | NE | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0 | 0 | Gloomy | M. P. Moyle. |
| Holyhead | 30.46 | 773.7 | 30.52 | 775.2 | 41 | 5.0 | ..... | NNE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | John Tilston. |
| Jersey | 30.11 | 764.8 | 30.41 | 772.4 | 45.5 | 7.5 | ..... | NNE | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | J. Fisher. |
| Kew, Observatory | ..... | ..... | 30.29 | 769.4 | 41.6 | 5.3 | ..... | N | 21 | 9.4 | ..... | ..... | 9k | ..... | ..... | ..... | ..... | D. clouds | The Staff. |
| Kingstown | 30.52 | 775.2 | 30.55 | 776.0 | 44 | 6.7 | ..... | ENE | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | George Mitchell. |
| Leicester, Museum | ..... | ..... | 30.42 | 772.7 | 40.9 | 4.9 | ..... | NW | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.81 | 757.2 | 29.89 | 759.2 | 60.6 | 15.9 | ..... | NW | ..... | ..... | 6 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds | Sgt. Fred. Travis, A. H. |
| Nairn | 30.42 | 772.7 | 30.52 | 775.2 | 46 | 7.8 | ..... | NW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ¾ clouded | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 30.08 | 764.0 | 75.2 | 24.0 | ..... | SE | ..... | ..... | 1 | ..... | 10k | ..... | ..... | ..... | ..... | Overcast | C. S. Duncombe. |
| Nottingham, Observatory | 30.24 | 768.1 | 30.44 | 773.2 | 43.2 | 6.2 | ..... | NNW | ..... | ..... | 3 | ..... | 7c;k | ..... | ..... | NNW | 0 | 0 | D. clouds | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.90 | 759.4 | 30.45 | 773.4 | 40.3 | 4.6 | ..... | NNE | ..... | ..... | 4–5 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.41 | 772.4 | 41 | 5.0 | ..... | N | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | Mr. Lucas. |
| Plymouth | 30.34 | 770.6 | 30.41 | 772.4 | 50.0 | 10.0 | ..... | NE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | John Merrifield. |
| Roche's Point | 30.43 | 772.9 | 30.47 | 773.9 | 48 | 8.9 | ..... | ESE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Dull | W. Kennedy. |
| Saint Ann's Head | 30.29 | 769.4 | 30.46 | 773.7 | 48 | 8.9 | ..... | NNE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | | John C. Walker. |
| Sandwick Manse, (Orkneys | ..... | ..... | 30.55 | 776.0 | 42.4 | 5.8 | ..... | NNE | 6 | 2.7 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 29.70 | 754.4 | 48.6 | 9.2 | ..... | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Sergt. W. H. Lyne. |
| Sheffield | 30.16 | 766.1 | 30.46 | 773.7 | 43.0 | 6.1 | ..... | NNW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | Overcast | W. F. Cooper. |
| Silloth Rectory | 30.51 | 774.9 | 30.54 | 775.7 | 46.2 | 7.9 | 80 | N | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | D. clouds | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 30.06 | 763.5 | 30.47 | 773.9 | 42.4 | 5.8 | ..... | N | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Hazy | Rev. S. J. Perry. |
| Stornorway, Lews C., (Hebr.) | ..... | ..... | 30.50 | 774.7 | 42 | 5.6 | ..... | ESE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ¼ clouded | John Smith. |
| Stratfield Turgiss | 30.17 | 766.3 | 30.40 | 772.1 | 44.5 | 6.9 | ..... | N | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | Rev. C. H. Griffith, F.M.S |
| Thurso | ..... | ..... | 30.52 | 775.2 | 44 | 6.7 | ..... | N | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 30.40 | 772.1 | 52 | 11.1 | ..... | W | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 30.51 | 774.9 | 50.3 | 10.2 | ..... | N | 8 | 3.6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty | The Staff. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.72 | 754.9 | 74.0 | 23.3 | 76 | NW | ..... | ..... | 3 | ..... | 8k | ..... | ..... | 0 | 0 | Cloudy | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.83 | 757.7 | 30.02 | 762.4 | 85.0 | 29.4 | 56 | WSW | 8.0 | 3.6 | ..... | 3 | 6 | ..... | E | 0 | 0 | Cloudy; fine | C. Meldrum. |
| Melbourne, Observatory | 29.84 | 757.9 | 29.93 | 760.2 | 70.9 | 21.6 | 61 | E | 2 | 0.9 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Dull | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

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

| MARINE SERIES. VESSELS. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|
| S. S. Algeria | ..... | ..... | ..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | Capt. C. C. Prehn. [R. |
| S. S. Peruvian | ..... | ..... | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire, N. 37° 55′ W. 65° 5′ | 2 | SW | D. clouds | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.




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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 240 DEVONSHIRE ST. BOSTON.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.20 | 665.5 | ..... | ..... | 68.4 | 20.2 | 77 | NE | ..... | ..... | 2 | p | ..... | ..... | ..... | 0 | 0 | ..... | Federico Maison. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.89 | 759.3 | 29.94 | 760.5 | 34.7 | 1.5 | 66 | NNE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | |
| Farõe | 30.05 | 763.3 | 30.07 | 763.8 | 36.1 | 2.3 | 63 | NE | ..... | ..... | 6 | ..... | 7 | ..... | ..... | ..... | ..... | ..... | |
| Godthaab, (Greenland) | 29.67 | 753.6 | 29.71 | 754.7 | 1.9 | —16.7 | 85 | NNE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | |
| Stykkisholm, (Iceland) | 29.94 | 760.4 | 29.98 | 761.5 | 44.4 | 6.9 | 86 | S | ..... | ..... | 8 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | |
| Thorshavn, (Farõe) | 30.55 | 775.9 | 30.58 | 776.8 | 36.7 | 2.6 | 74 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Vestervig | 29.96 | 760.9 | 30.13 | 765.2 | 34.9 | 1.6 | 71 | NNE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.89 | 759.1 | 30.44 | 773.1 | 50.0 | 10 | 70 | NE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0.063 | 1.6 | Very cloudy | Collignon, Director. |
| Amiens, Normal School | 30.17 | 766.2 | 30.28 | 769.0 | 40.6 | 4.8 | 74 | N | ..... | ..... | 3 | ..... | 8 | ..... | NW | 0 | 0 | Very cloudy | Bonvarne, Director. |
| Avignon, Normal School | 29.98 | 761.6 | 30.07 | 763.6 | 55.4 | 13 | 36 | N | ..... | ..... | 6 | ..... | 2 | ..... | NNW | 0 | 0 | Partly cl'dy | Mr. Giraud, Director |
| Bar-sur-Seine | 29.63 | 752.6 | 30.22 | 767.6 | 40.8 | 4.9 | 70 | N | ..... | ..... | 1 | ..... | 10 | ..... | N | 0.217 | 5.5 | Hailing..... | C. Saillard. |
| Beaumette Obs'y (Angers) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Albert Cheux. |
| Beauvais | ..... | ..... | ..... | ..... | 42.6 | 5.9 | 58 | NNE | ..... | ..... | 3 | ..... | 8 | ..... | NNE | 0.059 | 1.50 | Very cloudy | Normal School. |
| Besançon | 29.28 | 743.6 | 30.21 | 767.3 | 36.7 | 2.6 | 93 | SW | ..... | ..... | 3 | ..... | 8 | ..... | SW | 0.453 | 11.5 | Very cloudy | Normal School. |
| Bourg-en-Bresse | 29.25 | 743.0 | 30.17 | 766.3 | 43.7 | 6.5 | 78 | N | ..... | ..... | 2 | ..... | 5km | ..... | N | 0.39 | 10. | Covered..... | Normal School. |
| Bourges, Normal School | 29.63 | 752.7 | 30.20 | 767.0 | 48.2 | 9 | 84 | W | ..... | ..... | 2 | ..... | 2 | ..... | S | 0 | 0 | Slightly cov. | A. Wagner, Director. |
| Brest, Naval Observatory | 30.10 | 764.6 | 30.32 | 770.1 | 52.0 | 11.1 | 77 | NNE | ..... | ..... | 3 | ..... | 10 | ..... | NNE | 0 | 0 | Misty..... | The Staff. |
| Carcassonne, Normal School | 29.78 | 756.5 | 30.21 | 767.4 | 48.9 | 9.4 | 95 | W | ..... | ..... | 6 | ..... | 10 | ..... | NW | 0 | 0 | Covered ..... | Vateau, Director. |
| Caen | 30.19 | 766.9 | 30.27 | 768.8 | 44.8 | 7.1 | 57 | N | ..... | ..... | 1 | ..... | 5 | ..... | N | 0.071 | 1.8 | Cloudy..... | Normal School. |
| Chartres, Normal School | 29.66 | 753.3 | 30.21 | 767.2 | 41.7 | 5.4 | 84 | N | ..... | ..... | 4 | ..... | 8 | ..... | N | 0.098 | 2.5 | ..... | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.86 | 758.4 | 30.19 | 766.9 | 41.4 | 5.2 | 67 | NW | ..... | ..... | 6 | ..... | 5k | ..... | NW | 0 | 0 | Cloudy..... | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs. | 28.79 | 731.2 | 30.18 | 766.6 | 43.5 | 6.4 | 65 | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.012 | 0.3 | Covered ..... | Alluard, Director. |
| Commercy, Normal School | 29.26 | 743.3 | 30.18 | 766.6 | 38.1 | 3.4 | 66 | NW | ..... | ..... | 2 | ..... | 5 | ..... | NW | 0.04 | 1. | Cloudy..... | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.84 | 732.6 | 29.98 | 761.6 | 52.3 | 11.3 | 77 | NW | ..... | ..... | 6 | ..... | 2 | ..... | NW | 0 | 0 | ¾ Covered... | M. Kina. |
| Grenoble | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| La Roche-sur-Yon, N. School | 30.10 | 764.5 | 30.32 | 770.0 | 56.5 | 13.6 | 75 | N | ..... | ..... | 6 | ..... | 8 | ..... | N | 0 | 0 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.98 | 761.4 | 30.29 | 769.4 | 45.3 | 7.4 | 69 | NE | ..... | ..... | 6 | ..... | 8 | ..... | NE | 0.08 | 2. | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 29.21 | 741.9 | 30.16 | 766.0 | 38.1 | 3.4 | 93 | N | ..... | ..... | 2 | ..... | 10 | ..... | SW | 0.35 | 9. | Rain & snow | Voudez, Director. |
| Lorient, Naval Observatory | 30.28 | 769.1 | 30.38 | 771.6 | 55.0 | 12.8 | 77 | N | ..... | ..... | 2 | ..... | 8 | ..... | N | 0.024 | 0.6 | ¾ covered.... | T. Carré, Director. |
| Mâcon, Normal School | 29.55 | 750.5 | 30.26 | 768.6 | 44.4 | 6.9 | 83 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered ..... | M. Marchal, Director. |
| Metz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. A. Schuster, Dir. |
| Mirecourt | 29.08 | 738.5 | 30.17 | 766.2 | 38.8 | 3.8 | 60 | NW | ..... | ..... | 4 | ..... | 10 | ..... | SE | 0 | 0 | Covered ..... | Normal School. |
| Nismes, Normal School | 29.85 | 758.3 | 30.06 | 763.4 | 60.4 | 15.8 | 71 | N | ..... | ..... | 4 | ..... | 2 | ..... | NW | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Orleans, Normal School | 29.82 | 757.5 | 30.21 | 767.4 | 43.2 | 6.2 | 67 | NE | ..... | ..... | ..... | ..... | 8 | ..... | NE | 0.04 | 1. | Very cloudy | Bernard, Director. |
| Paris, Observatory | 30.02 | 762.5 | 30.27 | 768.8 | 43.0 | 6.1 | 43 | N | ..... | ..... | 2 | ..... | 10 | ..... | NW | 0.016 | 0.40 | Covered ..... | National Observatory. |
| Privas | 29.90 | 736.6 | 30.08 | 764.0 | 52.0 | 11.1 | 60 | N | ..... | ..... | 4 | ..... | 5 | ..... | S | 0 | 0 | Cloudy..... | Normal School |
| Puy de Dome (Summit) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.28 | 769.0 | 30.31 | 769.8 | 55.0 | 12.8 | 86 | NW | ..... | ..... | 3 | ..... | 10 | ..... | NW | 0 | 0 | Covered..... | Lt. Decante, Director. |
| Rouen, Normal School | 30.23 | 767.8 | 30.32 | 770.0 | 46.8 | 8.2 | 60 | N | ..... | ..... | 6 | ..... | 8 | ..... | N | 0 | 0 | Very cloudy | F. Lucard, Director. |
| Saint Malo (Port) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. H. Hercouet. |
| Tarbes, Normal School | 29.31 | 744.5 | 30.41 | 772.4 | 53.6 | 12 | 54 | WSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | Covered ..... | T. Hugues, Director. |
| Villefranche | 29.48 | 748.7 | 30.21 | 767.4 | 44.8 | 7.1 | 83 | NNE | ..... | ..... | 1 | ..... | 8 | ..... | NW | 0.102 | 2.6 | Very cloudy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.88 | 759.0 | 29.91 | 759.7 | 75.2 | 24 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Lyons | ..... | ..... | 30.18 | 766.6 | 37.0 | 2.8 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1.38 | 35. | ..... | L'Abbé Marchési. |
| Marseilles, Observatory | ..... | ..... | 29.94 | 760.5 | 55.8 | 13.2 | 43 | NW | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.20 | 5. | Raining..... | M. Jeys. |
| Mont-Louis | 24.94 | 633.4 | 30.25 | 768.4 | 44.8 | 7.1 | 44 | WSW | 7.4 | 3.33 | 8 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy..... | The Staff. |
| Nice | 29.66 | 753.2 | 29.78 | 755.2 | 60.4 | 15.8 | 41 | E | ..... | ..... | ..... | ..... | 3 | ..... | NW | 0 | 0 | ..... | Mr. Falguère. |
| Perpignan | 29.98 | 761.4 | 30.25 | 768.4 | 42.3 | 5.7 | 48 | N | ..... | ..... | 2 | ..... | 1 | ..... | NW | 0 | 0 | Clear..... | Dr. A. Niepce. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | 30.09 | 764.2 | 61.0 | 16 1 | 59 | NW | 37.3 | 16.66 | 4–6 | ..... | 10 | ..... | NNW | 0.008 | 0.2 | ..... | Marié Davy, Director. |
| Pic du Midi, (Plantade,) H. P. | 22.60 | 574.0 | ..... | ..... | 32.0 | 0.0 | ..... | NW | ..... | ..... | ..... | ..... | 2 | ..... | NW | 0 | 0 | ..... | Dr. Fines. |
| Saint Maur, (near Paris) | 30.10 | 764.5 | 30.26 | 768.7 | 42.8 | 6.0 | 57 | N | ..... | ..... | 6 | ..... | 8 | ..... | ..... | 0.039 | 1.0 | Snowy..... | M. Baylac. |
| Toulouse, Observatory | 29.54 | 750.3 | 30.27 | 768.8 | 49.8 | 9.9 | 80 | NW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.039 | 1.0 | ..... | Gen'l de Nansouty |
| Tours | 30.05 | 763.2 | 30.24 | 768.2 | 48.9 | 9.4 | 79 | N | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.177 | 4.50 | Raining..... | E. Renou. |
| Versailles, (near Paris) | ..... | ..... | 30.26 | 768.7 | 43.5 | 6.4 | 46 | NE | ..... | ..... | 3 | ..... | 8 | ..... | N | 0.055 | 1.4 | ..... | The Staff. |
| Zi-Ka-Wei, (near Shanghai) | 30.41 | 772.3 | 30.43 | 772.9 | 39.4 | 4.1 | 80 | E | 7.8 | 3.5 | 3 | ..... | 9 | ..... | ..... | 0.011 | 0.28 | Very cloudy | C. Marquet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear..... | Dr. A. Bérigny. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Marc Dechevrens, S. J. |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,273.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 1–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Hoh. |
| Berlin | 29.68 | 753.9 | 29.86 | 758.4 | 38.3 | 3.6 | 59 | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.214 | 5.43 | Raining..... | Prof. Arndt. |
| Breslau | 29.23 | 742.4 | 29.75 | 755.7 | 32.2 | 0.1 | 86 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.051 | 1.29 | Snowing..... | Royal University Obs'y |
| Carlsruhe | 29.59 | 751.6 | 30.03 | 762.8 | 41.2 | 5.1 | 55 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.228 | 5.8 | ..... | Albert Senz. |
| Cassel | 29.38 | 746.2 | 29.98 | 761.6 | 35.2 | 1.8 | 75 | N | ..... | ..... | 6 | ..... | 8 | WNW | ..... | 0.216 | 5.48 | Snow-squall | Dr. H. Möhl. |
| Crefeld | 29.90 | 759.5 | 30.07 | 763.6 | 41.9 | 5.5 | 40 | N | ..... | ..... | 6 | ..... | 7k | ..... | ..... | 0.08 | 2. | ..... | Director Lose. |
| Emden | 30.14 | 765.6 | 30.18 | 766.5 | 39.0 | 3.9 | 60 | N | ..... | ..... | 5 | ..... | 4 | ..... | ..... | 0.138 | 3.5 | ..... | Prof. Prestel. |
| Frankfort on the Main | 29.69 | 754.1 | 30.07 | 763.7 | 39.2 | 4. | 49 | NW | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0.035 | 0.9 | ..... | Physical Society. |
| Friedrichshafen | 28.57 | 725.7 | 30.07 | 763.8 | 33.8 | 1.0 | 79 | N | ..... | ..... | 8 | ..... | 10 | N | ..... | 0.209 | 5.3 | ..... | M. Wilhelm. |
| Hamburg | 29.89 | 759.1 | 29.96 | 760.9 | 39.7 | 4.3 | 68 | N | ..... | ..... | 3 | ..... | 7k | ..... | ..... | 0.012 | 0.3 | Fair..... | Captain F. Hegemann. |
| Kiel | 29.98 | 761.6 | 30.00 | 762.0 | 38.1 | 3.4 | 74 | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.60 | 751.8 | 29.68 | 753.9 | 31.3 | — 0.4 | 63 | N | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.042 | 1.07 | Snowing..... | Prof. E. Luther. |
| Köslin | ..... | ..... | 29.80 | 756.8 | 31.3 | — 0.4 | ..... | N | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | H. Müller. |
| Leipsic, Observatory | 29.47 | 748.5 | 29.91 | 759.6 | 35.6 | 2.0 | 85 | NW | ..... | ..... | 4 | ..... | 10 | NW | ..... | 0.138 | 3.5 | Light snow.. | Prof. Bruhns. |
| Memel, Naval School | 29.64 | 752.8 | 29.69 | 754.0 | 28.6 | — 1.9 | 62 | NNE | ..... | ..... | 4 | ..... | 5s | ..... | ..... | ..... | ..... | D. clouds.... | Reinbrech von Skalweit. |
| Neufahrwasser | 29.74 | 755.3 | 29.75 | 755.7 | 31.1 | — 0.5 | 68 | N | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.114 | 2.9 | ..... | A. Lothes. |
| Posen | 29.56 | 750.8 | 29.86 | 758.4 | 33.6 | 0.9 | 79 | NW | ..... | ..... | 5 | ..... | 9 | ..... | ..... | 0.024 | 0.60 | Cloudy..... | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.54 | 750.4 | 30.12 | 765.0 | 35.2 | 1.8 | 80 | NNE | ..... | ..... | 4 | ..... | 10 | NW | ..... | 0.035 | 0.88 | Graupelnd.. | Dr. Schur. |
| Stuttgart | 29.05 | 737.9 | 30.02 | 762.6 | 37.4 | 3.0 | 54 | N | ..... | ..... | 8 | ..... | 7 | N | ..... | 0.035 | 0.9 | ..... | Prof. Schoder. |
| Treves, (Trier) | 29.47 | 748.6 | 30.00 | 761.9 | 40.6 | 4.8 | 50 | NW | ..... | ..... | 7 | ..... | 5 | ..... | ..... | 0.039 | 0.99 | Foggy ..... | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.41 | 721.6 | 29.99 | 761.8 | 29.1 | — 1.6 | 90 | NW | 4 | 2 | ..... | ..... | 9kn | ..... | NW | 0.102 | 2.6 | Snowing..... | Dr. Von Bebber. |
| Wustrow, Naval School | 29.98 | 761.5 | 30.03 | 762.7 | 35.4 | 1.9 | 66 | NE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0.038 | 0.96 | Fair ..... | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Königsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.37 | 746.1 | 29.77 | 756.1 | 59.4 | 15.2 | ..... | SW | ..... | ..... | 2.5 | ..... | ..... | ..... | ..... | ..... | ..... | ⅓ clear..... | Dr. J. F. J. Schmidt. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

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

## INDIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.93 | 760.3 | 29.98 | 761.6 | 77.5 | 25.3 | 76 | WSW | 28.0? | 12.5? | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky.. | ... |
| Deesa | 29.49 | 749.0 | 29.95 | 760.8 | 95.5 | 35.3 | 22 | WSW | ..... | ..... | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | |
| Bombay | 29.90 | 759.3 | 29.93 | 760.3 | 81.9 | 27.7 | 79 | WNW | 9.0 | 4.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | |
| Poona | 27.88 | 708.2 | 29.84 | 758.0 | 90.5 | 32.5 | 45 | W | ..... | ..... | ..... | ..... | 7 | ..... | S | 0 | 0 | Dust-whirl.. | |
| Lahore | 29.31 | 744.5 | 30.07 | 763.7 | 77.9 | 25.5 | 50 | N | 2.1 | 0.9 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Cloudy..... | |
| Belgaum | 27.44 | 696.9 | 29.95 | 760.8 | 83.7 | 28.7 | 61 | W | 8.0 | 3.6 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | D. clouds.... | |
| Bangalore | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Roorkee | 29.01 | 736.8 | 29.91 | 759.7 | 80.8 | 27.1 | 35 | Calm | 1.8 | 0.8 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | ..... |
| Agra | 29.34 | 745.2 | 29.90 | 759.4 | 89.7 | 32.1 | 25 | N | ..... | ..... | ..... | ..... | 3 | ..... | N | 0 | 0 | ..... | ..... |
| Trichinopoly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Nagpur | 28.84 | 732.4 | 29.85 | 758.2 | 95.2 | 35.1 | 22 | SE | 4.0 | 1.8 | ..... | ..... | 7 | ..... | E | ..... | ..... | Thunder-storm... | |
| Madras | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Lucknow | 29.56 | 750.7 | 29.92 | 760.1 | 84.8 | 29.3 | 50 | WNW | 2.1 | 0.9 | ..... | ..... | 2 | WSW | ..... | 0 | 0 | D. clouds.... | |
| Allahabad | 29.59 | 751.6 | 29.90 | 759.4 | 86.4 | 30.2 | 37 | Calm | 0.8 | 0.4 | ..... | ..... | 1 | W | ..... | 0 | 0 | D. clouds.... | |
| Patna | 29.72 | 754.8 | 29.90 | 759.4 | 84.4 | 29.1 | 39 | W | 1.0 | 0.4 | ..... | ..... | 2 | W | W | 0 | 0 | Blue sky..... | |
| Hazaribagh | 27.93 | 709.4 | 29.93 | 760.3 | 82.6 | 28.1 | 21 | NW | 6.9 | 3.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | D. clouds.... | |
| Cuttack | 29.83 | 757.6 | 29.91 | 759.6 | 89.1 | 31.7 | 45 | SW | 5.0 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Misty..... | |
| Calcutta (Alipore) | 29.90 | 759.5 | 29.92 | 760.0 | 82.7 | 28.2 | 44 | SW | 2.0 | 0.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | |
| Goalpara | 29.56 | 750.7 | 29.95 | 760.6 | 79.7 | 26.5 | 50 | ENE | 4.7 | 2.1 | ..... | ..... | 9 | W | W | 0 | 0 | D. clouds.... | |
| Chittagong | 29.90 | 759.5 | 30.00 | 761.9 | 78.7 | 25.9 | 91 | SSW | 5.7 | 2.6 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Blue sky..... | |
| Sibsagar | 29.67 | 753.7 | 30.02 | 762.4 | 72.8 | 22.7 | 70 | ENE | 1.6 | 0.7 | ..... | ..... | 10 | W | W | 0 | 0 | D. clouds.... | |
| Rangoon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Jubbulpore | 28.54 | 725.0 | 29.88 | 759.0 | 92.0 | 33.3 | 19 | NW | 1.6 | 0.7 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Blue sky..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

## ITALIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.27 | 743.5 | 29.69 | 754.2 | 50.9 | 10.5 | 9 | E | 3.8 | 1.7 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 29.60 | 751.7 | 29.71 | 754.6 | 54.7 | 12.6 | 8 | N | 21.0 | 9.4 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.52 | 749.8 | 29.72 | 754.8 | 54.9 | 12.7 | 10 | N | 15.4 | 6.9 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.45 | 722.7 | 29.80 | 756.8 | 50.4 | 10.2 | 15 | W | ..... | ..... | 6 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.27 | 743.4 | 29.79 | 756.6 | 54.9 | 12.7 | ..... | NW | ..... | ..... | 6 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 28.85 | 732.9 | 29.78 | 756.4 | 57.0 | 13.9 | 11 | NNW | 16.8 | 7.5 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 27.83 | 706.9 | 29.78 | 756.4 | 55.6 | 13.1 | 15 | NW | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.57 | 751.1 | 29.80 | 756.9 | 58.6 | 14.8 | 47 | SSW | ..... | ..... | 2 | ..... | 1 | NW | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.55 | 750.5 | 29.72 | 754.9 | 62.4 | 16.9 | 8 | N | 3.8 | 1.7 | ..... | ..... | 1 | NNE | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.48 | 748.7 | 29.79 | 756.7 | 57.2 | 14.0 | 27 | NW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.43 | 747.6 | 29.69 | 754.2 | 57.2 | 14.0 | 11 | N | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 29.68 | 753.8 | 29.76 | 756.0 | 57.4 | 14.1 | 50 | SW | 1.8 | 0.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 29.70 | 754.4 | 29.75 | 755.7 | 50.2 | 10.1 | 71 | N | 12.5 | 5.6 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.19 | 716.9 | 29.79 | 756.7 | 48.9 | 9.4 | 47 | NE | ..... | ..... | 2 | ..... | 1 | NW | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.65 | 753.0 | 29.76 | 755.9 | 59.2 | 15.1 | 66 | WSW | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.61 | 752.1 | 29.79 | 756.7 | 59.4 | 15.2 | 59 | W | 9.4 | 4.2 | ..... | ..... | 3 | NW | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U. | 29.60 | 751.7 | 29.80 | 756.9 | 60.1 | 15.6 | 52 | WSW | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 54.5 | 12.5 | 52 | NNW | 10.5 | 4.7 | ..... | ..... | 5 | SW | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.65 | 753.0 | 29.84 | 758.0 | 59.0 | 15.0 | 52 | NW | ..... | ..... | 6 | ..... | 8 | NNW | ..... | 0.146 | 3.7 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.90 | 735.6 | 29.87 | 758.6 | 55.9 | 12.8 | 70 | SW | 5.6 | 2.5 | ..... | ..... | 3 | NW | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.56 | 750.7 | 29.82 | 757.3 | 61.3 | 16.3 | 50 | WSW | 6.9 | 3.1 | ..... | ..... | 10 | ..... | ..... | 0.394 | 10.0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.72 | 755.0 | 29.80 | 756.9 | 59.7 | 15.4 | 67 | E | ..... | ..... | 2 | ..... | 4 | W | ..... | 0.004 | 0.1 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.24 | 742.8 | 29.80 | 756.9 | 56.7 | 13.7 | 57 | SW | 6.3 | 2.8 | ..... | ..... | 4 | W | ..... | 0.720 | 18.3 | ..... | Prof. F. Brioschi |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.7 ft.; Mondovi, 556 m., or 1,824.7 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 29.98 | 761.5 | 30.05 | 763.3 | 36.0 | 2.2 | 52 | N | 9.2 | 4.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear..... | The Observatory. |
| Tokei (Yeddo) University | 29.94 | 760.5 | 30.04 | 762.9 | 36.2 | 2.3 | 54 | NNW | 16 | 7.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear..... | Prof. P. V. Veeder. |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | 25.06 | 636.5 | 29.84 | 758.0 | 65.3 | 18.5 | 37 | N | 1.8 | 0.8 | ..... | 5c | 5c | ..... | ..... | 0 | 0 | Covered ..... | C. Peña, M. D. |
| Cuernavaca | 25.03 | 635.8 | 30.09 | 764.3 | 44.6 | 7.0 | 47 | S | 0.9 | 0.4 | ..... | 0 | 9 | ..... | SW | 0 | 0 | Very cloudy | L. Castillo, A. E. |
| Guadalajara | 23.66 | 601.0 | 29.86 | 759.1 | 58.6 | 14.8 | 38 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear... | Prof. L. Perez. |
| Guanajuato | ..... | ..... | ..... | ..... | 55.0 | 12.8 | 50 | N | 0.9 | 0.4 | ..... | 3c | 6n | SW | ..... | 0 | 0 | Very cloudy | Prof. V. Fernandez |
| Leon | 23.07 | 586.3 | 30.14 | 765.5 | 51.8 | 11.0 | 48 | Calm | 0 | 0 | ..... | 10c | 0 | ..... | ..... | 0 | 0 | Covered..... | Prof. M. Leal. |
| Mexico | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 48.7 | 9.3 | 35 | W | 0.9 | 0.4 | ..... | 5c | 3ks | SW | SW | 0 | 0 | Cloudy..... | I. Orozco, M. D. |
| Puebla | 28.30 | 591.8 | 30.03 | 762.8 | 46.6 | 8.1 | 39 | ENE | 7.4 | 3.3 | ..... | 5cn | 5sn | ..... | ..... | 0 | 0 | Covered..... | M. V. de Leon, M. E. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. B. Gonzales. |
| Tlacotalpam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| San Luis Potosi | 29.91 | 759.6 | 29.92 | 759.9 | 72.5 | 22.5 | 85 | Calm | 0 | 0 | ..... | 0 | 10n | ..... | N | 0 | 0 | Threatening | Prof. F. R. Bayly. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Zacatecas | 29.94 | 760.4 | 29.96 | 761.1 | 75.2 | 24.0 | 90 | NW | 4.0 | 1.8 | ..... | 0 | 10sk | ..... | ..... | 0 | 0 | Covered..... | Prof. J. Rossell. |
| Puebla, (Catholic Institute) | ..... | ..... | ..... | ..... | 51.6 | 10.9 | 42 | NW | 5.1 | 2.3 | ..... | 0 | 8kn | ..... | SW | 0 | 0 | Smoky ..... | J. A. Bonilla, M. E. |
| Morelia | 28.28 | 591.5 | 30.07 | 763.9 | 46.8 | 8.2 | 43 | E | 7.8 | 3.5 | ..... | 0 | 10 | ..... | SW | 0 | 0 | Hazy..... | P. Spina. [M. M. D. D. |
| | | | | | | | | | | | | | | | | | | | M. Tena, F. L. Param. |

Note.—The elevation of Aguascallientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabell m, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft. San Luis Potosi, 1,891 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.25 | 768.3 | 30.25 | 768.3 | 39.9 | 4.4 | ..... | N | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0.008 | 0.2 | ..... | |
| Groningen | 30.05 | 763 3 | 30.11 | 764.7 | 38.5 | 3.6 | ..... | N | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.024 | 0.6 | ..... | |
| Helder | 30.14 | 765.6 | 30.14 | 765.6 | 39.2 | 4.0 | ..... | NW | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0.047 | 1.2 | ..... | |
| Hellevoetsluis | 30.20 | 767.0 | 30.20 | 767 0 | 40.8 | 4.9 | 72 | NNW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 30.11 | 764.9 | 30.16 | 766.1 | 42.3 | 5.7 | 48 | NNW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0.036 | 0.9 | Cloudy..... | H. v d Brink. |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give and humidity; nor Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between up per the lower clouds.

## NORWEGIAN SERIES.

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

| STATIONS | Barometer. Corrected for instru'tal error and temperature. Inches. | Barometer. Corrected for instru'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.17 | 766.3 | 30.23 | 767.7 | 34.9 | 1.6 | 56 | N | 11.0 | 4.9 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | ..... |
| Bröno | 30.09 | 764.3 | 30.13 | 765.3 | 31.3 | — 0.4 | 81 | NW | 13 | 6 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... |
| Christiania | 29.88 | 758.9 | 30.03 | 762.7 | 33.8 | 3.8 | 77 | NNE | 18 | 8 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | ..... |
| Tromsö | 29.97 | 761.3 | 30.02 | 762.4 | 27.7 | — 2.4 | 75 | NE | 11 | 5 | ..... | ..... | 10 | ..... | ..... | 0.165 | 4.2 | ..... | ..... |

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

## PORTUGUESE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.97 | 761.1 | 30.16 | 766.0 | 62.2 | 16.8 | 88 | SSW | 2.5 | 1.1 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.13 | 740.0 | 30.14 | 765.6 | 70.0 | 21.1 | 26 | NE | 10.5 | 4.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos |
| Funchal, (Madeira) | 30.12 | 765.0 | 30.21 | 767.2 | 67.6 | 19.8 | 53 | W | 6.3 | 2.8 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.79 | 756.7 | 30.15 | 765.7 | 67.3 | 19.6 | 32 | NE | 7.4 | 3.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.14 | 765.6 | 30.23 | 767.8 | 65.5 | 18.6 | 77 | SW | 4.3 | 1.9 | ..... | ..... | 8 | ..... | ..... | 0.232 | 5.9 | ..... | |

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

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd't. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello, Mozambique, Mozambique | 29.78 | 756.4 | 29.78 | 756.5 | 85.6 | 29.8 | ..... | S | ..... | ..... | 2 | ..... | 8 | ..... | S | 1 | ..... | Blue sky | J. F. R. R. Bastos, Com'd't. A. J. de Mattos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Sado, Barthurst, St. Mary's Isl'd. | 29.98* | 761.5* | 29.99* | 761.8* | 82.0 | 27.8 | ..... | NNW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 2 | ..... | Blue sky | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.70 | 754.4 | 29.71 | 754.6 | ..... | ..... | ..... | W | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | Blue sky | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreira, dos Anas, Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level: the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

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

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.20 | 741.6 | 29.63 | 752.7 | 30.9 | — 0.6 | 92 | NW | 11 | 5 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing | Astronomical Obs. |
| Wilna | 29.10 | 739.1 | 29.54 | 750.2 | 26.1 | — 3.3 | 72 | NNW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy clouds | Astronomical Obs. |
| Dorpat | 29.33 | 745.0 | 29.59 | 751.5 | 23.0 | — 5.0 | 81 | NW | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Light snow | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.49 | 749.1 | 29.61 | 749.5 | 25.3 | — 3.7 | 76 | W | 7 | 3 | ..... | ..... | 5ks | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.15 | 740.3 | 29.48 | 748.8 | 23.2 | — 4.9 | 100 | NW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ch. Forsten. |
| Kief | 28.84 | 732.4 | 29.47 | 748.6 | 39.9 | 4.4 | 62 | SW | 9 | 4 | ..... | ..... | 9c;ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.47 | 748.4 | 29.54 | 750.2 | 37.9 | 3.3 | 98 | NW | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.76 | 755.9 | 29.78 | 756.4 | 43.5 | 6.4 | 90 | S | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 28.95 | 735.2 | 29.50 | 749.4 | 37.8 | 3.2 | 66 | S | 9 | 4 | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.55 | 750.6 | 29.76 | 755.9 | 43.0 | 6.1 | 57 | SE | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.34 | 745.2 | 29.36 | 745.7 | 22.6 | — 5.2 | 90 | SE | 18 | 8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Ogorodnikof. |
| Tiflis | 28.82 | 731.9 | 30.26 | 768.6 | 50.7 | 10.4 | 18 | SE | 4 | 2 | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.34 | 770.5 | 30.25 | 768.4 | 40.6 | 4.8 | 71 | SE | 18 | 8 | ..... | ..... | 1k | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Kasan | 29.63 | 752.6 | 29.91 | 759.7 | 32.7 | 0.4 | 91 | S | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 29.13 | 739.9 | 30.13 | 765.3 | 25.7 | — 3.5 | 60 | WNW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light snow | Meteorological Obs |
| Nukuss | 30.33 | 770.3 | 30.57 | 776.5 | 41.4 | 5.2 | 45 | NE | 13 | 6 | ..... | ..... | 1k | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.80 | 731.4 | 30.59 | 776.9 | 39.9 | 4.4 | 100 | NW | 2 | 1 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.68 | 753.9 | 30.23 | 767.8 | 29.7 | — 1.3 | 69 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 30.05 | 763.3 | 30.39 | 771.9 | 31.3 | — 0.4 | 77 | SE | 7 | 3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Krotkowo* | 29.56 | 750.8 | 30.05 | 763.2 | 35.8 | 2.1 | 68 | S | 22 | 10 | ..... | ..... | 9ks | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Peking, (China) | 30.11 | 764.7 | 30.25 | 768.3 | 49.5 | 9.7 | 63 | SW | 7 | 3 | ..... | ..... | 3ks | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.95 | 709.9 | 30.15 | 765.9 | 16.2 | — 8.8 | 60 | Calm | 0 | 0 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.27 m., or 1,621.37 ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.07 m., or 1,942.27 ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

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

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.96 | 760.9 | 30.07 | 763.6 | 58.1 | 14.5 | 56 | S | 2.6 | 1.14 | ..... | 3ck | 0 | WNW | ..... | 0 | 0 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.31 | 769.8 | 30.36 | 771.2 | 58.6 | 14.8 | 68 | N | 1.6 | 0.72 | ..... | 2 | 7 | N | ..... | 0.004 | 0.1 | Almost cov. | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.37 | 695.3 | ..... | ..... | 54.0 | 12.2 | 72 | NE | 8.4 | 3.75 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.94 | 709.7 | 30.55 | 776.0 | 68.0 | 20.0 | 30 | NE | 3.7 | 1.67 | ..... | 2 | 0 | E | ..... | 0 | 0 | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 29.95 | 760.8 | 30.10 | 764.5 | 72.3 | 22.4 | 37 | NE | 2.3 | 1.03 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.32 | 744.6 | 30.20 | 767.1 | 67.1 | 19.5 | 55 | ENE | 15.5 | 6.94 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.97 | 761.2 | 30.04 | 762.9 | 74.8 | 23.8 | 87 | Calm | 0 | 0 | ..... | 3ck | 0 | SE | ..... | Inap. | Inap. | Fair | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 29.99 | 761.8 | 30.09 | 764.2 | 69.8 | 21.0 | 31 | ESE | 29.5 | 13.2 | ..... | 1 | 1 | S | S | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.98 | 761.4 | 30.07 | 763.7 | 78.8 | 26.0 | 87 | E | 11.1 | 4.97 | ..... | 3km | 2k | E | E | 0.128 | 3.25 | Clear | Leonardo de Tejeda, Chief of Engineers. |

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

## SWEDISH SERIES.



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

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.67 | 753.6 | 29.71 | 754.6 | 28.0 | — 2.2 | ..... | N | ..... | ..... | 6 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.05 | 763.2 | 30.10 | 764.5 | 28.8 | — 1.8 | 64 | NNW | ..... | ..... | 7 | ..... | 10 | ..... | ..... | Inap. | Inap. | Snowing | |
| Hernosand | 29.85 | 758.1 | 29.90 | 759 4 | 31.6 | — 0.2 | 56 | NNW | ..... | ..... | 6 | ..... | 4 | ..... | ..... | 0.051 | 1.3 | ..... | |
| Stockholm | 29.64 | 752.9 | 29.82 | 757.4 | 28.4 | — 2.0 | 68 | NNW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.60 | 754.2 | 29.75 | 755.7 | 31.3 | — 0.4 | 85 | N | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 0.059 | 1.5 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.77 | 756.2 | 29.85 | 758.1 | 28.0 | — 1.9 | 70 | N | 16.8 | 7.5 | ..... | ..... | 9 | ..... | N | 0.180 | 3.30 | ..... | Dr. Hildebrandsson. |

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

## SWISS SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.67 | 728.2 | 30.18 | 766.2 | 43.7 | 6.5 | 40 | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.031 | 0.8 | Covered | The Observatory. |
| Zurich | 28.39 | 721.2 | 30.12 | 765.0 | 30.2 | — 1.0 | 96 | W | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0.181 | 4.6 | Cloudy | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +3.4 mm.; Thermometer, —0.9 cent.; Relative Humidity, —21 per cent.

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

## TURKISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.74 | 755.5 | 49.1 | 9.6 | 84 | WSW | 11 | 5.0 | ..... | ..... | 10 | ..... | SW | 0.945 | 24.0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stéfanidès. |
| Varna | ..... | ..... | 29.80 | 756.8 | 55.0 | 12.8 | ..... | W | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 1.26 | 32. | Slightly cl'dy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | Imperial Observatory. |
| Beirut, (Syria.) Lee Obs'y | 29.90 | 759.4 | 30.02 | 762.5 | 65.3 | 18.5 | 59 | NNE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.37 | 746.0 | 29.68 | 753.9 | 32 | 0.0 | ..... | NE | 10 | 4.5 | ..... | ..... | 10s | ..... | NE | 0.37 | 9.4 | Snowing | W. R. Bigg. |
| *Chatham, N B | 30.18 | 766.6 | 30.25 | 768.3 | 18 | — 7.8 | 92 | Calm | 0 | 0 | ..... | 2k | 8ks | Calm | Calm | 0 | 0 | Cloudy | G. A. Blair. |
| Charlottetown, P. E. Island. | 30.25 | 768.8 | 30.30 | 769.6 | 19 | — 7.2 | 90 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.44 | 747.6 | 29.64 | 752.8 | 31.8 | — 0.1 | 100 | E | ..... | ..... | 6 | ..... | 10n | ..... | ..... | 0.41 | 10.4 | Raining | James Smith, M. A |
| Dalhousie, N. B | 30.14 | 765.5 | 30.17 | 766.3 | 25.6 | — 3.6 | 93 | E | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | H. A. Johnson. |
| Esquimault, B. C. | 29.76 | 755.9 | 29.81 | 757.2 | 39.1 | 3.9 | 100 | N | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.24 | 6.1 | Cloudy | W. H. Bevis. |
| *Father Point, Quebec | 30.08 | 764.0 | 30.10 | 764.5 | 28 | — 2.2 | 82 | E | 11 | 4.9 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | J. McWilliams. |
| Fredericton, N. B | 30.14 | 765.5 | 30.21 | 767.3 | 27.0 | — 2.8 | 64 | NE | 6 | 2.7 | ..... | ..... | 10cs | ..... | ..... | Inap. | Inap. | Cloudy | Prof. Harrison. |
| *Fort Garry Manitoba | 29.11 | 739.4 | 29.96 | 761.0 | 33 | 0.6 | 96 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.51 | 724.1 | 29.64 | 752.8 | 33 | 0.6 | 100 | E | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0.77 | 19.6 | Raining | James Grant. |
| *Halifax, N. S | 30.11 | 764.8 | 30.26 | 768.6 | 28 | — 2.2 | 93 | SE | 12 | 5.4 | ..... | ..... | 10n | ..... | SE | 0 | 0 | Cloudy | F. Allison, M. A. |
| Hamilton, Ontario | 29.24 | 742.7 | 29.61 | 752.1 | 35.7 | 2.1 | 92 | NE | ..... | ..... | 1 | 10cs | 0 | ..... | ..... | 1.63 | 41.4 | Raining | Geo. Dickson, M. A. |
| Heart's Content, N. F | 30.15 | 765.8 | 30.18 | 766.6 | 15 | — 9.4 | 82 | NW | ..... | ..... | 5 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | E. Weedon. |
| *Kingston, Ontario | 29.28 | 743.7 | 29.62 | 752.3 | 34 | 1.1 | 84 | NE | 4 | 1.8 | ..... | ..... | 10n | ..... | NE | 0.68 | 17.3 | Light rain | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.30 | 769.6 | 30.34 | 770.6 | 22 | — 5.6 | ..... | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | C. H. Rigby. |
| *Montreal, Quebec | 29.54 | 750.3 | 29.75 | 755.6 | 34 | 1.1 | 82 | E | 18 | 8.0 | ..... | ..... | 10n | ..... | ..... | 0.01 | 0.3 | Light rain | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.98 | 760.1 | 29.69 | 754.1 | 34 | 1.1 | 98 | N | 11 | 4.9 | ..... | ..... | 10n | ..... | N | 0.10 | 2.5 | Light rain | Rev. R. Mosley. |
| Peterboro, Ontario | 28.88 | 733.5 | 29.65 | 753.1 | 33.7 | 0.9 | 98 | NE | ..... | ..... | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 28.87 | 733.3 | 29.58 | 751.3 | 36 | 2.2 | 100 | N | 14 | 6.3 | ..... | ..... | 10n | ..... | NE | 0.54 | 13.7 | Light rain | H. Morgan. |
| Port Hastings, N. S | 30.23 | 767.8 | 30.28 | 769.1 | 23.7 | — 4.6 | ..... | SW | 6 | 2.7 | ..... | ..... | ..... | ..... | ..... | 0.40 | 10.2 | Cloudy | Peter Grant. |
| Port Stanley, Ontario | 28.97 | 735.8 | 29.63 | 752.6 | 37 | 2.8 | 89 | W | 4 | 1.8 | ..... | ..... | 10n | ..... | N | 0.45 | 11.4 | Light rain | M. Payne. |
| *Quebec, Quebec | 29.63 | 752.6 | 29.97 | 761.2 | 30 | — 1.1 | 89 | E | ..... | ..... | 5 | ..... | 10n | ..... | E | 0 | 0 | Cloudy | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.26 | 743.2 | 29.73 | 755.1 | 35 | 1.7 | 85 | SE | 2 | 0.9 | ..... | ..... | 10s | ..... | SE | 0.05 | 1.3 | Light rain | W. H. McIntyre. |
| St. Andrews, N. B | 30.07 | 763.8 | 30.12 | 765.0 | 33 | 0.6 | 86 | SE | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | Dr. Gove. |
| St. John, N. B | 30.03 | 762.7 | 30.20 | 767.1 | 29 | — 1.7 | 88 | E | 9 | 4.0 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Threatening | G. Murdock, C. E. |
| *Saugeen, Ontario | 28.94 | 735.1 | 29.67 | 753.6 | 36 | 2.2 | 90 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | ..... | 0.33 | 8.4 | Light rain | K. Stewart. |
| Stayner, Ontario | 28.86 | 733.0 | 29.66 | 753.4 | 34 | 1.1 | 95 | N | 3 | 1.3 | ..... | ..... | 10n | ..... | ..... | 0.47 | 11.9 | Light rain | R. J. Cole. |
| Stratford, Ontario | 28.81 | 719.1 | 29.62 | 752.3 | 33.0 | 0.6 | 99 | NW | 5 | 2.2 | ..... | ..... | 10n | ..... | ..... | 0.61 | 15.5 | Snowing | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.34 | 770.6 | 30.37 | 771.4 | 25 | — 3.9 | 64 | W | 1 | 0.4 | ..... | 2ck | 0 | NW | ..... | 0 | 0 | Clear | T. C. Hill. |
| *Toronto, Ontario | 29.22 | 742.2 | 29.61 | 752.1 | 36 | 2.2 | 94 | N | 0 | 4.0 | ..... | ..... | 10n | ..... | NE | 0.47 | 11.9 | Sleeting | Magnetic Observatory. |
| Windsor, N. S | 30.17 | 766.3 | 30.27 | 768.8 | 27.0 | — 2.8 | 100 | SE | 10 | 4.5 | ..... | ..... | 10k | ..... | ..... | 0 | 0 | Fair | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 16.5 | — 8.6 | ..... | NW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182ft. or 360.3 m.

UNITED STATES SERIES.

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

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

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Upper. 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.43 | 747.5 | 29.66 | 753.4 | 35 | 1.7 | 100 | NW | 3 | 1.3 | ..... | ..... | 10n | ..... | Calm | 0.82 | 20.8 | Light rain... | |
| Alpena, Michigan | 29.10 | 739.1 | 29.75 | 755.6 | 36 | 2.2 | 90 | N | 10 | 4.5 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy..... | |
| Atlantic City, New Jersey | 29.69 | 754.1 | 29.71 | 754.6 | 45 | 7.2 | 100 | SW | 10 | 4.5 | ..... | ..... | 10s | ..... | SW | 1.08 | 27.4 | Cloudy..... | |
| Augusta, Georgia | 29.75 | 755.6 | 29.93 | 760.2 | 57 | 13.9 | 97 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | S | 0.25 | 6.3 | Foggy ..... | |
| Baltimore, Maryland | 29.64 | 752.8 | 29.79 | 754.4 | 40 | 4.4 | 82 | N | 2 | 0.9 | ..... | 2k | Fog | SW | Calm | 0.87 | 22.1 | Fair ..... | |
| Barnegat, New Jersey | 29.67 | 753.6 | 29.69 | 754.1 | 45 | 7.2 | 92 | W | 13 | 5.8 | ..... | ..... | 10s | ..... | W | 2.26 | 57.4 | Cloudy..... | |
| Bismarck, Dakota | 28.08 | 713.2 | 29.94 | 760.5 | 33 | 0.6 | 89 | N | 16 | 7.2 | ..... | ..... | 10s | ..... | N | Inap. | Inap. | Cloudy..... | |
| Boise City, Idaho | 27.07 | 687.6 | 29.95 | 760.7 | 42 | 5.6 | 74 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Boston, Massachusetts | 29.54 | 750.3 | 29.70 | 754.4 | 37 | 2.8 | 100 | NE | 19 | 8.5 | ..... | ..... | 10n;fg | ..... | ..... | 2.12 | 53.8 | Light rain... | |
| Brackettville, Texas | 28.78 | 731.0 | 29.81 | 757.2 | 55 | 12.8 | 68 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Breckenridge, Minnesota | 28.77 | 730.7 | 29.78 | 756.4 | 35 | 1.7 | 90 | E | 11 | 4.9 | ..... | ..... | 10s | ..... | Calm | 0.45 | 11.4 | Cloudy..... | |
| Brownsville, Texas | 29.91 | 759.7 | 29.98 | 761.5 | 60 | 15.6 | 94 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Buffalo, New York | 28.77 | 730.7 | 29.45 | 748.0 | 41 | 5.0 | 100 | NE | 5 | 2.2 | ..... | ..... | 10n | ..... | Calm | 1.01 | 25.7 | Light rain... | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 44 | 6.7 | 59 | S | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Burlington, Vermont | 29.46 | 748.3 | 29.72 | 754.9 | 36 | 2.2 | 80 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.15 | 3.8 | Light rain... | |
| Cairo, Illinois | 29.55 | 750.6 | 29.94 | 760.5 | 52 | 11.1 | 60 | SW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear ..... | |
| Camp Grant, Arizona | 25.14 | 638.5 | 29.94 | 760.5 | 44 | 6.7 | 30 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Camp Verde, Arizona | 26.72 | 678.7 | 30.21 | 767.3 | 39 | 3.9 | 55 | NW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Campo, California | 27.32 | 693.9 | 29.89 | 759.2 | 34 | 1.1 | 79 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Cape Hatteras, N. Carolina | 29.87 | 758.7 | 29.88 | 758.9 | 58 | 14.4 | 100 | SW | 10 | 4.5 | ..... | ..... | Fog | ..... | ..... | 0.77 | 19.6 | Foggy ..... | |
| Cape Henry, Virginia | 29.76 | 755.9 | 29.79 | 756.7 | 53 | 11.7 | 86 | W | 8 | 3.6 | ..... | ..... | Fog | ..... | Calm | 0.14 | 3.6 | Foggy ..... | |
| Cape Lookout, N. Carolina | 29.88 | 758.9 | 29.89 | 759.2 | 60 | 15.6 | 94 | SW | 15 | 6.7 | ..... | 2c | Fog | W | SW | 0.39 | 9.9 | Foggy ..... | |
| Cape May, New Jersey | 29.69 | 754.1 | 29.72 | 754.9 | 45 | 7.2 | 92 | W | 18 | 8.0 | ..... | ..... | 10s | ..... | ..... | 0.81 | 20.6 | Cloudy..... | |
| Charleston, South Carolina | 29.92 | 760.0 | 29.98 | 761.5 | 64 | 17.8 | 89 | SW | 8 | 3.6 | ..... | 2c | Sm'e | W | Calm | Inap. | Inap. | Fair..... | |
| Cheyenne, Wyoming | 23.93 | 607.8 | 29.87 | 758.7 | 31 | — 0.6 | 69 | NW | 4 | 1.8 | ..... | ..... | 8s | ..... | NW | 0 | 0 | Cloudy..... | |
| Chicago, Illinois | 29.00 | 736.6 | 29.69 | 754.1 | 41 | 5.0 | 91 | NE | 6 | 2.7 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy... ..... | |
| Cincinnati Ohio | 29.07 | 738.4 | 29.70 | 754.4 | 51 | 10.6 | 86 | W | 4 | 1.8 | ..... | ..... | 10ks | ..... | W | 1.83 | 46.5 | Cloudy..... | |
| Cleveland, Ohio | 28.96 | 735.6 | 29.68 | 753.9 | 38 | 3.3 | 95 | W | 12 | 5.4 | ..... | ..... | 10s | ..... | W | 1.58 | 40.1 | Cloudy..... | |
| Concho, Texas | 28.01 | 711.4 | 29.73 | 755.1 | 40 | 4.4 | 18 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Corsicana, Texas | 29.48 | 748.8 | 29.96 | 761.0 | 49 | 9.4 | 64 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Davenport, Iowa | 29.11 | 739.4 | 29.74 | 755.4 | 46 | 7.8 | 84 | W | 5 | 2.2 | ..... | 4k | 7s | W | W | 0.12 | 3.0 | Cloudy..... | |
| Deadwood, Dakota | 25.34 | 643.6 | ..... | ..... | 11 | —11.7 | 80 | S | 1 | 0.4 | ..... | 0 | Haze | ..... | Calm | Inap. | Inap. | Clear..... | |
| Denison, Texas | 29.17 | 740.9 | 29.97 | 761.2 | 50 | 10.0 | 58 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| Denver, Colorado | 24.71 | 627.6 | 29.93 | 760.2 | 31 | — 0.6 | 69 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Detroit, Michigan | 29.00 | 736.6 | 29.66 | 753.4 | 40 | 4.4 | 82 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.43 | 10.9 | Cloudy..... | |
| Dodge City, Kansas | 27.37 | 695.2 | 29.75 | 755.6 | 29 | — 1.7 | 89 | N | 4 | 1.8 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear ..... | |
| Dubuque, Iowa | 28.94 | 735.3 | 29.68 | 753.9 | 45 | 7.2 | 92 | SE | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.06 | 1.5 | Light rain... | |
| Duluth, Minnesota | 29.17 | 740.9 | 29.86 | 758.4 | 35 | 1.7 | 85 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | NE | 0.01 | 0.3 | Cloudy..... | |
| Eagle Pass, Texas | 29.14 | 740.1 | 29.80 | 759.2 | 52 | 11.1 | 79 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Eastport, Maine | 30.01 | 762.2 | 30.08 | 764.0 | 32 | 0.0 | 69 | E | 11 | 4.9 | ..... | ..... | 10n | ..... | ..... | Inap. | Inap. | Hailing..... | |
| Erie, Pennsylvania | 28.88 | 733.5 | 29.59 | 751.6 | 38 | 3.3 | 100 | W | 11 | 4.9 | ..... | ..... | 10n | ..... | ..... | 0.85 | 21.6 | Light rain... | |
| Escanaba, Michigan | 29.17 | 740.9 | 29.85 | 758.2 | 30 | — 1.1 | 83 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy..... | |
| Florence, Arizona | 28.26 | 717.8 | 29.86 | 758.4 | 45 | 7.2 | 61 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Fort Bayard, New Mexico | 24.05 | 610.9 | 30.05 | 763.3 | 35 | 1.7 | 80 | NW | 2 | 0.9 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear..... | |
| Fort Craig, New Mexico | 25.45 | 646.4 | ..... | ..... | 31 | — 0.6 | 48 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Fort Gibson, Indian Ter | 29.38 | 746.2 | 29.93 | 760.2 | 39 | 3.9 | 82 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Fort Griffin, Texas | 28.66 | 728.0 | 29.85 | 758.2 | 43 | 6.1 | 51 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| Fort St. Michael, Alaska | 29.80 | 756.9 | 29.84 | 757.9 | —31 | —35.0 | 100 | N | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Fort Sill, Indian Territory | 28.71 | 729.2 | 29.83 | 757.7 | 45 | 7.2 | 53 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Galveston, Texas | 29.95 | 760.7 | 29.99 | 761.7 | 62 | 16.7 | 88 | N | 2 | 0.9 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy..... | |
| Grand Haven, Michigan | 29.09 | 738.9 | 29.73 | 755.1 | 43 | 6.1 | 75 | E | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Indianapolis, Indiana | 28.90 | 734.0 | 29.67 | 753.6 | 50 | 10.0 | 86 | S | 6 | 2.7 | ..... | ..... | 10n | ..... | SW | 0.03 | 0.8 | Light rain... | |
| Indianola, Texas | 29.96 | 761.0 | 29.99 | 761.7 | 63 | 17 2 | 89 | SE | 4 | 1.8 | ..... | 5k | 0 | SE | ..... | 0 | 0 | Fair ..... | |
| Jacksboro, Texas | 28.77 | 730.7 | 29.90 | 759.4 | 48 | 8.9 | 43 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Jacksonville, Florida | 29.98 | 761.5 | 30.00 | 762.0 | 65 | 18.3 | 89 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Keokuk, Iowa | 29.17 | 740.9 | 29.79 | 756.7 | 42 | 5.6 | 74 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.14 | 3.6 | Clear ..... | |
| Key West, Florida | 29.99 | 761.7 | 30.03 | 762.7 | 75 | 23.9 | 90 | SE | 8 | 3.6 | ..... | 5ck | 5s | SW | SE | 0 | 0 | Fair ..... | |
| Kittyhawk, North Carolina | 29.79 | 756.7 | 29.82 | 757.4 | 63 | 17.2 | 94 | SW | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0.41 | 10.4 | Clear ..... | |
| Knoxville, Tennessee | 28.86 | 733.0 | 29.84 | 757.9 | 54 | 12.2 | 74 | SW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 1.09 | 27.7 | Clear..... | |
| La Crosse, Wisconsin | 28.97 | 735.8 | 29.70 | 754.4 | 43 | 6.1 | 75 | NE | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| La Mesilla, New Mexico | 26.02 | 660.9 | 30.17 | 766.3 | 42 | 5.6 | 62 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Laredo, Texas | 29.52 | 749.8 | 29.85 | 758.2 | 62 | 16.7 | 77 | Calm | 0 | 0 | ..... | 10k | 0 | S | ..... | 0 | 0 | Cloudy..... | |
| Leavenworth, Kansas | 29.04 | 737.6 | 29.90 | 759.4 | 39 | 3.9 | 82 | NW | 1 | 0.4 | ..... | ..... | 10ks | ..... | NW | 0 | 0 | Cloudy..... | |
| Los Angeles, California | 29.59 | 751.6 | 29.93 | 760.2 | 52 | 11.1 | 79 | N | 1 | 0.4 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear..... | |
| Louisville, Kentucky | 29.21 | 741.9 | 29.76 | 755.9 | 51 | 10.6 | 86 | SW | 12 | 5.4 | ..... | 0 | 5s | ..... | SW | 1.63 | 41.4 | Fair ..... | |
| Lynchburg, Virginia | 29.11 | 739.4 | 29.78 | 756.4 | 51 | 10.6 | 79 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.64 | 16.5 | Clear. ..... | |
| Marquette, Michigan | 29.14 | 740.1 | 29.85 | 758.2 | 35 | 1.7 | 90 | NW | 8 | 3.6 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy ..... | |
| Mason, Texas | 28.33 | 719.6 | 30.10 | 764.5 | 49 | 9.4 | 51 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Memphis, Tennessee | 29.69 | 754.1 | 30.00 | 762.0 | 53 | 11.7 | 59 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Milwaukee, Wisconsin | 29.06 | 738.1 | 29.75 | 755.6 | 39 | 3.9 | 91 | NE | 8 | 3.6 | ..... | ..... | 10s;fg | ..... | ..... | 0.01 | 0.3 | Cloudy..... | |
| Mobile, Alabama | 29.96 | 761.0 | 30.01 | 762.2 | 61.5 | 16.4 | 96 | SW | 1 | 0.4 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear..... | |
| Montgomery, Alabama | 29.75 | 755.6 | 29.98 | 761.5 | 60.5 | 15.8 | 70 | SW | 3 | 1.3 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear ..... | |
| Morgantown, West Virginia | 28.65 | 727.7 | 29.67 | 753.6 | 54 | 12.2 | 74 | SW | 14 | 6.3 | ..... | ..... | 10s | ..... | SW | 0.91 | 23.1 | Cloudy..... | |
| Mt. Washington, N. H. | 23.46 | 595.9 | 29.82 | 757.4 | 21 | — 6.1 | 100 | SE | 66 | 29.5 | ..... | ..... | 10n | ..... | SE | 0.10 | 2.5 | Sleeting..... | |
| Nashville, Tennessee | 29.37 | 746.0 | 29.90 | 759.4 | 54 | 12.2 | 67 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.06 | 1.5 | Clear..... | |
| New Haven, Connecticut | 29.56 | 750.8 | 29.68 | 753.9 | 37 | 2.8 | 100 | NE | 14 | 6.3 | ..... | ..... | 10n | ..... | ..... | 1.57 | 39.9 | Light rain... | |
| New London, Connecticut | 29.59 | 751.6 | 29.64 | 752.8 | 40 | 4.4 | 91 | N | 12 | 5.4 | ..... | ..... | 10n | ..... | N | 0.96 | 24.4 | Light rain... | |
| New Orleans, Louisiana | 29.92 | 760.0 | 29.98 | 761.5 | 61 | 16.1 | 88 | W | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy ..... | |
| Newport, Rhode Island | 29.58 | 751.3 | 29.63 | 752.6 | 40 | 4.4 | 100 | N | 11 | 4.9 | ..... | ..... | Fog | ..... | ..... | 2.34 | 59.4 | Foggy ..... | |
| New York, New York | 29.50 | 749.3 | 29.68 | 753.9 | 40 | 4.4 | 91 | NE | 10 | 4.5 | ..... | ..... | 10n;fg | ..... | Calm | 1.42 | 36.1 | Light rain... | |
| Norfolk, Virginia | 29.75 | 755.6 | 29.81 | 757.2 | 55 | 12.8 | 93 | N | 5 | 2.2 | ..... | Haze | Sm'e | ..... | ..... | 0.05 | 1.3 | Smoky..... | |
| North Platte, Nebraska | 27.07 | 687.6 | 29.75 | 755.6 | 26 | — 3.3 | 88 | NW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear. ..... | |
| Olympia, Washington Ter. | 29.69 | 754.1 | 29.73 | 755.1 | 38 | 3.3 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | Inap. | Inap. | Foggy..... | |
| Omaha, Nebraska | 28.74 | 730.0 | 29.83 | 757.7 | 37 | 2.8 | 81 | W | 5 | 2.2 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear ..... | |
| Oswego, New York | 29.26 | 743.2 | 29.58 | 751.3 | 44 | 6.7 | 68 | SE | 10 | 4.5 | ..... | ..... | 10n | ..... | Calm | 1.25 | 31.7 | Light rain... | |
| Pembina, Dakota | 29.06 | 738.1 | 29.92 | 760.0 | 30.5 | — 0.8 | 94 | NW | 8 | 3.6 | ..... | ..... | Fog | ..... | Calm | 0.10 | 2.5 | Foggy ..... | |
| Philadelphia, Pennsylvania | 29.66 | 753.4 | 29.72 | 754.9 | 40 | 4.4 | 100 | W | 3 | 1.3 | ..... | ..... | Fog | ..... | Calm | 0.67 | 17.0 | Foggy ..... | |
| Phœnix, Arizona | 28.76 | 730.5 | 30.60 | 777.2 | 47 | 8.3 | 55 | E | ..... | ..... | ..... | 2c | 0 | NW | ..... | 0 | 0 | Fair..... | |
| Pike's Peak, Colorado | 17.54 | 445.5 | 29.75 | 755.6 | 7 | —13.9 | 54 | NW | 24 | 10.7 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair..... | |
| Pioche, Nevada | 23.94 | 608.1 | 29.71 | 754.6 | 38 | 3.3 | 54 | S | 4 | 1.8 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair..... | |
| Pittsburg, Pennsylvania | 28.85 | 732.8 | 29.64 | 752.8 | 46 | 7.8 | 92 | W | 8 | 3.6 | ..... | ..... | 10n | ..... | W | 0.47 | 11.9 | Light rain... | |
| Port Huron, Michigan | 28.98 | 736.1 | 29.65 | 753.1 | 36 | 2.2 | 100 | NW | 10 | 4.5 | ..... | ..... | 10n | ..... | Calm | 1.03 | 26.2 | Light rain... | |
| Portland, Maine | 29.81 | 757.2 | 29.86 | 758.4 | 35 | 1.7 | 90 | NE | 16 | 7.2 | ..... | ..... | 10s | ..... | E | 0.21 | 5.3 | Threatening | |
| Portland, Oregon | 29.69 | 754.1 | 29.80 | 756.9 | 47 | 8.3 | 92 | W | 2 | 0.9 | ..... | ..... | 10n | ..... | Calm | 0.12 | 3.0 | Light rain... | |
| Prescott, Arizona | 24.78 | 628.1 | 30.09 | 764.3 | 31 | — 0.6 | 58 | SE | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| Punta Rassa, Florida | 30.02 | 762.5 | 30.04 | 763.0 | 72 | 22.2 | 85 | SE | 14 | 6.3 | ..... | 5k | 0 | SW | ..... | 0.28 | 7.1 | Fair ..... | |
| Red Bluff, California | 29.56 | 750.8 | 29.92 | 760.0 | 54 | 12.2 | 87 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.06 | 1.5 | Cloudy..... | |
| Rochester, New York | 28.89 | 733.8 | 29.60 | 749.3 | 33 | 3.3 | 100 | E | 7 | 3.1 | ..... | ..... | 10n;fg | ..... | Calm | 0.97 | 24.6 | Light rain... | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. | CLOUDS. Direction. Lower. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roseburg, Oregon | 29.18 | 741.2 | 29.74 | 755.4 | 48 | 8.9 | 100 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.04 | 1.0 | Light rain... | |
| Sacramento, California | 29.88 | 758.9 | 29.96 | 761.0 | 54 | 12.2 | 90 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy..... | |
| St. Louis, Missouri | 29.28 | 743.7 | 29.86 | 758.4 | 45 | 7.2 | 68 | SW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.21 | 5.3 | Clear..... | |
| St. Marks, Florida | 30.00 | 762.0 | 30.02 | 762.5 | 60 | 15.6 | 94 | S | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0.36 | 9.1 | Cloudy..... | |
| St. Paul, Minnesota | 28.87 | 733.3 | 29.69 | 754.1 | 42 | 5.6 | 66 | NE | 6 | 2.7 | ..... | 8cs | 0 | Calm | ..... | 0 | 0 | Fair..... | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.61 | 650.5 | 29.94 | 760.5 | 34 | 1.1 | 79 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| San Antonio, Texas | 29.26 | 743.2 | 29.85 | 758.2 | 52 | 11.1 | 86 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| San Diego, California | 29.90 | 759.4 | 29.97 | 761.2 | 57 | 13.9 | 81 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy ..... | |
| Sandusky, Ohio | 29.03 | 737.3 | 29.70 | 754.4 | 42 | 5.6 | 100 | NW | 10 | 4.5 | ..... | ..... | 10s | ..... | NW | 2.26 | 57.4 | Cloudy..... | |
| Sandy Hook, New Jersey | 29.65 | 753.1 | 29.67 | 753.6 | 40 | 4.4 | 100 | NE | 6 | 2.7 | ..... | .. ..... | Fog | ..... | Calm | 2.26 | 57.4 | Foggy ..... | |
| San Francisco, California | 29.92 | 760.0 | 29.99 | 761.7 | 55 | 12.8 | 87 | SW | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.04 | 1.0 | L ght rain... | |
| Santa Fé, New Mexico | 28.17 | 688.5 | 29.71 | 754.6 | 20 | — 1.7 | 56 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Savannah, Georgia | 29.89 | 759.2 | 29.98 | 761.5 | 67 | 19.4 | 84 | SW | 8 | 3.6 | ..... | 2c | Sm'e | W | ..... | Inap. | Inap. | Fair..... | |
| Shreveport, Louisiana | 29.80 | 756.9 | 30.02 | 762.5 | 53 | 11.7 | 73 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Smithville, North Carolina | 29.90 | 759.4 | 29.93 | 760.2 | 60 | 15.6 | 100 | SW | 6 | 2.7 | ..... | 8c | Fog | SW | Calm | 0.03 | 0.8 | Cloudy..... | |
| Springfield, Massachusetts | 29.50 | 749.3 | 29.64 | 752.8 | 36 | 2.2 | 90 | N | 7 | 3.1 | ..... | ..... | 10n | ..... | N | 1.36 | 34.5 | Light rain... | |
| Stockton, Texas | 26.91 | 683.5 | 29.91 | 759.7 | 40 | 4.4 | 18 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Thatcher's Island, Mass | 29.61 | 752.1 | 29.66 | 753.4 | 30 | 3.9 | 91 | E | 28 | 12.5 | ..... | ..... | 10n | ..... | E | 1.42 | 36.1 | Light rain... | |
| Toledo, Ohio, | 29.00 | 736.6 | 29.66 | 753.4 | 43 | 6.1 | 91 | W | 6 | 2.7 | ..... | ..... | 10s | ..... | W | 0.07 | 1.8 | Cloudy..... | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 41 | 5.0 | 63 | S | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Tybee Island, Georgia | 29 94 | 760.5 | 29.97 | 761.2 | 64 | 17.8 | 88 | SW | 8 | 3.6 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear..... | |
| Umatilla, Oregon | 29.50 | 749.3 | ..... | ..... | 44 | 6.7 | 84 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Vicksburg, Mississippi | 29.79 | 756.7 | 30.05 | 763.3 | 56 | 13.3 | 75 | Calm | 0 | 0 | ..... | Haze | Sm'e | Calm | Calm | 0 | 0 | Smoky..... | |
| Virginia City, Montana | 24.16 | 613.6 | 29.64 | 752.8 | 28 | — 2.2 | 66 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Visalia, California | 29.64 | 752.8 | 30.02 | 762.5 | 46 | 7.8 | 92 | Calm | 0 | 0 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear..... | |
| Washington, D. C | 29.61 | 752.1 | 29.72 | 754.9 | 42 | 5.6 | 100 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | SW | 1.55 | 39.4 | Cloudy..... | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 38 | 3.3 | 63 | NE | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Wilmington, N. Carolina | 29.83 | 757.7 | 29.96 | 759.4 | 61 | 16.1 | 100 | SW | 6 | 2.7 | ..... | 2c | Fog | Calm | Calm | 0 | 0 | Fair ..... | |
| Winnemucca, Nevada | 25.52 | 648.2 | 29.88 | 758.9 | 30 | 3.9 | 73 | Calm | 0 | 0 | ..... | 10k | 0 | Calm | ..... | 0 | 0 | Cloudy..... | |
| Wood's Holl, Mass | 29.56 | 750.8 | 29.62 | 752.3 | 48 | 8.9 | 100 | S | 20 | 8.9 | ..... | ..... | Fog | ..... | Calm | 2.13 | 54.1 | Fog..... | |
| Yankton, Dakota | 28.58 | 725.9 | 29.88 | 758.9 | 37 | 2.8 | 81 | W | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Yuma, Arizona | 29.78 | 756.4 | 29.85 | 758.2 | 62 | 11.1 | 64 | SE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 30.03 | 762.7 | 30.09 | 764.3 | 9.0 | —12.8 | 89 | E | 5 | 2.2 | ..... | 2c | 0 | SE | ..... | 0 | 0 | Fair ..... | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I | 29.99 | 761.7 | 30.01 | 762.2 | 77 | 25.0 | 90 | Calm | 0 | 0 | ..... | 2ck | 0 | W | ..... | 0 | 0 | Fair..... | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | 30.07 | 763.8 | 30.08 | 764.0 | 76 | 24.4 | 86 | Calm | 0 | 0 | ..... | 2c | 2s | SE | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I | 29.91 | 759.7 | 29.99 | 761.7 | 81 | 27.2 | ..... | NE | 6 | 2.7 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy..... | F. M. Everett. |
| Paramaribo, D. Guiana, S. A | ..... | ..... | 30.00 | 762.0 | 83 | 28.3 | 83 | NE | ..... | ..... | 2 | 5k | 8ks | E | ..... | 0 | 0 | ½ cloudy.... | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | 30.07 | 763.7 | 30.08 | 763.9 | 82.0 | 27.8 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Medellin, Colombia, S. A | 25.16 | 630.0 | ..... | ..... | 69.5 | 20.8 | 76 | Calm | ..... | ..... | 0 | 3k | 0 | E | ..... | 0.31 | 8. | Cloudy..... | Dr. H. Groot. |
| | | | | | | | | | | | | | | | | 0 | 0 | ..... | Thomas Herran. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Mukuwao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,560 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.6 m.; Concho, 1, 760 ft., or 538.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.6 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,676 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,600 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,776.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5,22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | BAROMETER. As read off. Inches. | BAROMETER. As read off. Millimeters. | BAROMETER. Attached Thermometer. Fahrenheit. | BAROMETER. Attached Thermometer. Centigrade. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Up'er From— | CLOUDS. Direction. Low'r From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | SEA-SWELL. Character. | SEA-SWELL. Direction from— | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.94 | 760.5 | 55 | 12.8 | 54 | 12.2 | 93 | SSE | 3 | 1.3 | ..... | ..... | 10 | ..... | S | 0.004 | 0.10 | ..... | ..... | Drizzling..... | |
| Navy Yard, Pensacola, Fla. | 30.10 | 764.5 | 63 | 17.2 | 63 | 17.2 | 94 | NW | 3 | 1.3 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | ..... | Misty..... | |
| Navy Yard, Portsmouth, N.H | 29.78 | 756.4 | 63 | 17.2 | 35 | 1.7 | 100 | NE | 13 | 5.8 | ..... | ..... | 2 | ..... | ..... | 0.8 | 20. | ..... | ..... | Rainy..... | |
| Naval Hospital, Yokohama, Japan | 29.95* | 760.7* | 49 | 9.4 | 37.8 | 3.2 | 56 | N | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Adams, Panama | 29.89 | 759.2 | 83 | 28.3 | 82 | 27.8 | 83 | NW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Alliance, Piraeus, Greece | 29.77‡ | 756.1‡ | ..... | ..... | 61 | 16.1 | 82 | S | ..... | ..... | 2 | ..... | 6 | ..... | S | ..... | ..... | ..... | ..... | Pleasant..... | |
| Ashuelot, Shanghai, China | 30.47* | 773.9* | 58 | 14.4 | 44 | 6.7 | 92 | E | ..... | ..... | 1 | ..... | 1 | ..... | Calm | ..... | ..... | ..... | ..... | D. clouds.... | |
| Canonicus, New Orleans, La. | 30.01 | 762.2 | 49 | 9.4 | 61 | 16.1 | 100 | Var. | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Foggy ..... | |
| Colorado, New York, N. Y. | 29.66‡ | 753.4‡ | ..... | ..... | 40 | 4.4 | 100 | NE | 4 | 1.8 | ..... | ..... | 10 | ..... | NE | 1.42 | 36.1 | ..... | ..... | Light rain.... | |
| Constitution, N. 41° 30′ W. 41° 44′ | 29.98‡ | 761.5‡ | ..... | ..... | 42 | 5.6 | 83 | NW | ..... | ..... | 7 | ..... | 6 | ..... | NW | ..... | ..... | Rough | NW | Fair..... | |
| Despatch, Constantinople, Turkey. | 29.87 | 758.7 | 78 | 25.6 | 51 | 10.6 | 79 | SW | ..... | ..... | 4 | ..... | 10 | ..... | SW | ..... | ..... | ..... | ..... | Raining..... | |
| Enterprise, New Orleans, La. | 30.00‡ | 762.0‡ | ..... | ..... | 62 | 16.7 | 94 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Foggy ..... | |
| Franklin, Norfolk, Va. | 29.78‡ | 756.4‡ | ..... | ..... | 57 | 13.9 | 87 | NW | 2 | 0.9 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Gettysburg Valetta, Malta | 29.91‡ | 759.7‡ | ..... | ..... | 64 | 17.8 | ?? | NW | ..... | ..... | 4 | ..... | 5 | ..... | NW | Blank | Blank | ..... | ..... | Fair ..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.11 | 764.8 | 73 | 22.8 | 73 | 22.8 | 81 | NE | ..... | ..... | 1–2 | ..... | 8 | ..... | NE | ..... | ..... | Mod'ate Ground | NW | Cloudy..... | |
| Marion, Piraeus, Greece | 29.77 | 756.1 | 60 | 15.6 | 61 | 16.1 | 71 | S | ..... | ..... | 2 | ..... | 10 | ..... | S | Light | Light | ..... | ..... | Cloudy..... | |
| Michigan, Erie, Pa. | 29.18 | 741.2 | 69 | 20.6 | 44 | 6.7 | 92 | WNW | ..... | ..... | 3 | ..... | 10 | ..... | WNW | ..... | ..... | ..... | ..... | Raining..... | |
| Monongahela, Hong-Kong, China. | 30.28* | 769.1* | 64 | 17.8 | 64 | 17.8 | 83 | E | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Smooth | ..... | D. clouds..... | |
| New Hampshire, Port Royal, S. C. | 30.16 | 766.1 | 66 | 18.9 | 64 | 17.8 | 100 | WSW | 10 | 4.5 | ..... | ..... | 2 | ..... | W | 0 | 0 | ..... | ..... | Fair ..... | |
| Omaha, S. 2° 56′, W. 30° 27′ | 30.10* | 764.5* | 85 | 29.4 | 84.5 | 29.2 | 76 | ESE | 4 | 1.8 | ..... | ..... | 4 | ..... | SE | 0 | 0 | Mod'ate | E | Pleasant,.... | |
| Onward, Callao, Peru | 29.96† | 761.0† | ..... | ..... | 73 | 22.8 | 90 | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, Vera Cruz, Mexico | 29.95‡ | 760.7‡ | ..... | ..... | 75 | 23.9 | 95 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Foggy ..... | |
| Palos, Shanghai, China | 30.50* | 774.7* | 60 | 15.6 | 40 | 4.4 | 82 | ESE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Pensacola, Honolulu, H. I. | 30.14 | 765.5 | 74 | 23.3 | 71 | 21 7 | 80 | NE | 3 | 1.3 | ..... | ..... | 8 | ..... | NE | 0 | 0 | ..... | ..... | Cloudy..... | |
| Plymouth, Norfolk, Va. | 29.81‡ | 757.2‡ | ..... | ..... | 58 | 14.4 | 88 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Powhatan, N. 22° 33′ 00″, W. 78° 03′ 30″ | 30.07‡ | 763.8‡ | ..... | ..... | 79 | 26.1 | 95 | E | 4.8 | 2.1 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Ranger, Amoy, China | 30.43* | 772.9* | ..... | ..... | 58 | 14.4 | 76 | NNE | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Overcast..... | |
| Rio Bravo, Brownsville, Texas | ..... | ..... | ..... | ..... | 60 | 15.6 | 100 | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | |
| Santee, Annapolis, Md. | 29.80* | 756.9* | 66 | 18.9 | 44 | 6.7 | 84 | SW | ..... | ..... | 2 | ..... | 9 | ..... | W | 0.99 | 25.1 | ..... | ..... | Cloudy..... | |
| Saratoga, Washington, D. C. | 29.71* | 754.6* | ..... | ..... | 46 | 7.8 | ?? | WSW | ..... | ..... | 1 | ..... | 10 | ..... | WSW | Heavy | Heavy | ..... | ..... | Overcast..... | |
| St. Louis, League Island, Pa | 29.68 | 753.9 | 57 | 13.9 | 41 | 5.0 | 100 | WNW | 6 | 2.7 | ..... | ..... | 10 | ..... | W | 0.78 | 19.8 | ..... | ..... | Light fog..... | |
| Supply, N. 50° 15′ W. 15° | 30.57 | 776.5 | 54 | 12.2 | 50 | 10.0 | 72 | SSE | ..... | ..... | 4 | ..... | 10 | ..... | SE | ..... | ..... | Smooth | SW | Cloudy..... | |
| Swatara, Santa Marta, New Grenada, S. A. | 29.90* | 759.4* | ..... | ..... | 85 | 29.4 | 76 | NE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | D. clouds..... | |
| Tennessee, Singapore, India | 29.97* | 761.2* | 84 | 28.9 | 83 | 28.3 | 83 | NNE | 2 | 0.9 | ..... | ..... | 6 | ..... | NE | 0 | 0 | Smooth | ..... | D. clouds..... | |
| Trenton, Smyrna, Turkey | 29.86‡ | 758.4‡ | ..... | ..... | 55 | 12.8 | 100 | SSE | ..... | ..... | 2 | ..... | 10 | ..... | NW | 1.5 | 38. | Smooth | ..... | Raining..... | |
| Tuscarora, N. 26° 00,′ W. 113° 50′ | 29.99 | 761.7 | 64 | 17.8 | 62 | 16.7 | 83 | NNW | ..... | ..... | 3 | ..... | 8 | ..... | NW | 0 | 0 | Mod'ate | NW | Cloudy..... | |
| Vandalia, Piraeus, Greece | 29.69‡ | 754.1‡ | ..... | ..... | 62 | 16.7 | 72 | SSW | ..... | ..... | 1 | ..... | 5 | ..... | SW | ..... | ..... | ..... | ..... | Fair ..... | |
| Wabash, Boston, Mass. | 29.70‡ | 754.4‡ | ..... | ..... | 37 | 2.8 | 90 | NE | 16 | 7.2 | ..... | ..... | 10 | ..... | Calm | 1.88 | 47.8 | ..... | ..... | Light rain.. | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity.
*It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

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

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | Force. | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | Character. | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama, N. 43° 30′, W. 125° | | | 29.88† | 758.9† | | | | SE | | | 4 | | 10 | | | Mod'ate | S | Raining | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio, N. 27° 59′, E. 124° 16′ | | | | | 67 | 13.9 | | NNW | | | 6 | | 8 | | NNW | Smooth | NNW | D. clouds | Capt. Searle. |
| S. S. Colima, N. 18° 17′, W. 103° 30′ | | | 29.85† | 758.2† | 75 | 23.9 | 86 | | | | 3 | | 6 | | ESE | Small easy | W | Misty | Capt. Whitebury. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Austin. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. †Aneroid.

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

Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.

### WHITE STAR LINE MARINE SERIES.

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

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | Force. | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | Character. | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, N. 46° 20′, W. 44° 15′ | | | 29.80† | 756.9† | 34 | 1.1 | ?? | WNW | | | 8 | | 10 | | NW | Very high. | WNW | Squally | Capt. W. H. Thompson |
| S. S. Celtic, Queenstown, Ireland | | | 30.54† | 775.7† | 50 | 10.0 | 86 | SSE | | | 3 | | 10 | E | | Smooth | NW | Overcast | Capt. B. Gleadell. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

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

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

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

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | Force. | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | Character. | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| S. S. Belgic | | | | | | | | | | | | | | | | | | | Capt. John Metcalf. |
| S. S. Gaelic, N. 31° 28′, E. 155° 30′ | | | 29.97† | 761.2† | 62 | 16.7 | ?? | SW | | | 4 | | k | | W | Confused | | Squally | Capt. W. H. Kidley |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid

### NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | Force. | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | Character. | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

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

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | Character | Direction From— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois, N. 45° 46′, W. 37° 08′ | | | 29.64* | 752.8* | 51 | 10.6 | 93 | WSW | | | 6 | | 5 | | WSW | Heavy | WSW | Rain & hail | Captain Shackelford. |
| S. S. Indiana, Philadelphia, Pa | | | 29.86† | 758.2† | 46 | 7.8 | 100 | WSW | | | 3 | | 6 | | SSW | | | Cloudy | Captain Sargent. |
| S. S. Ohio, Liverpool | | | 30.35 | 770.9 | 54 | 12.2 | 87 | NE | | | 3 | | 4 | | NE | | | Hazy | Captain Morrison. |
| S. S. Pennsylvania, N. 46° 56′, W. 45° 17′ | | | 28.68 | 728.5 | 35 | 1.7 | 100 | WNW | | | 8 | | 10 | | ESE | Heavy | N; NW; NE | Hurricane | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid †Aneroid; unreliable, corrected for elevation, instrumental error not known.

## RED STAR LINE MARINE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Rendle. |
| S. S. Switzerland, N. 41° 52′, W. 49° 47′ | | | 30.17* | 766.3* | | | | NW | 25 | 11.2 | | | 5 | | NW | Heavy | NW | D. clouds | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

*Aneroid; regulated to standard at Antwerp.

## ALLAN LINE MARINE SERIES.

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

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

## MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, N. 38° 10′ W. 74° 15′ | | | 29.70 | 754.4 | 51 | 10.6 | 93 | WSW | 14 | 6.3 | | | 10d? | | W | Swell | S | Clear? | Capt. James Jorgensen |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 30.12 | 765.0 | —33 | —36.1 | 86* | NW | 1 | 0.4 | | 0 | 0 | | | | | Clear | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Determined by use of hair hygrometer.

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

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

Albert J. Myer

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

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 14, 1878.

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

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:38 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

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

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.09 | 764.3 | 63.0 | 17.2 | ..... | NE | ..... | ..... | 5 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair..... | Dr. Olive. |
| Nemours | ..... | ..... | 30.04 | 763.0 | 63.7 | 17.6 | 70 | NNW | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0 | 0 | Fair ..... | Michel. |
| Algiers | ..... | ..... | 30.07 | 763.6 | 56.5 | 13.6 | 55 | ENE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | Covered..... | Towiliere. |
| La Calle | ..... | ..... | 30.07 | 763.8 | 54.0 | 12.2 | 57 | NW | ..... | ..... | 7 | ..... | 8 | ..... | ..... | 0.20 | 5. | Very cloudy | Boulangeot. |
| Tunis | ..... | ..... | 29.97 | 761.3 | 65.1 | 18.4 | 47 | NW | ..... | ..... | 9 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy..... | Jacques. |
| Sfax | ..... | ..... | 30.12 | 765.0 | 75.2 | 24.0 | ..... | WSW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair ..... | Gau. |
| Saida | ..... | ..... | 30.07 | 763.6 | 72.1 | 22.3 | 82 | SSW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair.. | Herbin. |
| Tebessa | ..... | ..... | 30.06 | 763.2 | ..... | ..... | ..... | NNW | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0 | 0 | Fair ..... | Bourgeois. |
| Geriville | ..... | ..... | 30.15 | 765.7 | 59.4 | 15.2 | 85 | W | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0 | 0 | Covered..... | Lemaillot. |
| Laghouat | ..... | ..... | 30.12 | 765.1 | 77.0 | 25.0 | 28 | E | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair ..... | Guyot. |
| Biskra | ..... | ..... | 30.11 | 764.7 | 53.4 | 11.9 | 33 | WNW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair ..... | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

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

### AUSTRIAN SERIES.

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

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.49 | 749.0 | 30.07 | 763.6 | 37.0 | 2.8 | 34 | NE | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stoar |
| Cracow, I. R. Observatory | 29.22 | 742.8 | 30.03 | 762.7 | 31.6 | — 0.2 | 85 | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbicki. |
| Eperies | 29.04 | 737.5 | 29.95 | 760.8 | 32.0 | 0.0 | 52 | N | ..... | ..... | 2 | ..... | 9s | ..... | S | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.71 | 729.2 | 30.01 | 762.2 | 36.1 | 2.3 | 44 | NW | ..... | ..... | 6 | ..... | 3 | ..... | ..... | 0.001 | 0.02 | ..... | Andreas Rospini. |
| Hermannstadt | 28.35 | 720.1 | 29.80 | 756.8 | 42.1 | 5.6 | 50 | E | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.118 | 3.00 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.72 | 729.6 | 30.13 | 765.4 | 32.0 | 0.0 | 78 | WNW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0.217 | 5.5 | ..... | Prof. C. Wagner |
| Lemberg | 28.87 | 733.3 | 29.91 | 759.6 | 30.2 | — 1.0 | 90 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.039 | 1.0 | ..... | Dr. T. Stanecki. |
| Pola | 29.81 | 757.2 | 29.93 | 760.1 | 44.8 | 7.1 | 36 | ENE | ..... | ..... | 4 | ..... | 10ks | ..... | ..... | 0.094 | 2.4 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.45 | 748.0 | 29.93 | 760.2 | 37.4 | 3.0 | 57 | N | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.69 | 751.6 | 29.88 | 758.9 | 39.6 | 4.2 | 62 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Karl Stancel. |
| Trieste | 29.86 | 758.4 | 29.96 | 761.0 | 46.0 | 7.8 | 26 | ENE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair ..... | P. Busin. |
| Vienna | 29.34 | 745.2 | 30.09 | 764.3 | 32.7 | 0.4 | 64 | NNW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0.059 | 1.5 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

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

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.78 | 730.9 | 30.34 | 770.7 | 37.0 | 2.8 | 67 | N | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0.122 | 3.1 | ..... | Prof. M. Passau. |
| Brussels | 30.15 | 765.8 | 30.36 | 771.1 | 40.6 | 4.8 | 71 | NNW | ..... | ..... | 1 | 1 | 7 | ..... | N | 0.047 | 1.2 | ..... | Royal Observatory. |
| Furnes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.157 | 4.0 | ..... | M. E. de Cae. |
| Maeseyck | 30.20 | 767.0 | 30.32 | 770.2 | 41.7 | 5.4 | 64 | N | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.47 set. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.37 | 771.4 | 30.47 | 773.9 | 44.4 | 6.9 | ..... | N | 8 | 3.6 | ..... | ..... | 5 | ..... | ..... | 0.010 | 0.25 | Blue sky..... | W. Boswell. |
| Ardrossan | 30.48 | 774.2 | 30.49 | 774.4 | 45 | 7.2 | ..... | SE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.51 | 774.9 | 47.0 | 8.3 | ..... | SSW | 9 | 4.0 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | D clouds..... | S. Call, for Dr. Robinson. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.52 | 775.2 | 42.9 | 6.1 | ..... | WNW | 5 | 2.2 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | John Hartnup. |
| Birr Castle, (Parsonstown) | 30.29 | 769.4 | 30.49 | 774.4 | 50.6 | 10.3 | ..... | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | J. Dreyer. |
| Bradford, Yorkshire | 30.08 | 764.0 | 30.48 | 774.2 | 44.6 | 7.0 | ..... | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.01 | 0.3 | Overcast..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 30.01 | 762.2 | 30.04 | 763.0 | 81.5 | 27.5 | ..... | NE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 30.47 | 773.9 | 48.0 | 8.9 | ..... | NW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | H. Todd. [H. C. |
| Cardington | ..... | ..... | 30.50 | 774.7 | 46.2 | 7.9 | ..... | N | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | John McLaren. |
| Chatham, School M. E | 30.34 | 770.6 | 30.47 | 773.9 | 44.2 | 6.8 | ..... | NW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.91 | 734.3 | 30.43 | 772.9 | 41.8 | 5.4 | ..... | E | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | Fine..... | Alexander Watt. |
| Donaghadee | 30.46 | 773.7 | 30.49 | 774.4 | 44 | 6.7 | ..... | SW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 30.43 | 772.9 | 30.46 | 773.7 | 45 | 7.2 | ..... | NNE | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | ½ clouded.... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 30.50 | 774.7 | 43.9 | 6.6 | ..... | NW | 4.0 | 1.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Thomas Mackereth. |
| Falmouth, Observatory | 30.30 | 769.6 | 30.54 | 775.7 | 43.5 | 6.4 | ..... | E | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | The Staff. |
| Fort Napier, (Natal) | 27.46 | 697.5 | 29.67 | 753.6 | 80.5 | 26.9 | ..... | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.73 | 755 1 | 29.96 | 761.0 | 89.0 | 31.7 | ..... | NW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | |
| Galway, Queen's College | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.00 | 762.0 | 30.06 | 763.5 | 60.0 | 15.6 | ..... | E | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Corpl. C. Aitken, A.H.C. |
| Glasgow, Observatory | 30 27 | 768.8 | 30.47 | 773.9 | 43.2 | 6.2 | ..... | SSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | D. G. Maclean. |
| Great Yarmouth | 30.43 | 772.9 | 30.44 | 773.2 | 42 | 5.6 | ..... | NNW | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | Showery..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 30.31 | 769.9 | 30.48 | 774.2 | 47.3 | 8.5 | ..... | N | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff, for G. B. Airy. |
| Guernsey | 30.28 | 769.1 | 30.50 | 774.7 | 44 | 6.7 | ..... | NE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 30.52 | 775.2 | 50 | 10.0 | ..... | E | ..... | ..... | 4 | ..... | 2c | ..... | ..... | 0 | 0 | Fine..... | M. P. Moyle. |
| Holyhead | 30.50 | 774.7 | 30.55 | 776.0 | 44 | 6.7 | ..... | NW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | John Tilston. |
| Jersey | 30.23 | 767.8 | 30.53 | 775.4 | 46.3 | 7.4 | ..... | NE | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 30.50 | 774.7 | 45.3 | 7.4 | ..... | N | 8 | 3.6 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff. |
| Kingstown | 30.50 | 774.7 | 30.53 | 775.4 | 45 | 7.2 | ..... | SE | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 30.44 | 773.2 | 46.0 | 7.8 | ..... | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.77 | 756.1 | 29.84 | 757.9 | 60.4 | 15.8 | ..... | NW | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Sgt. Fred. Travis, A. H. |
| Nairn | 30.26 | 768.6 | 30.36 | 771.1 | 45 | 7.2 | ..... | Calm | ..... | ..... | 0 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded.... | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 30.05 | 763.3 | 76.8 | 24.9 | ..... | S | ..... | ..... | 1 | ..... | 6 | ..... | ..... | Blank | Blank | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 30.29 | 769.4 | 30.49 | 774.4 | 46.7 | 8.2 | ..... | Calm | ..... | ..... | 0 | ..... | 10ck;k | ..... | WNW | 0 | 0 | Overcast..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.97 | 761.2 | 30.52 | 775.2 | 43.7 | 6.5 | ..... | WNW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.50 | 774.7 | 45 | 7.2 | ..... | N | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | Mr. Lucas. |
| Plymouth | 30.46 | 773.7 | 30.54 | 775.7 | 43.2 | 6.2 | ..... | E | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | John Merrifield. |
| Roche's Point | 30.45 | 773.4 | 30.49 | 774.4 | 48 | 8.9 | ..... | SSE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Cloudy..... | W. Kennedy. |
| Saint Ann's Head | 30.37 | 771.4 | 30.54 | 775.7 | 44 | 6 7 | ..... | S | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 30.16 | 773.7 | 43.2 | 6.2 | ..... | WNW | 9 | 4.0 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.76 | 755.9 | 56.0 | 13.3 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast..... | Sergt. W. H. Lyne. |
| Sheffield | 30.20 | 767.1 | 30.49 | 774.4 | 46.1 | 7.8 | ..... | NNW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0 | 0 | Hazy..... | W. F. Cooper. |
| Silloth Rectory | 30.47 | 773.9 | 30.50 | 774.7 | 47.4 | 8.6 | 63 | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | D. clouds..... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 30.11 | 764.8 | 30.51 | 774.9 | 41.5 | 5.3 | ..... | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling..... | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 30.37 | 771.4 | 41 | 5.0 | ..... | ESE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Smith. |
| Stratfield Turgiss | 30.30 | 769.6 | 30.53 | 775.4 | 45.2 | 7.3 | ..... | N | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. C. H. Griffith, F.M.S |
| Thurso | ..... | ..... | 30.44 | 773.2 | 44 | 6.7 | ..... | NNW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 30.53 | 775.4 | 52 | 11.1 | ..... | SE | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 30.44 | 773.2 | 50.8 | 10.4 | ..... | SSE | 19 | 8.5 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Misty..... | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.82 | 757.4 | 71.0 | 21.7 | 73 | S | ..... | ..... | 3 | ..... | 9k | ..... | ..... | 0 | 0 | Cloudy..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.83 | 757.7 | 30.01 | 762.3 | 84.4 | 29.1 | 62 | W | 9.0 | 4.0 | ..... | 1 | 8 | ..... | WSW | 0 | 0 | Cloudy: fine | C. Meldrum. |
| Melbourne, Observatory | 29.84 | 757.9 | 29.93 | 760.2 | 65.4 | 18.6 | 90 | SE | 10 | 4.5 | ..... | ..... | 10 | ..... | ..... | 0.03 | 0.8 | Drizzling.... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

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

| Marine Series. Vessels. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather | Observer. |
|---|---|---|---|---|
| S. S. Algeria, N. 46° 30′, W. 69° 18′ | 10* | SSW | Hazy..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | Capt. C. C. Prehn. [R. |
| S. S. Peruvian | ..... | ..... | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire, N. 38° 15′ W. 69° 35′ | 2 | SW | Blue sky..... | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | |

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.23 | 666.2 | | | 70.2 | 21.2 | 82 | NE | | | 1 | p | 1d | | E | 0 | 0 | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.13 | 765.2 | 30.17 | 766.4 | 32.9 | 0.5 | 64 | N | | | 6 | | 1 | | | | | | |
| Fanöe | 30.25 | 768.4 | 30.27 | 768.9 | 36.1 | 2.3 | 72 | NW | | | 2 | | 7 | | | | | | |
| Godthaab, (Greenland) | 29.72 | 754.9 | 29.76 | 756.0 | 5.0 | —15.0 | 87 | N | | | 4 | | 9 | | | | | | |
| Stykkisholm, (Iceland) | 29.78 | 756.5 | 29.83 | 757.6 | 45.1 | 7.3 | 98 | S | | | 7 | | 10 | | | | | | |
| Thorshavn, (Faröe) | 30.36 | 771.1 | 30.39 | 772.0 | 45.9 | 7.7 | 91 | S | | | 1 | | 10 | | | | | | Raining |
| Vestervig | 30.10 | 764.4 | 30.26 | 768.7 | 36.0 | 2.2 | 72 | Calm | | | 0 | | 4 | | | | | | Foggy |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 30.00 | 762.1 | 30.56 | 776.1 | 50.0 | 10 | 78 | NE | | | 1 | | 2 | | | 0.016 | 0.4 | Slightly cl'dy | Collignon, Director. |
| Amiens, Normal School | 30.34 | 770.6 | 30.45 | 773.5 | 45.7 | 7.6 | 72 | NW | | | 3 | | 2 | | N | 0 | 0 | Slightly cl'dy | Bonvarne, Director. |
| Avignon, Normal School | 30.16 | 766.1 | 30.24 | 768.1 | 46.4 | 8 | 40 | N | | | 8 | | 0 | | | 0 | 0 | Very clear | Mr. Giraud, Director |
| Bar-sur-Seine | 29.83 | 757.6 | 30.42 | 772.7 | 40.6 | 4.8 | 66 | NNE | | | 2 | | 8kn | | NE | 0.067 | 1.7 | Very cloudy | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 44.1 | 6.7 | 48 | N | | | 2 | | 8 | | N | 0 | 0 | Very cloudy | Normal School. |
| Besançon | 29.47 | 748.6 | 30.41 | 772.5 | 37.6 | 3.1 | 85 | NE | | | 3 | | 5 | | NE | 0.087 | 2.2 | Cloudy | Normal School. |
| Bourg-en-Bresse | 29.43 | 747.5 | 30.35 | 770.9 | 46.0 | 7.8 | 80 | N | | | 4 | | 5kn | | N | 0.04 | 1. | Cloudy | Normal School. |
| Bourges, Normal School | 29.80 | 756.8 | 30.36 | 771.2 | 46.0 | 7.8 | 91 | NE | | | 1 | | 2 | | NE | 0 | 0 | Slightly cl'dy | A. Wagner, Director. |
| Carcassonne, Normal School | 29.91 | 759.7 | 30.34 | 770.5 | 48.0 | 8.9 | 69 | NW | | | 2 | | 1k | | E | 0 | 0 | | The Staff. |
| Caen | 30.43 | 772.9 | 30.50 | 774.8 | 45.3 | 7.4 | 51 | N | | | 2 | | 0 | | | 0.08 | 2. | Clear | Vateau, Director. |
| Chartres, Normal School | 29.80 | 756.9 | 30.39 | 771.8 | 41.7 | 5.4 | 91 | N | | | 6 | | 5 | | NE | 0 | 0 | Cloudy | Normal School. |
| Châlons-sur-Marne, N. Sch'l | 30.07 | 763.6 | 30.39 | 772.0 | 42.6 | 5.9 | 62 | NW | | | 2 | | 7 | | N | 0 | 0 | | Lequin, Director. |
| Clermont-Fd., Puy de D. Obs | 29.96 | 735.5 | 30.38 | 771.6 | 38.3 | 3.5 | 60 | N | | | 3 | | 5ck | | NW | 0 | 0 | Cloudy | T. Leloup, Director. |
| Commercy, Normal School | 29.43 | 747.4 | 30.34 | 770.7 | 37.4 | 3. | 69 | NW | | | 2 | | 10 | | N | 0.122 | 3.1 | Covered | Alluard, Director. |
| Commune de Grésque* | 29.98 | 736.0 | 30.12 | 765.0 | 48.7 | 9.3 | 21 | NW | | | 2 | | 5 | | NW | 0 | 0 | Cloudy | Dr. Goulet, Director. |
| Grenoble | | | | | | | | | | | 4 | | 0 | | | 0 | 0 | Clear | M. Kina. |
| La Roche-sur-Yon, N. School | 30.22 | 767.6 | 30.45 | 773.4 | 42.4 | 5.8 | 63 | NNE | | | 2 | | 5 | | NNE | 0 | 0 | Cloudy | Normal School. |
| Le Mans, Normal School | 30.17 | 766.3 | 30.50 | 774.6 | 40.3 | 4.6 | 93 | NE | | | 6 | | 8 | | NE | 0 | 0 | Very cloudy | Mouillot, Director. |
| Lons-Le-Saulnier, N. School | 29.34 | 745.2 | 30.30 | 769.7 | 34.2 | 1.2 | 88 | NE | | | 2 | | 10 | | N | 0.071 | 1.80 | Snowing | Poirrier, Director. |
| Lorient, Naval Observatory | 30.39 | 772.0 | 30.49 | 774.5 | 44.6 | 7.0 | 62 | NE | | | 3 | | 0 | | | 0 | 0 | Clear | Youdez, Director. |
| MÂcon, Normal School | 29.60 | 751.8 | 30.28 | 769.1 | 38.1 | 3.4 | 63 | N | | | 4 | | 5 | | | 0.020 | 0.5 | Cloudy | T. Carré, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. Marchal, Director. |
| Mirecourt | 29.27 | 743.4 | 30.37 | 771.3 | 36.5 | 2.5 | 61 | N | | | 2 | | 2 | | S | 0 | 0 | Slightly cov. | M. A. Schuster, Dir. |
| Nismes, Normal School | 30.05 | 763.3 | 30.26 | 768.5 | 49.3 | 9.6 | 40 | N | | | 4 | | 0 | | | 0 | 0 | Clear | Normal School. |
| Orleans, Normal School | 30.05 | 763.3 | 30.44 | 773.1 | 41.0 | 5 | 66 | | | | | | 5 | | | 0 | 0 | Partly cl'dy | Boyer, Director. |
| Paris, Observatory | 30.20 | 767.1 | 30.45 | 773.5 | 42.3 | 5.7 | 31 | NE | | | 1 | | 8 | | N | 0 | 0 | Very cloudy | Bernard, Director. |
| Privas | 29.13 | 739.8 | 30.22 | 767.5 | 48.4 | 9.1 | 69 | N | | | 6 | | 1 | | S | 0 | 0 | Clear | National Observatory. |
| Puy de Dome (Summit) | | | | | | | | | | | | | | | | | | | Normal School. |
| Rochefort, Naval Obs'y | 30.45 | 773.4 | 30.48 | 774.2 | 47.8 | 8.8 | 78 | NE | | | 3 | | 8 | | NE | 0 | 0 | ¾ covered | Alluard, Director. |
| Rouen, Normal School | 30.39 | 771.8 | 30.47 | 774.0 | 46.6 | 8.1 | 60 | N | | | 6 | | 5 | | NNE | 0 | 0 | Cloudy | Lt. Decante, Director. |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | F. Lucard, Director. |
| Tarbes, Normal School | 29.20 | 741.6 | 30.30 | 769.6 | 50.0 | 10 | 86 | SSW | | | 2 | | 0 | | | 0 | 0 | Clear | M. H. Hercouet. |
| Villefranche | 29.47 | 748.6 | 30.21 | 767.4 | 40.8 | 4.9 | 62 | NNW | | | 4 | | 5 | | N | 0.016 | 0.4 | Cloudy | T. Hugues, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | Vilot, Director |
| Fort de France, Martinique | 29.88 | 759.0 | 29.91 | 759.7 | 80.6 | 27 | | | | | | | | | | 0 | 0 | | L'Abbé Marchési |
| Lyons | | | 30.37 | 771.3 | 39.0 | 3.9 | | | | | | | 6 | | | 0 | 0 | | M. Jeys. |
| Marseilles, Observatory | | | 30.08 | 764.0 | 50.9 | 10.5 | 34 | NW | | | 4 | | 0 | | | 0 | 0 | Clear | The Staff. |
| Mont-Louis | 24.93 | 633.1 | 30.24 | 768.1 | 34.2 | 1.2 | 30 | N | 3.7 | 1.67 | | | 0 | | | 0.028 | 0.7 | | Mr. Falguère. |
| Nice | 29.94 | 760.4 | 30.02 | 762.4 | 55.0 | 12.8 | 35 | S | | | 6 | | 1 | | NW | 0 | 0 | Clear | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 30.15 | 765.9 | 30.43 | 772.9 | 43.2 | 6.2 | 39 | NNE | | | 3 | | 5 | | NNE | Inap. | Inap. | | Marié Davy, Director. |
| Perpignan | | | 30.27 | 768.8 | 50.5 | 10.3 | 38 | NE | 20.6 | 9.17 | | | 0 | | | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.53 | 572.2 | | | 31.1 | — 0.5 | | NW | | | 1 | | 0 | | | 0.256 | 6.5 | Clear | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 30.28 | 769.0 | 30.44 | 773.2 | 44.2 | 6.8 | 43 | NNW | | | 2 | | 5 | | | 0.024 | 0.6 | | E. Renou. |
| Toulouse, Observatory | 29.64 | 752.9 | 30.37 | 771.5 | 43.0 | 6.1 | 54 | N | | | 1 | | 1 | | | 0 | 0 | | The Staff. |
| Tours | 30.24 | 768.1 | 30.44 | 773.1 | 42.3 | 5.7 | 46 | E | | | 3 | | 3 | | E | 0 | 0 | | C. Marquet. |
| Versailles, (near Paris) | | | 30.44 | 773.1 | 44.6 | 7.0 | 35 | NE | | | 2 | | 7 | | | 0.002 | 0.06 | Cloudy | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.37 | 771.5 | 30.40 | 772.2 | 48.0 | 6.1 | 84 | ESE | 6.7 | 3.0 | | 5c | | W | | 0 | 0 | Cloudy | Mare Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Cler mont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Grésque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 185 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

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

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. nches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 29.99 | 761.7 | 30.17 | 766.3 | 35.8 | 2.1 | 43 | NE | | | 1 | | 8 | | | 0.033 | 0.84 | | Prof. Arndt. |
| Breslau | 29.54 | 750.3 | 30.07 | 763.8 | 32.5 | 0.3 | 86 | WNW | | | 2 | | 8 | | | 0.008 | 0.20 | | Royal University Obs'y |
| Carlsruhe | 29.80 | 756.9 | 30.24 | 768.2 | 38.3 | 3.5 | 61 | N | | | 1 | | 9 | | | 0.197 | 5.0 | | Albert Senz. |
| Cassel | 29.62 | 752.3 | 30.23 | 767.8 | 35.6 | 2.0 | 68 | NNW | | | 7 | | 7 | N | | 0.209 | 5.32 | Snow-squall | Dr. H. Möhl. |
| Crefeld | 30.13 | 765.2 | 30.29 | 769.4 | 42.4 | 5.8 | 41 | N | | | 5 | | 4k | | | 0.04 | 1. | | Director Lose. |
| Emden | 30.35 | 770.8 | 30.38 | 771.7 | 40.1 | 4.5 | 43 | NNE | | | 1 | | 5 | | | 0 | 0 | | Prof. Prestel. |
| Frankfort on the Main | 29.93 | 760.1 | 30.31 | 769.8 | 42.6 | 5.9 | 39 | NNW | | | 2 | | 5 | | | 0.008 | 0.2 | | Physical Society. |
| Friedrichshafen | 28.78 | 731.0 | 30.29 | 769.4 | 31.6 | — 0.2 | 96 | ENE | | | 2 | | 7 | NNE | | 0.118 | 3.0 | | M. Wilhelm. |
| Hamburg | 30.17 | 766.2 | 30.24 | 768.1 | 36.0 | 2.2 | 63 | N | | | 4 | | 10 | | | Inap. | Inap. | Snowing | Captain F. Hegemann. |
| Kiel | 30.21 | 767.3 | 30.23 | 767.7 | 35.4 | 1.9 | 63 | W | | | 4 | | 6 | | | 0.031 | 0.79 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.92 | 760.0 | 30.00 | 762.0 | 33.6 | 0.9 | 64 | N | | | | | | | | 0.068 | 1.72 | Snowing | Prof. E. Luther. |
| Köslin | | | 30.07 | 763.8 | 31.6 | — 0.3 | | N | | | 2 | | 2 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.77 | 756.1 | 30.21 | 767.3 | 34.2 | 1.2 | 63 | NNW | | | 4 | | 7 | NW | | 0.031 | 0.8 | Snowing | Prof. Bruhns. |
| Memel, Naval School | 29.93 | 760.2 | 29.98 | 761.4 | 32.2 | 0.1 | 71 | N | | | 5 | | 2k | | | | | | Reinbrech von Skalweit. |
| Neufahrwasser | 30.02 | 762.6 | 30.04 | 763.0 | 34.5 | 1.4 | 62 | NNW | | | 3 | | 7 | | | 0.063 | 1.6 | | A. Lothes. |
| Posen | 29.82 | 757.4 | 30.12 | 765.0 | 33.8 | 1.0 | 79 | NW | | | 3–4 | | 7 | | | 0.006 | 0.15 | Cloudy | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.77 | 756.1 | 30.34 | 770.7 | 37.8 | 3.2 | 60 | Calm | | | 0 | | 5 | NNW | | 0.102 | 2.61 | | Dr. Schur. |
| Stuttgart | 29.31 | 744.4 | 30.30 | 769.5 | 33.8 | 1.0 | 79 | N | | | 1 | | 10 | | | 0.118 | 3.0 | | Prof. Schoder. |
| Treves, (Trier) | 29.70 | 754.4 | 30.23 | 767.8 | 39.6 | 4.4 | 53 | WSW | | | 6 | | 6 | | | 0 | 0 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.65 | 727.7 | 30.24 | 768.0 | 32.7 | 0.4 | 92 | NNW | 7 | 3 | | | 8kn | | N | 0.098 | 2.5 | | Dr. Von Bebber. |
| Wustrow, Naval School | 30.21 | 767.3 | 30.25 | 768.3 | 33.1 | 0.6 | 72 | NNE | | | 4 | | 3 | | | 0 | 0 | Clear. | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.32 | 744.6 | 29.71 | 754.6 | 59.2 | 15.1 | | SW | | | 6.0 | | | | | | | ⅛ clear | Dr. J. F. J. Schmidt. |

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

## INDIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.86 | 758.4 | 29.91 | 759.7 | 77.0 | 25.0 | 79 | WSW | 40.0? | 17.9? | | | 1 | | | 0 | 0 | D. clouds | |
| Deesa | 29.42 | 747.1 | 29.88 | 758.9 | 94.0 | 34.4 | 21 | SW | | | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.90 | 759.5 | 29.94 | 760.5 | 83.9 | 28.8 | 80 | W | 7.0 | 3.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.90 | 708.6 | 29.86 | 758.4 | 90.6 | 32.6 | 36 | NNW | | | | | 2 | | | 0 | 0 | Dust-whirl | |
| Lahore | 29.13 | 739.9 | 29.88 | 759.0 | 75.3 | 24.1 | 50 | N | 1.3 | 0.6 | | | 6 | | | | | Drizzling | |
| Belgaum | 27.42 | 696.6 | 29.93 | 760.1 | 85.4 | 29.7 | 58 | W | 6.0 | 2.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.93 | 734.9 | 29.83 | 757.7 | 81.8 | 27.7 | 36 | Calm | 1.7 | 0.8 | | | 8 | | | 0 | 0 | | |
| Agra | 29.24 | 742.7 | 29.80 | 756.8 | 88.7 | 31.6 | 32 | E | | | | | 7 | | E | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.79 | 731.2 | 29.80 | 757.0 | 94.5 | 34.7 | 27 | Calm | 4.8 | 2.2 | | | 5 | | NE | 0.39 | 9.9 | D. clouds | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.46 | 748.2 | 29.82 | 757.5 | 88.2 | 31.2 | 28 | NE | 1.0 | 0.4 | | | 7 | W | | 0 | 0 | D. clouds | |
| Allahabad | 29.49 | 749.0 | 29.80 | 756.8 | 87.7 | 30.9 | 34 | Calm | 0.6 | 0.3 | | | 8 | W | | 0 | 0 | D. clouds | |
| Patna | 29.64 | 752.9 | 29.82 | 757.5 | 85.6 | 29.8 | 32 | W | 1.1 | 0.5 | | | 4 | W | W | 0 | 0 | D. clouds | |
| Hazaribagh | 27.83 | 706.9 | 29.82 | 757.4 | 84.8 | 29.3 | 19 | N | 4.7 | 2.1 | | | 10 | | W | 0 | 0 | | |
| Cuttack | 29.78 | 756.4 | 29.86 | 758.5 | 86.3 | 30.2 | 60 | SSW | 5.3 | 2.4 | | | 4 | | | 0 | 0 | D. clouds | |
| Calcutta (Alipore) | 29.85 | 758.2 | 29.87 | 758.7 | 84.3 | 29.1 | 70 | SSW | 8.0 | 3.6 | | | 9 | | W | 0 | 0 | Overcast | |
| Goalpara | 29.66 | 753.3 | 30.06 | 763.6 | 67.6 | 19.8 | 81 | E | 7.1 | 3.2 | | | 4 | W | | 0.10 | 2.5 | D. clouds | |
| Chittagong | 29.86 | 758.5 | 29.96 | 760.9 | 78.1 | 25.6 | 89 | WSW | 5.4 | 2.4 | | | 4 | | | 0 | 0 | Misty | |
| Sibsagar | 29.70 | 754.4 | 30.05 | 763.3 | 65.9 | 18.8 | 89 | NE | 3.2 | 1.4 | | | 10 | W | W | 0.13 | 3.3 | Overcast | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.48 | 723.4 | 29.81 | 757.2 | 93.5 | 34.2 | 23 | W | 3.8 | 1.7 | | | | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.51 | 749.5 | 29.93 | 760.2 | 46.4 | 8.0 | 5 | SE | 6.9 | 3.1 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 29.81 | 757.2 | 29.93 | 760.1 | 49.5 | 9.7 | 9 | NNE | 11.9 | 5.3 | ..... | ..... | 5 | NE | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.77 | 756.1 | 29.97 | 761.1 | 49.5 | 9.7 | 10 | N | 1.3 | 0.6 | ..... | ..... | 2 | E | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.68 | 727.2 | 29.97 | 761.3 | 46.8 | 8.2 | 8 | NW | ..... | ..... | 8 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.47 | 748.4 | 29.99 | 761.8 | 53.2 | 11.8 | ..... | N | ..... | ..... | 6 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.11 | 739.5 | 30.04 | 763.0 | 50.5 | 10.3 | 18 | SSE | 3.8 | 1.7 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 28.08 | 713.3 | 30.03 | 762.8 | 43.0 | 6.1 | 8 | NE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.78 | 756.4 | 30.01 | 762.2 | 53.2 | 11.8 | 4 | NNE | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.83 | 757.6 | 30.00 | 762.0 | 53.4 | 11.9 | 5 | N | 8.1 | 3.6 | ..... | ..... | 2 | N | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.69 | 754.2 | 30.01 | 762.3 | 50.0 | 10.0 | 25 | NNW | ..... | ..... | 6 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.72 | 755.0 | 29.99 | 761.7 | 49.1 | 9.5 | 14 | NE | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 29.88 | 758.9 | 29.97 | 761.1 | 49.1 | 9.5 | 27 | WNW | 7.4 | 3.3 | ..... | ..... | 3 | ..... | ..... | 0.028 | 0.7 | ..... | Prof. P. Monte. |
| Pesaro | 29.91 | 759.8 | 29.97 | 761.1 | 45.9 | 7.7 | 48 | NNE | 31.1 | 13.9 | ..... | ..... | 3 | NE | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.33 | 719.6 | 29.94 | 760.4 | 38.5 | 3.6 | 42 | NE | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.82 | 757.4 | 29.93 | 760.3 | 46.6 | 8.1 | 21 | NNE | ..... | ..... | 8 | ..... | 9 | NE | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.65 | 753.1 | 29.83 | 757.7 | 46.2 | 7.9 | 33 | NNE | 13.7 | 6.1 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U. | 29.57 | 751.0 | 29.77 | 756.2 | 49.6 | 9.8 | 40 | SE | ..... | ..... | 6 | ..... | 10 | E | ..... | 0.591 | 15.0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 46.0 | 7.8 | 75 | NNE | 15.0 | 6.7 | ..... | ..... | 9 | N | ..... | 0.650 | 16.5 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.72 | 754.8 | 29.91 | 759.8 | 48.6 | 9.2 | 52 | NW | ..... | ..... | 6 | ..... | 3 | N | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 28.79 | 731.3 | 29.70 | 754.3 | 52.9 | 11.6 | 71 | SW | 5.6 | 2.5 | ..... | ..... | 9 | ..... | ..... | 0.732 | 18.6 | ..... | Prof. F. D. Conti. |
| Palermo | 29.50 | 749.4 | 29.76 | 756.0 | 48.9 | 9.4 | 48 | WNW | 5.6 | 2.5 | ..... | ..... | 10 | NNW | ..... | 0.087 | 2.2 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.62 | 752.4 | 29.70 | 754.3 | 60.3 | 15.7 | 43 | SW | ..... | ..... | 6 | ..... | 8 | W | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.28 | 743.8 | 29.84 | 757.9 | 46.2 | 7.9 | 42 | NE | 7.4 | 3.3 | ..... | ..... | 8 | NW | ..... | 0 | 0 | ..... | Prof. F. Brioschi |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.7 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 29.93 | 760.2 | 30.00 | 762.0 | 39.3 | 4.1 | 62 | NNW | 12.1 | 5.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear. ..... | The Observatory. |
| Tokei (Yeddo) University | 29.89 | 759.2 | 30.00 | 761.9 | 39.3 | 4.1 | 59 | NNW | 18 | 8.0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear ..... | Prof. P. V. Veeder. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | 25.09 | 636.9 | 29.86 | 758.5 | 68.9 | 20.6 | 40 | N | 1.8 | 0.8 | ..... | 5c | 5c | N | ..... | 0 | 0 | Covered ..... | L. Castillo, A. E. |
| Guadalajara | 25.05 | 636.2 | 30.03 | 762.8 | 58.6 | 14.8 | 48 | SW | 5.1 | 2.3 | ..... | 0 | 10 | ..... | SW | 1.0 | 25. | Covered..... | Prof. L. Perez. |
| Guanajuato | 23.69 | 601.9 | 29.91 | 759.5 | 63.3 | 17.1 | 40 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear.. | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 62.6 | 17.0 | 39 | Calm | 0 | 0 | ..... | 10c | 0 | ..... | ..... | 0 | 0 | Dark..... | Prof. M. Leal. |
| Mexico | 23.12 | 587.1 | 30.16 | 766.0 | 54.0 | 12.2 | 53 | Calm | 0 | 0 | ..... | 10pc | 0 | S | ..... | 0 | 0 | Covered..... | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Pabellon, (Aguascalits) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Puebla | 23.34 | 592.9 | 30.00 | 761.7 | 56.8 | 13.8 | 30 | SW | 0.9 | 0.4 | ..... | 6n | 5n | SW | SW | 0 | 0 | Covered ..... | M. V. de Leon, M. E. |
| Toluca | ..... | ..... | ..... | ..... | 53.3 | 12.1 | 52 | N | 3.4 | 1.5 | ..... | 5c | 5c | ..... | ..... | 0 | 0 | Covered ..... | Prof. B. Gonzalez. |
| Tlacotalpam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| San Luis Potosi | 23.90 | 759.4 | 29.91 | 759.7 | 72.5 | 22.5 | 91 | Calm | 0 | 0 | ..... | 7ck | 3n | ..... | ..... | 0 | 0 | Dark..... | Prof. F. R. Bayly. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Zacatecas | 23.99 | 761.8 | 30.02 | 762.5 | 76.1 | 24.5 | 87 | Calm | 0 | 0 | ..... | 0 | 10sk | ..... | ..... | 0 | 0 | Covered ..... | Prof. J. Rossell. |
| Puebla, (Catholic Institute) | ..... | ..... | ..... | ..... | 50.0 | 10.0 | 46 | NW | 1.8 | 0.8 | ..... | 0 | 7nk | ..... | ..... | 0 | 0 | Smoky..... | J. A. Bonilla, M. E. |
| Morelia | 23.70 | 591.7 | 30.08 | 763.9 | 53.8 | 12.1 | 76 | N | 2.2 | 1.0 | ..... | 0 | 10 | ..... | ..... | 0 | 0 | Hazy..... | P. Spius. [M. M. D. D. M. Tena, F. L. Param. |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.41 | 772.3 | 30.41 | 772.3 | 47.5 | 8.6 | ..... | NNW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.244 | 6.2 | ..... | |
| Groningen | 30.27 | 768.8 | 30.32 | 770.2 | 40.1 | 4.5 | ..... | N | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.016 | 0.4 | ..... | |
| Helder | 30.34 | 770.5 | 30.34 | 770.5 | 40.8 | 4.9 | ..... | NNW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.031 | 0.8 | ..... | |
| Hellevoetsluis | 30.37 | 771.4 | 30.37 | 771.4 | 44.8 | 7.1 | 71 | N | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 30.31 | 769.9 | 30.36 | 771.1 | 43.5 | 6.4 | 58 | NNW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.024 | 0.6 | Very cloudy | H. v d Brink. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give and humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper the lower clouds.

## NORWEGIAN SERIES.

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

| STATIONS | Barometer. Corrected for instru.n'tal error and temperature. Inches. | Barometer. Corrected for instru.n'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.30 | 769.6 | 30.35 | 771.0 | 36.0 | 2.2 | 61 | NNW | 9.0 | 4.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 30.24 | 768.2 | 30.28 | 769.2 | 32.4 | 0.2 | 62 | NNW | 25 | 11 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 30.10 | 764.4 | 30.25 | 768.3 | 35.6 | 2.0 | 38 | NE | 9 | 4 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 30.21 | 767.4 | 30.26 | 768.5 | 27.7 | — 2.4 | 71 | NE | 11 | 5 | ..... | ..... | 10 | ..... | ..... | 0.094 | 2.4 | ..... | |

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

## PORTUGUESE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.89 | 759.3 | 30.09 | 764.2 | 57.9 | 14.4 | 76 | NW | 6.3 | 2.8 | ..... | ..... | 3 | ..... | ..... | 0.079 | 2.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.06 | 738.1 | 30.07 | 763.6 | 71.4 | 21.9 | 17 | E | 14.3 | 6.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos |
| Funchal, (Madeira) | 30.02 | 762.4 | 30.10 | 764.6 | 65.5 | 18.6 | 62 | SW | 6.9 | 3.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.67 | 753.5 | 30.02 | 762.5 | 70.0 | 21.1 | 31 | NE | 19.9 | 8.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.04 | 763.1 | 30.13 | 765.3 | 61.9 | 16.6 | 67 | WNW | 9.4 | 4.2 | ..... | ..... | 4 | NNE | ..... | 0.157 | 4.0 | ..... | |

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

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd't. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd t. |
| Mindello, Mozambique, Mozambique | 29.79 | 756.7 | 29.80 | 756.8 | 84.9 | 29.4 | ..... | ESE | ..... | ..... | 2 | ..... | 10 | ..... | ESE | 1 | ..... | Raining | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd' t |
| Sado, Bathurst, St. Mary's Island | 29.98* | 761.5* | 29.99* | 761.8* | 78.8 | 26 | ..... | NNW | ..... | ..... | 2 | ..... | 2 | ..... | NW | 2 | NNW | D. clouds | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.71 | 754.6 | 29.71 | 754.7 | ..... | ..... | ..... | NW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | Blue sky | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreina, dos Amas, Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.54 | 750.4 | 29.98 | 761.6 | 29.7 | — 1.3 | 82 | NW | 7 | 3 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing | Astronomical Obs. |
| Wilna | 29.51 | 749.5 | 29.95 | 760.7 | 26.4 | — 3.1 | 68 | NW | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Astronomical Obs. |
| Dorpat | 29.53 | 750.1 | 29.78 | 756.5 | 27.7 | — 2.4 | 84 | WNW | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Light snow. | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.64 | 752.9 | 29.66 | 753.3 | 26.6 | — 3.0 | 87 | WNW | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Light snow. | Central Physical Obs. |
| Kuopio | 29.32 | 744.7 | 29.65 | 753.2 | 28.0 | — 2.2 | 100 | NW | 13 | 6 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Ch. Forsten. |
| Kieff | 29.21 | 741.8 | 29.87 | 758.6 | 33.6 | 0.9 | 63 | W | 9 | 4 | ..... | ..... | 9ks;n;c | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.90 | 759.4 | 29.97 | 761.2 | 47.3 | 8.5 | 51 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.02 | 762.4 | 30.04 | 762.9 | 40.5 | 4.7 | 90 | N | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.14 | 740.1 | 29.71 | 754.5 | 33.8 | 1.0 | 89 | SSW | 9 | 4 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | Snowing | Meteorological Obs. |
| Lugan | 29.65 | 753.1 | 29.86 | 758.5 | 35.4 | 1.9 | 92 | S | 2 | 1 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Meteorological Obs. |
| Archangel | 29.62 | 752.3 | 29.64 | 752.8 | 25.9 | — 3.4 | 91 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.65 | 727.7 | 30.05 | 763.2 | 63.5 | 17.5 | 21 | Calm | 0 | 0 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.12 | 765.1 | 30.04 | 763.0 | 40.1 | 4.5 | 66 | SE | 20 | 9 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Kasan | 29.67 | 753.5 | 29.95 | 760.6 | 33.4 | 0.8 | 78 | S | 18 | 8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 29.32 | 744.7 | 30.30 | 769.7 | 35.8 | 2.1 | 45 | W | 7 | 3 | ..... | ..... | 8c;cs | ..... | ..... | ..... | ..... | ..... | Meteorological Obs |
| Nukuss | 30.19 | 766.7 | 30.43 | 772.8 | 46.4 | 8.0 | 55 | E | 20 | 9 | ..... | ..... | 6cs | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.88 | 733.6 | 30.68 | 779.3 | 38.8 | 3.8 | 90 | NE | 4 | 2 | ..... | ..... | 9k | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.97 | 761.1 | 30.53 | 775.4 | 23.2 | — 4.9 | 95 | W | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.94 | 760.5 | 30.28 | 769.1 | 32.9 | 0.5 | 73 | SE | 7 | 3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Krotkowo* | 29.53 | 750.0 | 30.02 | 762.5 | 33.4 | 0.8 | 82 | S | 31 | 14 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Peking, (China) | 30.18 | 766.6 | 30.32 | 770.2 | 46.8 | 8.2 | 31 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.96 | 710.3 | 30.15 | 765.8 | 21.6 | — 5.8 | 60 | Calm | 0 | 0 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 3.2 | —16.0 | 90 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 30.07 | 763.8 | 30.18 | 766.5 | 54.9 | 12.7 | 67 | E | 5.4 | 2.41 | ..... | 0 | 1ks | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.28 | 769.1 | 30.34 | 770.6 | 55.0 | 12.8 | 59 | E | 2.4 | 1.08 | ..... | 0 | 0 | ..... | ..... | 0.079 | 2.0 | Clear | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.20 | 690.9 | ..... | ..... | 50.4 | 10.2 | 58 | NE | 11.4 | 5.11 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.90 | 708.6 | 30.10 | 764.5 | 63.7 | 17.6 | 23 | NE | 14.9 | 6.67 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |
| Murcia, Met. Obs'y | 30.00 | 762.0 | 30.15 | 765.9 | 60.8 | 16.0 | 75 | NE | 5.4 | 2.42 | ..... | 5 | 5 | WSW | ..... | Inap. | Inap. | Misty | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.15 | 740.4 | 30.03 | 762.7 | 68.5 | 20.3 | 51 | SE | 9.6 | 4.31 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.97 | 761.2 | 30.04 | 762.9 | 75.6 | 24.2 | 86 | ESE | 3.6 | 1.6 | ..... | 9ck | 0 | WNW | ..... | 0.039 | 1.0 | Cloudy | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 29.94 | 760.6 | 30.04 | 763 0 | 72.1 | 22.3 | 24 | ESE | 19.4 | 9.1 | ..... | 0 | 1 | ..... | SE | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W.I. | 29.98 | 761.4 | 30.07 | 763.7 | 77.4 | 25.2 | 92 | SE | 3.4 | 1.51 | ..... | 4km | 8km | SE | SE | 0.532 | 13.50 | Cloudy | Leonardo de Tejeda, Chief of Engineers. |

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

## SWEDISH SERIES.



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

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.93 | 760.3 | 29.97 | 761.3 | 26.6 | — 3.0 | ..... | N | ..... | ..... | 7 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.96 | 761.0 | 30.01 | 762.3 | 28.8 | — 1.8 | 50 | N | ..... | ..... | 7 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.05 | 763.2 | 30.10 | 764.5 | 30.9 | — 0.6 | 51 | N | ..... | ..... | 6 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.85 | 758.2 | 30.03 | 762.7 | 29.1 | — 1.6 | 52 | NNW | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0.047 | 1.2 | ..... | |
| Wisby | 29.94 | 760.4 | 30.00 | 761.9 | 31.3 | — 0.4 | 89 | N | ..... | ..... | 7 | ..... | 5 | ..... | ..... | 0.016 | 0.4 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.97 | 761.3 | 30.05 | 763.2 | 27.9 | — 2.8 | 54 | N | 16.3 | 7.3 | ..... | ..... | 2 | ..... | NNW | 0.009 | 0.23 | ..... | Dr. Hildebrandsson. |

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

## SWISS SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.82 | 732.1 | 30.30 | 769.6 | 37.4 | 3.0 | 53 | NNE | ..... | ..... | 4 | ..... | 4 | ..... | ..... | Inap. | Inap. | Cloudy. ..... | The Observatory. |
| Zurich | 28.59 | 726.2 | 30.31 | 769.8 | 32.4 | 0.2 | 91 | W | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0.165 | 14.2 | Snowing..... | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +7.4 mm.; Thermometer, —4.5 cent.; Relative Humidity, —8 per cent.

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

## TURKISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.82 | 757.5 | 55.4 | 13.0 | 70 | ENE | 13 | 6.0 | ..... | ..... | 9 | ..... | ENE | 0.150 | 3.8 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.66 | 753.4 | 46.8 | 8.2 | ..... | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.31 | 8. | Covered..... | B. Stefanidès. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | Imperial Observatory. |
| Beirut, (Syria,) Lee Obs'y | 30.05 | 763.3 | 30.17 | 766.2 | 64.9 | 18.3 | 70 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.47 | 748.5 | 29.78 | 756.4 | 35 | 1.7 | ..... | Calm | 0 | 0 | ..... | ..... | 8s | ..... | N | 1.00 | 25.4 | Cloudy ..... | W. R. Bigg. |
| *Chatham, N. B | 29.46 | 748.3 | 29.53 | 750.0 | 26 | — 3.3 | 95 | N | 4 | 1.8 | ..... | ..... | 10n | ..... | NE | 0.42 | 10.7 | Light snow.. | G. A. Blair. |
| Charlottetown, P. E. Island | 29.46 | 748.3 | 29.50 | 749.3 | 34 | 1.1 | 89 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.520 | 13.21 | Cloudy..... | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.53 | 750.0 | 29.72 | 754.9 | 31.8 | — 0.1 | 97 | SW | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0.14 | 3.6 | Cloudy ..... | James Smith, M. A. |
| Dalhousie, N. B | 29.62 | 752.3 | 29.65 | 753.1 | 24.1 | — 4.4 | 98 | NW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.30 | 7.6 | Snowing..... | H. A. Johnson. |
| Esquimault, B. C | 29.81 | 757.2 | 29.86 | 758.4 | 41.1 | 5.1 | 100 | NE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | Inap. | Inap. | Cloudy..... | W. H. Bevis. |
| *Father Point, Quebec | 29.68 | 753.9 | 29.70 | 754.4 | 24 | — 4.4 | 97 | NE | 39 | 17.4 | ..... | ..... | 10n | ..... | E | 0.03 | 0.8 | Threatening | J. McWilliams. |
| Fredericton, N. B | 29.52 | 749.8 | 29.59 | 751.6 | 25.2 | — 3.8 | 87 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0.63 | 16.0 | Light snow.. | Prof. Harrison. |
| *Fort Garry Manitoba | 29.21 | 741.9 | 30.07 | 763.8 | 30 | — 1.1 | 100 | SW | 6 | 2.7 | ..... | Haze | Fog | Calm | Calm | 0 | 0 | Foggy ..... | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.07 | 728.2 | 29.81 | 757.2 | 33 | 0.6 | 100 | W | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0.67 | 14.5 | Snowing..... | James Grant. |
| *Halifax, N. S | 29.37 | 746.0 | 29.51 | 749.5 | 34 | 1.1 | 96 | SE | 1 | 0.4 | ..... | ..... | 10n | ..... | ..... | 0.497 | 12.63 | Cloudy..... | F. Allison, M. A. |
| Hamilton, Ontario | 29.43 | 747.5 | 29.80 | 756.9 | 37.7 | 3.2 | 94 | S | ..... | ..... | 1 | 10cs | 0 | ..... | ..... | 0.21 | 5.3 | Raining..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.96 | 761.0 | 29.98 | 761.5 | 27 | — 2.8 | 100 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | Inap. | Inap | Overcast..... | E. Weedon. |
| *Kingston, Ontario | 29.43 | 747.5 | 29.77 | 756.1 | 34 | 1.1 | 89 | N | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0.26 | 6.6 | Cloudy..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.46 | 748.3 | 29.50 | 749.3 | 32 | 0 0 | ..... | SE | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0.40 | 10.2 | Misty..... | C. H. Rigby. |
| *Montreal, Quebec | 29.53 | 750.0 | 29.73 | 755.1 | 32 | 0.0 | 78 | NE | 2 | 0.9 | ..... | ..... | 10s | ..... | ..... | 0.50 | 12.7 | Cloudy..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.11 | 739.4 | 29.82 | 757.4 | 35 | 1.7 | 95 | N | 5 | 2.2 | ..... | ..... | 10n | ..... | NE | 0.08 | 2.0 | Light rain... | Rev. R. Mosley. |
| Peterboro, Ontario | 29.01 | 736.8 | 29.78 | 756.4 | 34.5 | 1.4 | 89 | Calm | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0.74 | 18.8 | Snowing..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.10 | 739.1 | 29.81 | 757.2 | 35 | 1.7 | 100 | W | 3 | 1.3 | ..... | ..... | 10n | ..... | W | 0.51 | 13.0 | Light rain ... | H. Morgan. |
| Port Hastings, N. S | 29.49 | 749.0 | 29.54 | 750.3 | 31.9 | — 0.1 | ..... | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0.30 | 7.6 | Cloudy..... | Peter Grant. |
| Port Stanley, Ontario | 29.16 | 740.7 | 29.82 | 757.4 | 35 | 1.7 | 94 | NW | 3 | 1.3 | ..... | ..... | 10n | ..... | NW | 0.62 | 15.7 | Light rain... | M. Payne. |
| *Quebec, Quebec | 29.39 | 746.5 | 29.72 | 754.9 | 27 | — 2.8 | 88 | NE | ..... | ..... | 1 | ..... | 10n | ..... | NE | 0.20 | 5.1 | Cloudy..... | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.32 | 744.7 | 29.79 | 756.7 | 36 | 2.2 | 71 | NW | 2 | 0.9 | ..... | ..... | 10s | ..... | N | Inap. | Inap. | Cloudy..... | W. H. McIntyre. |
| St. Andrews, N. B | 29.50 | 749.3 | 29.55 | 750.6 | 28 | — 2.2 | 88 | N | 5 | 2.2 | ..... | ..... | 10n | ..... | ..... | 0.18 | 4.6 | Cloudy ..... | Dr. Gove. |
| St. John, N. B | 29.35 | 745.5 | 29.52 | 749.8 | 30 | — 1.1 | 89 | NW | 8 | 3.6 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast..... | G. Murdock, C. E. |
| *Sangeen, Ontario | 29.09 | 738.9 | 29.83 | 757.7 | 34 | 1.1 | 89 | N | 2 | 0.9 | ..... | ..... | 10s | ..... | ..... | 0.39 | 9.9 | Heavy snow | K. Stewart. |
| Stayner, Ontario | 29.00 | 736.6 | 29.80 | 756.9 | 33 | 0.6 | 95 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.39 | 9.9 | Light snow. | R. J. Cole. |
| Stratford, Ontario | 28.46 | 722.9 | 29.78 | 756.4 | 33.2 | 0.7 | 98 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0.34 | 8.6 | Snowing..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.51 | 749.5 | 29.54 | 750.3 | 33 | 0.6 | 98 | NE | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0.62 | 15.7 | Cloudy..... | T. C. Hill. |
| *Toronto, Ontario | 29.40 | 746.7 | 29.79 | 756.7 | 36 | 2.2 | 94 | NW | 2 | 0.9 | ..... | ..... | 10ks | ..... | N | 0.43 | 10.9 | Cloudy..... | Magnetic Observatory. |
| Windsor, N. S | 29.39 | 746.5 | 29.49 | 749.0 | 36.0 | 2.2 | 90 | S | 8 | 3.6 | ..... | ..... | 10ks | ..... | ..... | 0.21 | 5.3 | Fair ..... | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 26.5 | — 3.1 | ..... | SE | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0.02 | 0.5 | Snowing..... | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182ft. or 360.3 m.

UNITED STATES SERIES.

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

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

| STATIONS | BAROMETER. Corrected for instrumental error and temperature. Inches. | BAROMETER. Corrected for instrumental error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0–10 | CLOUDS. Amount. Up'er 0–10 | CLOUDS. Amount. Low'r 0–10 | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.51 | 749.5 | 29.74 | 755.4 | 38 | 3.3 | 81 | W | 10 | 4.5 | | | 10s | | Calm | 0.11 | 2.8 | Cloudy | |
| Alpena, Michigan | 29.20 | 741.7 | 29.86 | 758.4 | 36 | 2.2 | 90 | NW | 6 | 2.7 | | | 10s | | NW | Inap. | Inap. | Cloudy | |
| Atlantic City, New Jersey | 29.82 | 757.4 | 29.84 | 757.9 | 49 | 9.4 | 77 | W | 6 | 2.7 | | 0 | 2ks | | W | 0.04 | 1.0 | Clear | |
| Augusta, Georgia | 29.88 | 758.9 | 30.07 | 763.8 | 51 | 10.6 | 86 | Calm | 0 | 0 | | 2cs | Haze | W | Calm | 0 | 0 | Hazy | |
| Baltimore, Maryland | 29.79 | 756.7 | 29.84 | 757.9 | 52 | 11.1 | 66 | SW | 4 | 1.8 | | 5ck | 2s | SW | SW | Inap. | Inap. | Fair | |
| Barnegat, New Jersey | 29.80 | 756.9 | 29.82 | 757.4 | 51 | 10.6 | 78 | W | 5 | 2.2 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| Bismarck, Dakota | 28.19 | 716.0 | 30.05 | 763.3 | 34 | 1.1 | 90 | S | 2 | 0.9 | | 2cs | Haze | NW | Calm | 0.07 | 1.8 | Light rain | |
| Boise City, Idaho | 27.05 | 687.1 | 29.93 | 760.2 | 49 | 9.4 | 71 | E | 8 | 3.6 | | 4cs | 10n | W | | 0.09 | 2.3 | Fair | |
| Boston, Massachusetts | 29.51 | 749.5 | 29.67 | 753.6 | 39.5 | 4.2 | 78 | W | 11 | 4.9 | | | 0 | | Calm | Inap. | Inap. | Light rain | |
| Brackettville, Texas | 28.84 | 732.5 | 29.85 | 758.2 | 67 | 19.4 | 64 | SE | 5 | 2.2 | | 4cs | 10n | W | Calm | 0 | 0 | Foggy | |
| Breckenridge, Minnesota | 29.07 | 738.4 | 30.11 | 764.8 | 30 | — 1.1 | 100 | NW | 6 | 2.7 | | | Fog | | Calm | 0 | 0 | Cloudy | |
| Brownsville, Texas | 29.95 | 760.7 | 30.01 | 762.2 | 69 | 20.6 | 95 | SE | 2 | 0.9 | | | 10s | | SE | 0 | 0 | Cloudy | |
| Buffalo, New York | 29.06 | 738.1 | 29.76 | 755.9 | 36 | 2.2 | 100 | SW | 6 | 2.7 | | | 10n | | W | 0.44 | 11.2 | Light rain | |
| Burkes, Arizona | | | | | 45 | 7.2 | 45 | SE | | | | 5c | 0 | NW | | 0 | 0 | Fair | |
| Burlington, Vermont | 29.47 | 748.5 | 29.74 | 755.4 | 32 | 0.0 | 79 | N | 8 | 3.6 | | | 10s | | NW | 0.24 | 6.1 | Cloudy | |
| Cairo, Illinois | 29.74 | 755.4 | 30.14 | 765.5 | 52 | 11.1 | 60 | NW | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Camp Grant, Arizona | 25.22 | 640.6 | 29.94 | 760.5 | 60 | 15.6 | 15 | NW | | | 1 | 0 | 0 | | | 0 | 0 | Clear | |
| Camp Verde, Arizona | 26.82 | 681.2 | 30.31 | 769.9 | 41 | 5.0 | 57 | NW | | | | 0 | 0 | | | 0 | 0 | Clear | |
| Campo, California | 27.41 | 696.2 | 29 98 | 761.5 | 38 | 3.3 | 90 | E | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 29.91 | 759.7 | 29.91 | 759.7 | 60 | 15.6 | 77 | NW | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Cape Henry, Virginia | 29.88 | 758.9 | 29.91 | 759.7 | 59 | 15.0 | 76 | SW | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 29.91 | 759.7 | 29.92 | 760.0 | 60 | 15.6 | 82 | W | 10 | 4.5 | | 0 | 0 | | | 0 | 0 | Clear | |
| Cape May, New Jersey | 29.81 | 757.2 | 29.84 | 757.9 | 49 | 9.4 | 85 | SW | 18 | 8.0 | | 0 | 0 | | | 0.05 | 1.3 | Clear | |
| Charleston, South Carolina | 29.99 | 761.7 | 30.06 | 763.5 | 59 | 15.0 | 59 | NW | 7 | 3.1 | | 0 | Sm'e | | Calm | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 24.03 | 610.4 | 29.97 | 761.2 | 28 | — 2.2 | 66 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Chicago, Illinois | 29.27 | 743.4 | 29.97 | 761.2 | 41 | 5.0 | 82 | NW | 5 | 2.2 | | | 10s | | NW | 0.11 | 2.8 | Cloudy | |
| Cincinnati Ohio | 29.30 | 744.2 | 29.95 | 760.7 | 47 | 8.3 | 62 | SW | 5 | 2.2 | | 0 | 0 | | | 0.10 | 2.5 | Clear | |
| Cleveland, Ohio | 29.10 | 739.1 | 29.82 | 757.4 | 42 | 5.6 | 83 | SW | 15 | 6.7 | | | 10ks | | W | 0.08 | 2.0 | Cloudy | |
| Concho, Texas | 28.11 | 714.0 | 29.78 | 756.4 | 55 | 12.8 | 33 | NE | 2 | 0.9 | | 4c | 0 | NE | | 0 | 0 | Fair | |
| Corsicana, Texas | 29.57 | 751.1 | 30.04 | 763.0 | 54 | 12.2 | 80 | Calm | 0 | 0 | | Haze | 0 | Calm | | 0 | 0 | Clear | |
| Davenport, Iowa | 29.43 | 747.5 | 30.08 | 764.3 | 39 | 3.9 | 82 | NW | 1 | 0.4 | | 7k | 0 | NW | | 0.01 | 0.3 | Cloudy | |
| Deadwood, Dakota | 25.35 | 643.9 | | | 20 | — 6.7 | 70 | SW | 1 | 0.4 | | 5cs | 0 | SW | | 0 | 0 | Fair | |
| Denison, Texas | 29.27 | 743.4 | 30.08 | 764.0 | 51 | 10.6 | 59 | N | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Denver, Colorado | 24.81 | 630.2 | 30.03 | 762.7 | 30 | — 1.1 | 68 | NW | 2 | 0.9 | | 0 | 2s | | Calm | 0 | 0 | Clear | |
| Detroit, Michigan | 29.12 | 739.6 | 29.80 | 756.9 | 38 | 3.3 | 91 | NW | 8 | 3.6 | | | 10n | | NW | 0.14 | 3.6 | Light rain | |
| Dodge City, Kansas | 27.53 | 699.2 | 29.90 | 759.4 | 37 | 2.8 | 71 | NE | 1 | 0.4 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Dubuque, Iowa | 29.35 | 745.5 | 30.07 | 763.8 | 36 | 2 2 | 61 | Calm | 0 | 0 | | 5c | Fog | Calm | Calm | 0.22 | 5.6 | Cloudy | |
| Duluth, Minnesota | 29.36 | 745.7 | 30.06 | 763.5 | 33 | 0.6 | 89 | NE | 2 | 0.9 | | | Fog | | Calm | 0 | 0 | Foggy | |
| Eagle Pass, Texas | 29.21 | 741.9 | 29.94 | 760.5 | 63 | 17.2 | 94 | SW | 2 | 0.9 | | | Fog | | Calm | 0 | 0 | Foggy | |
| Eastport, Maine | 29.47 | 748.5 | 29.54 | 750.3 | 28 | — 2.2 | 88 | NW | 13 | 5.8 | | | 10s | | NW | 0.63 | 16.0 | Cloudy | |
| Erie, Pennsylvania | 29.04 | 737.6 | 29.75 | 755.6 | 44 | 6.7 | 84 | Calm | 0 | 0 | | | Fog | | | 1.02 | 25.9 | Foggy | |
| Escanaba, Michigan | 29.33 | 745.0 | 30.00 | 762.0 | 36 | 2.2 | 80 | N | 12 | 5.4 | | | 10s | | N | 0 | 0 | Cloudy | |
| Florence, Arizona | 28.31 | 719.1 | 29.91 | 759.7 | 50 | 10.0 | 32 | W | | | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | 24.13 | 612.9 | 30.13 | 765.3 | 38 | 3.3 | 38 | S | 7 | 3.1 | | 2c | 0 | | | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.54 | 648.7 | | | 38 | 3.3 | 54 | Calm | 0 | 0 | | 0 | 5s | | Calm | 0 | 0 | Fair | |
| Fort Gibson, Indian Ter | 29.57 | 751.1 | 30.12 | 765.0 | 47 | 8.3 | 55 | NE | 7 | 3.1 | | 5c | 0 | W | | 0 | 0 | Fair | |
| Fort Griffin, Texas | | | | | | | | | | | | | | | | | | | |
| Fort St. Michael, Alaska | 29.90 | 759.4 | 29.94 | 760.5 | —32 | —35.6 | 100 | W | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Sill, Indian Territory | 28.90 | 734.0 | 30.03 | 762.7 | 44 | 6.7 | 67 | N | 12 | 5.4 | | 2cs | 0 | W | | 0 | 0 | Clear | |
| Galveston, Texas | 30.00 | 762.0 | 30.05 | 763.3 | 63 | 17.2 | 88 | E | 4 | 1.8 | | 1c | 0 | | | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.27 | 743.4 | 29.93 | 760.2 | 40 | 4.4 | 82 | NW | 11 | 4.9 | | | 10s | | NW | 1.00 | 25.4 | Cloudy | |
| Indianapolis, Indiana | 29.19 | 741.4 | 29.98 | 761.5 | 44 | 6.7 | 76 | W | 6 | 2.7 | | | 10s | | NW | 0.03 | 0.8 | Cloudy | |
| Indianola, Texas | 30.00 | 762.0 | 30.03 | 762.7 | 66 | 18.9 | 89 | E | 12 | 5.4 | | 10k | 0 | E | | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.90 | 734.0 | 30.04 | 763.0 | 48 | 8.9 | 56 | NE | 4 | 1.8 | | 1c | 0 | | | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.04 | 763.0 | 30.06 | 763.5 | 60 | 15.6 | 88 | SW | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.45 | 748.0 | 30.08 | 764.0 | 42 | 5.6 | 83 | NW | 6 | 2.7 | | 0 | 4s | | Calm | 0.01 | 0.3 | Fair | |
| Key West, Florida | 29.99 | 761.7 | 30.03 | 762.7 | 74 | 23.3 | 90 | E | 10 | 4.5 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Kittyhawk, North Carolina | 29.93 | 760.2 | 29.95 | 760.7 | 55 | 12.8 | 81 | N | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Knoxville, Tennessee | 29.06 | 738.1 | 30.13 | 765.3 | 48 | 8.9 | 49 | NW | 3 | 1.3 | | 3ck | 0 | W | | 0 | 0 | Fair | |
| La Crosse, Wisconsin | 29.32 | 744.7 | 30.09 | 764.3 | 34 | 1.1 | 90 | S | 2 | 0.9 | | | Fog | | Calm | 0.01 | 0.3 | Foggy | |
| La Mesilla, New Mexico | 26.40 | 662.9 | 30.25 | 768.3 | 36 | 2.2 | 61 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Laredo, Texas | 29.55 | 750.6 | 29.88 | 758.9 | 68 | 20.0 | 84 | Calm | 0 | 0 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 29.28 | 743.7 | 30.16 | 766.1 | 37 | 2.8 | 81 | NW | 2 | 0.9 | | 2cs | 0 | W | | 0 | 0 | Clear | |
| Los Angeles, California | 29.65 | 753.1 | 29.99 | 761.7 | 49 | 9.4 | 85 | N | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.46 | 748.3 | 30.03 | 762.7 | 48 | 8.9 | 56 | W | 8 | 3.6 | | 0 | Sm'e | | W | 0.10 | 2.5 | Smoky | |
| Lynchburg, Virginia | | | | | | | | | | | | | | | | | | | |
| Marquette, Michigan | 29.29 | 744.0 | 30.01 | 762.2 | 38 | 3.3 | 81 | NW | 12 | 5.4 | | 5k | 5ks | NW | S | 0 | 0 | Cloudy | |
| Mason, Texas | 28.40 | 721.3 | 30.15 | 765.8 | 56 | 13.3 | 87 | Calm | 0 | 0 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Memphis, Tennessee | 29.82 | 757.4 | 30.14 | 765.5 | 53 | 11.7 | 53 | NE | 6 | 2.7 | | 0 | 5ks | | SW | 0 | 0 | Fair | |
| Milwaukee, Wisconsin | 29.30 | 744.2 | 30.00 | 762.0 | 37 | 2.8 | 81 | NW | 10 | 4.5 | | 0 | 5ks | | NW | 0.37 | 9.4 | Fair | |
| Mobile, Alabama | 30.07 | 763.8 | 30.11 | 764.8 | 55 | 12.8 | 74 | N | 1 | 0.4 | | 0 | Sm'e | | | 0 | 0 | Clear | |
| Montgomery, Alabama | 29.88 | 758.9 | 30.12 | 765.0 | 50.5 | 10.3 | 78 | NW | 1 | 0.4 | | 0 | Sm'e | | Calm | 0 | 0 | Clear | |
| Morgantown, West Virginia | 28.83 | 732.3 | 29.88 | 758.9 | 45 | 7.2 | 84 | SW | 17 | 7.6 | | | 10n | | SW | 0.20 | 5.1 | Light rain | |
| Mt. Washington, N. H. | 23.22 | 589.8 | 29.58 | 751.3 | 14 | —10.0 | 100 | NW | 72 | 32.2 | | | Fog | | NW | 1.10 | 27.9 | Foggy | |
| Nashville, Tennessee | 29.56 | 750.8 | 30.10 | 764.5 | 51 | 10.6 | 79 | N | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| New Haven, Connecticut | 29.67 | 753.6 | 29.78 | 756.4 | 48 | 8.9 | 70 | W | 4 | 1.8 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| New London, Connecticut | 29.70 | 754.4 | 29.75 | 755.6 | 44 | 6.7 | 68 | W | 4 | 1.8 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| New Orleans, Louisiana | 30.02 | 762.5 | 30.08 | 764.0 | 61 | 16.1 | 71 | SE | 4 | 1.8 | | 2c | Sm'e | Calm | Calm | 0 | 0 | Clear | |
| Newport, Rhode Island | 29.65 | 753.1 | 29.70 | 754.4 | 42 | 5.6 | 66 | NW | 12 | 5.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| New York, New York | 29.64 | 752.8 | 29.82 | 757.4 | 45 | 7.2 | 75 | W | 4 | 1.8 | | | 10s | | W | 0.02 | 0.5 | Cloudy | |
| Norfolk, Virginia | 29.88 | 758.9 | 29.93 | 760.2 | 56 | 13.3 | 69 | W | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| North Platte, Nebraska | 27.22 | 691.4 | 29.92 | 760.0 | 29 | — 1.7 | 83 | NW | 6 | 2.7 | | 5ck | 0 | NW | | 0 | 0 | Fair | |
| Olympia, Washington Ter. | 29.77 | 756.1 | 29.80 | 756.9 | 40 | 4.4 | 91 | Calm | 0 | 0 | | | 10s | | Calm | 0.85 | 21.6 | Cloudy | |
| Omaha, Nebraska | 29.02 | 737.1 | 30.12 | 765.0 | 40 | 4 4 | 82 | N | 6 | 2.7 | | 5c | 2s | Calm | Calm | 0 | 0 | Fair | |
| Oswego, New York | 29.45 | 748.0 | 29.77 | 756.1 | 41 | 5.0 | 82 | NW | 4 | 1.8 | | | 10n | | Calm | 0.38 | 9.7 | Light rain | |
| Pembina, Dakota | 29.22 | 742.2 | 30.07 | 763.5 | 34 | 1.1 | 90 | S | 5 | 2.2 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Philadelphia, Pennsylvania | 29.77 | 756.1 | 29.82 | 757.4 | 51 | 10.6 | 72 | W | 2 | 0.9 | | 2cs | 2s;sm'e | W | W;Calm | 0.23 | 5.8 | Fair | |
| Phœnix, Arizona | 28.85 | 732.8 | 30.68 | 779.3 | 50 | 10.0 | 65 | Calm | | | | 0 | 0 | | | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.71 | 449.8 | 29.92 | 760.0 | 6 | —14.4 | 52 | N | 8 | 3.6 | | 8k | 0 | N | | 0 | 0 | Fair | |
| Ploche, Nevada | 24.05 | 610.9 | 29.82 | 757.4 | 35 | 1.7 | 80 | W | 3 | 1.3 | | 2c | 0 | Calm | | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.00 | 736.6 | 29.80 | 756.9 | 47 | 8.3 | 77 | W | 10 | 4.5 | | 5c | 5ks | W | W | 0.01 | 0.3 | Cloudy | |
| Port Huron, Michigan | 29.13 | 739.9 | 29.80 | 756.9 | 37 | 2.8 | 100 | NW | 5 | 2.2 | | | 10n | | Calm | 0.38 | 9.7 | Light rain | |
| Portland, Maine | 29.59 | 751.6 | 29.64 | 752.8 | 38 | 3.3 | 81 | W | 3 | 1.3 | | 5k | Fog | W | | 0.17 | 4.3 | Fair | |
| Portland, Oregon | 29.79 | 756.7 | 29.89 | 759.2 | 45 | 7.2 | 92 | NW | 1 | 0.4 | | | 10s | | Calm | 0.63 | 16.0 | Cloudy | |
| Prescott, Arizona | 24.80 | 629.9 | 30.16 | 766.1 | 31 | — 0.6 | 58 | W | | | | 0 | 0 | | | 0 | 0 | Clear | |
| Punta Rassa, Florida | 30.07 | 763.8 | 30.08 | 764.0 | 68 | 20.0 | 90 | N | 12 | 5.4 | | 5k | 0 | W | | 0.90 | 22.9 | Fair | |
| Red Bluff, California | 29.62 | 752.3 | 29.98 | 761.5 | 56 | 13.3 | 93 | SE | 20 | 8.9 | | | 10s | | Calm | 0.62 | 15.7 | Cloudy | |
| Rochester, New York | 29.14 | 740.1 | 29.76 | 755.9 | 39 | 3.9 | 91 | W | 3 | 1.3 | | | 10s;fg | | Calm | 0.63 | 16.0 | Cloudy | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roseburg, Oregon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.33 | 8.4 | Light rain... | |
| Sacramento, California | 29.98 | 761.5 | 30.06 | 763.5 | 56 | 13.3 | 94 | SE | 8 | 3.6 | ..... | ..... | 10n | ..... | SE | 0.48 | 12.2 | Light rain... | |
| St. Louis, Missouri | 29.52 | 749.8 | 30.10 | 764.5 | 42 | 5.6 | 66 | W | 8 | 3.6 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| St. Marks, Florida | 30.08 | 764.0 | 30.10 | 764.5 | 52 | 11.1 | 93 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.19 | 741.4 | 30.04 | 763.0 | 36 | 2.2 | 80 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.65 | 651.5 | 29.98 | 761.5 | 41 | 5.0 | 56 | E | 2 | 0.9 | ..... | 5k | 0 | W | ..... | 0 | 0 | Fair | |
| San Antonio, Texas | 29.33 | 745.0 | 29.91 | 759.7 | 60 | 15.6 | 94 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| San Diego, California | 29.96 | 761.0 | 30.03 | 762.7 | 52 | 11.1 | 86 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandusky, Ohio | 29.17 | 740.9 | 29.84 | 757.9 | 44 | 6.7 | 84 | W | 14 | 6.3 | ..... | ..... | 10s | ..... | NW | 0.08 | 2.0 | Cloudy | |
| Sandy Hook, New Jersey | 29.79 | 756.7 | 29.81 | 757.2 | 46 | 7.8 | 69 | NW | 9 | 4.0 | ..... | ..... | 10ks | ..... | W | 0.40 | 10.2 | Cloudy | |
| San Francisco, California | 30.00 | 762.0 | 30.06 | 763.5 | 58 | 14.4 | 94 | SW | 10 | 4.5 | ..... | ..... | 10n | ..... | Calm | 0.91 | 23.1 | Light rain | |
| Santa Fé, New Mexico | 28.31 | 692.1 | 29.65 | 768.2 | 31 | — 0.6 | 58 | Calm | 0 | 0 | ..... | 8cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Savannah, Georgia | 29.90 | 761.0 | 30.06 | 763.5 | 62 | 16.7 | 61 | NW | 4 | 1.8 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| Shreveport, Louisiana | 29.87 | 758.7 | 30.09 | 764.3 | 59 | 15.0 | 82 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 29.95 | 760.7 | 29.98 | 761.5 | 57 | 13.9 | 81 | NW | 5 | 2.2 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Springfield, Massachusetts | 29.55 | 750.6 | 29.68 | 753.9 | 43 | 6.1 | 59 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | |
| Stockton, Texas | 27.00 | 685.8 | 30.00 | 762.0 | 42 | 5.6 | 20 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.60 | 751.8 | 29.65 | 753.1 | 38 | 3.3 | 81 | NW | 16 | 7.2 | ..... | 5k | 2s | NW | NW | 0.30 | 7.6 | Fair | |
| Toledo, Ohio, | 29.15 | 740.4 | 29.82 | 757.4 | 45 | 7.2 | 68 | W | 8 | 3.6 | ..... | ..... | 10s | ..... | W | 0.05 | 1.3 | Cloudy | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 40 | 4.4 | 71 | SE | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tybee Island, Georgia | 30.01 | 762.2 | 30.04 | 763.0 | 58 | 14.4 | 81 | W | 8 | 3.6 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.52 | 749.8 | ..... | ..... | 45 | 7.2 | 92 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | W | 0.15 | 3.8 | Cloudy | |
| Vicksburg, Mississippi | 29.83 | 757.7 | 30.09 | 764.3 | 60 | 15.6 | 82 | SW | 6 | 2.7 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Virginia City, Montana | 24.14 | 613.1 | 29.02 | 752.3 | 30 | — 1.1 | 68 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Visalia, California | 29.74 | 755.4 | 30.11 | 764.8 | 52 | 11.1 | 86 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Washington, D. C. | 29.76 | 755.9 | 29.87 | 758.7 | 52 | 11.1 | 69 | W | 3 | 1.3 | ..... | 8ck | Sm'e | SW | ..... | 0.28 | 7.1 | Fair | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 39 | 3.9 | 55 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 29.91 | 759.7 | 29.98 | 761.5 | 56 | 13.3 | 74 | W | 4 | 1.8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Winnemucca, Nevada | 25.58 | 649.7 | 29.94 | 760.5 | 41 | 5.0 | 91 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.13 | 3.3 | Light rain | |
| Wood's Holl, Mass | 29.66 | 753.1 | 29.71 | 754.6 | 44 | 6.7 | 67 | NW | 12 | 5.4 | ..... | Haze | 0 | Calm | ..... | 0.05 | 1.3 | Clear | |
| Yankton, Dakota | 28.87 | 733.3 | 30.21 | 767.3 | 35 | 1.7 | 90 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Yuma, Arizona | 29.78 | 756.4 | 29.95 | 760.7 | 54 | 12.2 | 62 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 29.86 | 758.4 | 29.91 | 759.7 | 18.0 | — 7.8 | 92 | SE | 3 | 1.3 | ..... | 4c | 0 | S | ..... | 0 | 0 | Fair | J. Fortescue, W. Wood |
| Havana, Cuba, W. I. | 29.99 | 761.7 | 30.01 | 762.2 | 77 | 25.0 | 86 | SE | 2.4 | 1.1 | ..... | 8c | 0 | SW | ..... | 0.06 | 1.5 | Cloudy | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.09 | 764.3 | 30.10 | 764.5 | 78 | 25.6 | 90 | Calm | 0 | 0 | ..... | 2k | 0 | E- | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.95 | 760.7 | 30.03 | 762.7 | 80 | 26.7 | ..... | NE | 8 | 3.6 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | ..... | ..... | 29.99 | 761.7 | 82 | 27.8 | 87 | E | ..... | ..... | 2 | 6ck | 7ks | E | ..... | 0 | 0 | ½ Cloudy | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | 30.07 | 763.7 | 30.08 | 763.9 | 84.2 | 29 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.069 | 1.75 | Cloudy | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.19 | 639.8 | ..... | ..... | 71.0 | 21.7 | 77 | Calm | ..... | ..... | 0 | 10cs | 0 | ..... | ..... | 0 | 0 | ..... | Thomas Herran |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makuwao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,708 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,883 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,600 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.5 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,400 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,100.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,486 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.38 in.; Santa Fé, 6.84 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er —10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.07 | 763.8 | 57 | 13.9 | 56 | 13.3 | 100 | SSW | 11 | 4.9 | .... | ..... | 10 | ..... | S | 0.176 | 4.46 | ..... | ..... | Light rain.. | |
| Navy Yard, Pensacola, Fla. | 30.20 | 767.1 | 60 | 15.6 | 61 | 16.1 | 88 | NE | 1 | 0.4 | .... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Dense fog.... | |
| Navy Yard, Portsmouth, N.H | 29.72 | 754.9 | 67 | 19.4 | 38 | 3.3 | 81 | NW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan | 29.91* | 759.7* | 53 | 11.7 | 43 | 6.1 | 62 | N | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Adams, Panama | 29.94 | 760.5 | 83 | 28.3 | 83 | 28.3 | 83 | NNW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Alliance, Piraeus, Greece | 29.70‡ | 754.4‡ | ..... | ..... | 62 | 16.7 | 98 | SSE | ..... | ..... | 1-2 | ..... | 7 | ..... | S | ..... | ..... | ..... | ..... | Pleasant..... | |
| Ashuelot. Shanghai, China | 30.45* | 773.4* | 60 | 15.6 | 44 | 6.7 | 84 | SE | ..... | ..... | 1 | ..... | 5 | ..... | ENE | ..... | ..... | ..... | ..... | D. clouds.... | |
| Canonicus, New Orleans, La | 30.03 | 762.7 | 48 | 8.9 | 59 | 15.0 | 76 | S | ..... | ..... | 1 | ..... | 1 | ..... | N&W | ..... | ..... | ..... | ..... | Pleasant..... | |
| Colorado, New York, N. Y. | 29.79‡ | 756.7‡ | ..... | ..... | 46 | 7.8 | 69 | WNW | 10 | 4.5 | ..... | ..... | 8 | ..... | NW | 0.01 | 0.3 | ..... | ..... | Hazy..... | |
| Constitution, N. 42° 38′ W. 37° 34′ | 30.14‡ | 765.5‡ | ..... | ..... | 47 | 8.3 | 85 | NNW | ..... | ..... | 5 | ..... | 5 | ..... | NW | ..... | ..... | Long | NW | Drizzling.... | |
| Despatch, Constantinople, Turkey. | 29.98 | 761.5 | 72 | 22.2 | 54 | 12.2 | 80 | E | ..... | ..... | 2 | ..... | 8 | ..... | SW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Enterprise, New Orleans, La | 30.10‡ | 764.5‡ | ..... | ..... | 58 | 14.4 | 94 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Fair..... | |
| Franklin, Norfolk, Va | 29.91‡ | 759.7‡ | ..... | ..... | 55 | 12.8 | 68 | NW | 2.5 | 1.1 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | ..... | D. clouds.... | |
| Gettysburg Valetta, Malta | 29.88‡ | 758.9‡ | ..... | ..... | 61 | 16.1 | 94 | NW | ..... | ..... | 5 | ..... | 2 | ..... | NW | 0 | 0 | ..... | ..... | Clear ..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.11 | 764.8 | 73 | 22.8 | 72 | 22.2 | 71 | NNE | ..... | ..... | 3 | ..... | 2 | ..... | NE | ..... | ..... | Mod'ate Ground | NW | Fair ..... | |
| Marion, Salamis Bay, Greece | 29.73 | 755.1 | 59 | 15.0 | 59 | 15.0 | 82 | S | ..... | ..... | 6 | ..... | 5 | ..... | S | Mod'ate | Mod'ate | Mod'ate | S | Fair ..... | |
| Michigan, Erie, Pa | 29.29 | 744.0 | 74 | 23.3 | 42 | 5.6 | 74 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | SW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monongahela. Hong-Kong, China | 30.26* | 768.6* | 63 | 17.2 | 63 | 17.2 | 83 | E | ..... | ..... | 2-3 | ..... | 10 | ..... | ..... | ..... | ..... | Smooth | ..... | D. clouds.... | |
| New Hampshire, Port Royal, S. C | 30.24 | 768.1 | 61 | 16.1 | 58 | 14.4 | 82 | WNW | 5 | 2.2 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Fair..... | |
| Omaha, S. 0° 30′, W. 30° 42′ | 30.10* | 764.5* | 85 | 29.4 | 84 | 28.9 | 75 | SE | 3 | 1.3 | ..... | ..... | 4 | ..... | SE | 0 | 0 | Mod'ate | E | Pleasant.... | |
| Onward, Callao, Peru | 29.96† | 761.0† | ..... | ..... | 72 | 22.2 | 90 | S | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, Vera Cruz, Mexico | 29.97‡ | 761.2‡ | ..... | ..... | 75 | 23.9 | 95 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | NNE | ..... | ..... | ..... | ..... | Hazy..... | |
| Palos, Shanghai, China | 30.46* | 773.7* | 56 | 13.3 | 43 | 6.1 | 92 | SE | ..... | ..... | 2 | ..... | 1 | ..... | NW | ..... | ..... | ..... | ..... | Clear. ..... | |
| Pensacola, Honolulu, H. I. | 30.15 | 765.8 | 71 | 21.7 | 67 | 19.4 | 74 | NE | 1 | 0.4 | ..... | ..... | 1 | ..... | NE | 0 | 0 | ..... | ..... | Clear..... | |
| Plymouth, Norfolk, Va | 29.94‡ | 760.5‡ | ..... | ..... | 55 | 12.8 | 68 | WNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Powhatan, N. 23° 05′, W. 82° 10′ | 30.07‡ | 763.8‡ | ..... | ..... | 76 | 24.4 | 95 | S | 7.2 | 3.2 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | Smooth | ..... | Pleasant..... | |
| Ranger, Amoy, China | 30.44* | 773.2* | ..... | ..... | 56.5 | 13.6 | 84 | NE | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Overcast..... | |
| Rio Bravo, Brownsville, Texas | ..... | ..... | ..... | ..... | 69 | 20.6 | 95 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Santee, Annapolis, Md | 29.94* | 760.5* | 68 | 20.0 | 54 | 12.2 | 67 | W | ..... | ..... | 1 | ..... | 8 | ..... | W | 0.04 | 1.0 | ..... | ..... | Cloudy ..... | |
| Saratoga, Washington, D. C | 29.78* | 756.4* | ..... | ..... | 53 | 11.7 | 93 | NW | ..... | ..... | 2 | ..... | 5 | ..... | N&W | Mod'ate | Mod'ate | ..... | ..... | Clear..... | |
| St. Louis, League Island, Pa | 29.81 | 757.2 | 62 | 16.7 | 51 | 10.6 | 86 | SW | 6 | 2.7 | ..... | ..... | 5 | ..... | NW | 0.35 | 8.9 | ..... | ..... | Fair ..... | |
| Supply, N. 50° 45′ W. 13° | 30.41 | 772.4 | 55 | 12.8 | 52 | 11 1 | 86 | SSE | ..... | ..... | 4 | ..... | 10 | ..... | SE | ..... | ..... | Mod'ate | SE | Cloudy..... | |
| Swatara, N. 11° 16′, W. 74° 23′ | 29.94* | 760 5* | ..... | ..... | 83 | 28.3 | 87 | NNW | ..... | ..... | 1 | ..... | 4 | ..... | E | ..... | ..... | Long | N&E | Misty..... ... | |
| Tennessee, N. 1° 21′52″, E. 102° 59′ 16″ | 30.07* | 763.8* | 83 | 28.3 | 82 | 27.8 | 83 | NW | 1 | 0.4 | ..... | ..... | 7 | ..... | NNE | 0.003 | 0.08 | None | ..... | D. clouds.... | |
| Trenton, Smyrna, Turkey | 29.88‡ | 758.9‡ | ..... | ..... | 63 | 17.2 | 67 | SSE | ..... | ..... | 3 | ..... | 5 | ..... | S | 2.0 | 51. | Smooth | ..... | Clearing..... | |
| Tuscarora, N. 25° 00,′ W. 112° 40′ | 30.00 | 762.0 | 67 | 19.4 | 66 | 18.9 | 84 | NW | ..... | ..... | 2 | ..... | 8 | ..... | Calm | 0 | 0 | Smooth | ..... | Cloudy..... | |
| Vandalia, Piraeus, Greece | 29.63‡ | 752.6‡ | ..... | ..... | 61 | 16.1 | 77 | S | ..... | ..... | 4 | ..... | 8 | ..... | SW | ..... | ..... | ..... | ..... | Clearing..... | |
| Wabash, Boston, Mass | 29.64‡ | 752.8‡ | ..... | ..... | 38 | 3.3 | 81 | WNW | 8 | 3.6 | ..... | ..... | 5 | ..... | Calm | 0.42 | 10.7 | ..... | ..... | Fair ..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

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

| NAMES OF VESSELS. | TRUE COURSE TOWARD— | HOURLY RATE IN KNOTS. | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | SEA-SWELL. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | CHARACTER. | DIRECTION FROM— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—12. | 0—10. | 0—10. | From— | From— | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | |
| S. S. City of Panama, N. 40° 30′, W. 124° 40″ | | | 29.91† | 759.7† | | | | S | | | 4 | | Fog | | | Mod'ate | S | Variable | Capt. Seabury. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, N. 25° 10′, E. 119° 49′ | | | | | 54 | 12.2 | | NNE | | | 7 | | 10 | | N | Rough | NNE | Overcast | Capt. Maury. |
| S. S. Colima, N. 16° 48′, W. 99° 52′ | | | 29.88† | 758.9† | 76 | 24.4 | 01 | WSW | | | 2 | | 4 | | Calm | Small easy | W | Misty | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation: not any distinction between upper and lower clouds. †Aneroid.

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

Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Panama, N. 40° 30′, W. 124° 40″ | | | 29.91† | 759.7† | | | | S | | | 4 | | Fog | | | Mod'ate | S | Variable | Capt. Seabury. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, N. 25° 10′, E. 119° 49′ | | | | | 54 | 12.2 | | NNE | | | 7 | | 10 | | N | Rough | NNE | Overcast | Capt. Maury. |
| S. S. Colima, N. 16° 48′, W. 99° 52′ | | | 29.88† | 758.9† | 76 | 24.4 | 01 | WSW | | | 2 | | 4 | | Calm | Small easy | W | Misty | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation: not any distinction between upper and lower clouds. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Aquatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, N. 44° 10′, W. 51° 29′ | | | 29.90† | 759.4† | 37 | 2.8 | ?? | SSE | | | 6 | | 10 | | S | Con-fused | sk&nw | Thick | Capt. W. H. Thompson |
| S. S. Celtic, N. 51° 16,′ W. 15° 8′ | | | 30.34† | 770.6† | 51 | 10.6 | ?? | S | | | 5 | | | SSW | | Mod'ate | SSW | Overcast | Capt. B. Gleadell. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

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

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

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic | | | | | | | | | | | | | | | | | | | Capt. John Metcalf. |
| S. S. Gaelic, N. 32° 00′, E. 151° 30′ | | | 29.77† | 756.1† | 58 | 14.4 | ?? | W | | | 0 | | ck | | W | High | W | Raining | Capt. W. H. Kidley |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

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

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | Character | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois, N. 47° 43′, W. 30° 34′ | | | 29.94* | 760.5* | 59 | 15.0 | 94 | WSW | | | 4 | | 2 | | W | Heavy | W | D. clouds | Captain Shackelford. |
| S. S. Indiana, Delaware River | | | 29.97† | 761.2† | 57 | 13.9 | 87 | SW | | | 4 | | 0 | | | | | Clear | Captain Sargent. |
| S. S. Ohio, N. 51° 36′, W. 8° 25′ | | | 30.35 | 770.9 | 50.5 | 10.3 | 86 | S | | | 5 | | 5 | | S | None | | Hazy | Captain Morrison. |
| S. S. Pennsylvania, N. 45° 15′, W. 50° 53′ | | | 30.18 | 766.6 | 28 | —2.2 | 88 | SSE | | | 5 | | 10 | | SE | Heavy | NE;N | Snowing | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid †Aneroid; unreliable, corrected for elevation, instrumental error not known.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RED STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Rundle. |
| S. S. Switzerland, N. 43° 17′, W. 43° 58′ | | | 30.22* | 767.6* | | | | NE | 5 | 2.2 | | 8 | | NE | Heavy | NNW | Overcast | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |

*Aneroid; regulated to standard at Antwerp.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ALLAN LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of A. Schumacher, & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Scandinavian | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MARINE SERIES.** (Miscellaneous.) | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller, N. 38° 10′ W. 74° 50′ | | | 29.82 | 757.4 | 51 | 10.6 | 86 | W | 7 | 3.1 | | | 0 | | | Swell | SSE | Clear | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.92 | 760.0 | —25 | —31.7 | 86* | Calm | 0 | 0 | | 0 | 5s | | W | | | Clear | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Determined by use of hair hygrometer.

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

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

Albert J. Myer

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

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 15, 1878.

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

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.

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

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

## ALGERIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | | | 30.00 | 762.1 | 63.5 | 17.5 | | N | | | 3 | | 3 | | | 0 | 0 | Pretty fair. | Dr. Ollive. |
| Nemours | | | 30.04 | 762.9 | 61.3 | 16.3 | 50 | N | | | 3 | | 0 | | | 0 | 0 | Clear. | Michel. |
| Algiers | | | 30.03 | 762.8 | 55.8 | 13.2 | 64 | ENE | | | 3 | | 0 | | | 0 | 0 | Clear. | Towiliere. |
| La Calle | | | 30.04 | 763.0 | 55.8 | 13.2 | 66 | NE | | | 5 | | 3 | | | 0 | 0 | Pretty fair. | Boulangeot. |
| Tunis | | | 30.15 | 765.9 | 57.0 | 13.9 | 66 | E | | | 6 | | 5 | | | 0 | 0 | Cloudy. | Jacques. |
| Sfax | | | 30.12 | 765.0 | 73.4 | 23.0 | | NNW | | | 3 | | 2 | | | 0 | 0 | Fair. | Gau. |
| Saida | | | 30.11 | 764.8 | 75.7 | 24.3 | 67 | SSE | | | 1 | | 4 | | | 0 | 0 | Cloudy. | Herbin. |
| Tebessa | | | 30.04 | 762.9 | | | | SW | | | 3 | | 1 | | | 0 | 0 | Very fair. | Bourgeois. |
| Geriville | | | 30.09 | 764.2 | 57.9 | 14.4 | 84 | NNW | | | 3 | | 4 | | | 0 | 0 | Cloudy. | Lemaillot. |
| Laghouat | | | 30.10 | 764.5 | 59.0 | 15.0 | 48 | E | | | 5 | | 0 | | | 0 | 0 | Clear. | Guyot. |
| Biskra | | | 30.11 | 764.7 | 47.7 | 8.7 | 43 | NE | | | 1 | | 0 | | | 0 | 0 | Clear. | Chanvaux. |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,380? m.; or 4,461.7? ft.

## AUSTRIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.54 | 750.2 | 30.11 | 764.8 | 37.2 | 2.9 | 44 | NE | | | 6 | | 10 | | | 0 | 0 | | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.34 | 745.2 | 30.15 | 765.7 | 29.8 | — 1.2 | 94 | N | | | 1 | | 10 | | | 0 | 0 | | Dr. Wierzbiski. |
| Eperies | 29.11 | 739.4 | 30.02 | 762.6 | 28.4 | — 2.0 | 72 | N | | | 4 | | 10 | | | 0 | 0 | | Julius Mikolik. |
| Gratz | 28.84 | 732.6 | 30.15 | 765.8 | 34.9 | 1.6 | 68 | NW | | | 5 | | 4 | | | 0.001 | 0.03 | | Andreas Rospini. |
| Hermannstadt | 28.41 | 721.5 | 29.89 | 759.1 | 32.4 | 0.2 | 85 | NW | | | 4 | | 10 | | | 0.102 | 2.60 | Snowy | Prof. Reissenberg |
| Kremsmünster | 28.81 | 731.7 | 30.23 | 767.7 | 30.6 | — 0.8 | 77 | SW | | | 2 | | 3 | | | 0.118 | 3.0 | | Prof. C. Wagner |
| Lemberg | 28.95 | 735.2 | 29.98 | 761.6 | 27.7 | — 2.4 | 92 | NE | | | 1 | | 10 | | | 0.020 | 0.5 | | Dr. T. Stanecki. |
| Pola | 29.98 | 761.6 | 30.10 | 764.6 | 44.6 | 7.0 | 41 | SSW | | | 1 | | 10ks | | | 0 | 0 | | I.R.Hydrographic Office |
| Szathmar | 29.40 | 748.3 | 29.94 | 760.5 | 37.2 | 2.9 | 82 | N | | | 3 | | 3 | | | 0 | 0 | | Johann Tamas, S. J. |
| Szegedin | 29.71 | 754.6 | 30.00 | 761.9 | 37.2 | 2.9 | 61 | N | | | 2 | | 8 | | | 0 | 0 | | Karl Stancel. |
| Trieste | 30.17 | 766.3 | 30.27 | 768.9 | 46.4 | 8.0 | 56 | W | | | 1 | | 4 | | | 0 | 0 | | P. Busin. |
| Vienna | 29.43 | 747.5 | 30.19 | 766.7 | 30.2 | — 1.0 | 80 | NW | | | 3 | | 8 | | | 0.028 | 0.7 | | I. R. Central Met. Obs'y. |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

## BELGIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.74 | 730.1 | 30.33 | 770.4 | 32.2 | 0.1 | 58 | NE | | | 1 | | 9 | | | 0 | 0 | | Prof. M. Passau. |
| Brussels | 30.15 | 765.7 | 30.36 | 771.1 | 37.6 | 3.1 | 55 | E | | | 2 | 1 | 1 | NE | NE | 0.008 | 0.2 | | Royal Observatory. |
| Furnes | 30.37 | 771.3 | 30.39 | 771.9 | 38.1 | 3.4 | 82 | ESE | | | 1 | | 10 | | | 0.075 | 1.9 | Snowing. | M. E. de Cae. |
| Maeseyck | 30.28 | 767.7 | 30.36 | 770.9 | 34.9 | 1.6 | 66 | ENE | | | 1 | | 6 | | | 0 | 0 | | M. Pierrot. |

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

## BRITISH SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.47 | 773.9 | 30.57 | 776.5 | 42.0 | 5.6 | | NE | 9 | 4.0 | | | 7 | | | Inap. | Inap. | D. clouds | W. Boswell. |
| Ardrossan | 30.51 | 774.9 | 30.53 | 775.4 | 50 | 10.0 | | NE | | | 2 | | 3 | | | | | Foggy | William McNeil. |
| Armagh, Observatory | | | 30.54 | 775.7 | 47.2 | 8.4 | | ESE | 5 | 2.2 | | | 3 | | | | | D. clouds | S. Call, for Dr. Robinson. |
| Bidston, (Liverpool Obs.) | | | 30.50 | 774.7 | 45.0 | 7.2 | | NNE | 9 | 4.0 | | | 9 | | | | | Overcast | John Hartnup. |
| Birr Castle, (Parsonstown) | 30.32 | 770.1 | 30.52 | 775.2 | 47.9 | 8.8 | | SE | | | 1 | | 6 | | | | | D. clouds | J. Dreyer. |
| Bradford, Yorkshire | 30.08 | 764.0 | 30.48 | 774.2 | 42.9 | 6.1 | | NE | | | 0 | | 10 | | | 0 | 0 | Overcast | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.98 | 761.5 | 30.01 | 762.2 | 82.0 | 27.8 | | NE | | | 2 | | 5 | | | | | D. clouds | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | | | 30.44 | 773.2 | 44.0 | 6.7 | | NE | | | 1 | | 10 | | | | | Overcast | H. Todd. [H. C. |
| Cardington | | | 30.46 | 773.7 | 44.4 | 6.9 | | N | | | 1 | | 9 | | | | | Overcast | John McLaren. |
| Chatham, School M. E. | 30.29 | 769.4 | 30.43 | 772.9 | 40.7 | 4.8 | | NE | | | 4 | | 9 | | | | | Overcast | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.95 | 735.3 | 30.48 | 774.2 | 41.6 | 5.3 | | E | | | 2 | | 4 | | | | | Fine | Alexander Watt. |
| Donaghadee | 30.51 | 774.9 | 30.54 | 775.7 | 47 | 8.3 | | ESE | | | 2 | | 0 | | | | | Blue sky | J. Mac Gowan. |
| Dover | 30.37 | 771.4 | 30.40 | 772.1 | 41 | 5.0 | | NE | | | 5 | | 4 | | | | | ½ clouded | J. Costello. |
| Eccles, (near Manchester) | | | 30.49 | 774.4 | 42.1 | 5.6 | | NE | | | | | 10 | | | | | Gloomy | Thomas Mackereth. |
| Falmouth, Observatory | 30.24 | 768.1 | 30.48 | 774.2 | 46.1 | 7.8 | | E | | | 1 | | 1 | | | | | Hazy | The Staff. |
| Fort Napier, (Natal) | 27.65 | 702.3 | 29.86 | 758.4 | 70.6 | 21.4 | | SE | | | 1 | | 6 | | | | | D. clouds | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.68 | 753.9 | 29.91 | 759.7 | 89.0 | 31.7 | | W | | | 2 | | 3 | | | | | D. clouds | |
| Galway, Queen's College | | | | | | | | | | | | | | | | | | | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.99 | 761.7 | 30.01 | 762.2 | 60.5 | 15.8 | | E | | | 5 | | 4 | | | | | D. clouds | Corpl. C. Aitken, A. H. C. |
| Glasgow, Observatory | 30.32 | 770.1 | 30.53 | 775.4 | 44.0 | 6.7 | | ENE | | | 2 | | 6 | | | | | D. clouds | D. G. Maclean. |
| Great Yarmouth | 30.45 | 773.4 | 30.46 | 773.7 | 40 | 4.4 | | ENE | | | 3 | | 3 | | | | | Blue sky | G. T. Watson. |
| Greenwich, Royal Obs'y | 30.25 | 768.3 | 30.43 | 772.9 | 42.9 | 6.1 | | NE | | | 2 | | 10 | | | | | Overcast | The Staff, for G. B. Airy. |
| Guernsey | 30.20 | 767.1 | 30.43 | 772.9 | 46.5 | 8.1 | | NE | | | 2 | | 3 | | | | | D. clouds | Dr. S. E. Hoskins, F. R. S. |
| Helston | | | 30.44 | 773.2 | 51 | 10.6 | | E | | | 4 | | 2c | | | | | Fine | M. P. Moyle. |
| Holyhead | 30.46 | 773.7 | 30.52 | 775.2 | 46 | 7.8 | | NE | | | 4 | | 0 | | | | | Blue sky | John Tilston. |
| Jersey | 30.13 | 765.3 | 30.43 | 772.9 | 44.0 | 6.7 | | NE | | | 4 | | 8 | | | | | Hazy | J. Fisher. |
| Kew, Observatory | | | 30.43 | 772.9 | 43.5 | 6.4 | | NNE | 20 | 8.9 | | | 8 | | | | | Threatening | The Staff. |
| Kingstown | 30.50 | 774.7 | 30.53 | 775.4 | 45 | 7.2 | | E | | | 3 | | 4 | | | | | D. clouds | George Mitchell. |
| Leicester, Museum | | | 30.47 | 773.9 | 43.0 | 6.1 | | NE | | | 2 | | 10 | | | | | Overcast | Wm. J. Harrison, F. G. S. |
| Malta, (Mediterranean) | 30.05 | 763.3 | 30.12 | 765.0 | 53.6 | 12.0 | | NE | | | 6 | | 2 | | | | | D. clouds | Sgt. Fred. Travis, A. H. |
| Nairn | 30.43 | 772.9 | 30.54 | 775.7 | 48 | 8.9 | | Calm | | | 0 | | 0 | | | | | Clear | W. D. Penny. [C. |
| Nassau, (Bahamas) | | | 30.08 | 764.0 | 72.5 | 22.5 | | NE | | | 3 | | 10 | | | | | Overcast | C. S. Duncombe. |
| Nottingham, Observatory | 30.30 | 769.6 | 30.50 | 774.7 | 41.8 | 5.4 | | N | | | 2 | | 10k;d | | NNE | 0 | 0 | Overcast | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.94 | 760.5 | 30.48 | 774.2 | 41.1 | 5.1 | | NE | | | 3 | | 10 | | | | | Overcast | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | | | 30.45 | 773.4 | 40 | 4.4 | | NE | | | 1 | | 10 | | | | | Overcast | Mr. Lucas. |
| Plymouth | 30.36 | 771.1 | 30.44 | 773.2 | 48.1 | 8.9 | | E | | | 1 | | 0 | | | | | Blue sky | John Merrifield. |
| Roche's Point | 30.43 | 772.9 | 30.47 | 773.9 | 48 | 8.9 | | SE | | | 2 | | 5 | | | | | Fine | W. Kennedy. |
| Saint Ann's Head | 30.32 | 770.1 | 30.49 | 774.4 | 46 | 7.8 | | ENE | | | 1 | | 0 | | | | | Hazy | John C. Walker. |
| Sandwick Manse, (Orkneys) | | | 30.57 | 776.5 | 46 | 7.8 | | WNW | 3 | 1.3 | | | 8 | | | | | D. clouds | Rev. C. Clouston, L. L. D. |
| Scutari, Cemetery, (Turkey | | | 29.87 | 758.7 | 43.0 | 6.1 | | NE | | | 1 | | 10 | | | | | Raining | Sergt. W. H. Lyne. |
| Sheffield | 30.17 | 766.3 | 30.49 | 774.4 | 40.6 | 4.4 | | N | | | 1 | | 10 | | | 0 | 0 | Overcast | W. F. Cooper. |
| Silloth Rectory | 30.46 | 773.7 | 30.51 | 774.9 | 46.2 | 7.9 | 66 | E | | | 1 | | 6 | | | 0 | 0 | D. clouds | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 30.11 | 764.8 | 30.51 | 774.9 | 43.0 | 6.1 | | NE | | | 1 | | 10 | | | | | Squally | Rev. S. J. Perry. |
| Stornorway, Lews C. (Hebr.) | | | 30.49 | 774.4 | 46 | 7.8 | | S | | | 1 | | 0 | | | | | Clear | John Smith. |
| Stratfield Turgiss | 30.21 | 767.3 | 30.44 | 773.2 | 42.0 | 5.6 | | NE | | | 2 | | 10 | | | | | Hailing | Rev. C. H. Griffith, F. M. S |
| Thurso | | | 30.54 | 775.7 | 47 | 8.3 | | NE | | | 1 | | 8 | | | | | Overcast | John Trotter. |
| Truro, Royal Institution | | | 30.45 | 773.4 | 55 | 12.8 | | N | | | 2 | | 6 | | | | | D. clouds | W. Newcombe. |
| Valencia, Observatory | | | 30.48 | 774.2 | 49.8 | 9.9 | | SE | 12 | 5.4 | | | 6 | | | | | Misty | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | | | | | | | | | | | | | | | | | | | Henry Mercer. |
| Cape Good Hope, Obs'y | | | | | | | | | | | | | | | | | | | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | | | 29.95 | 760.7 | 67.0 | 19.4 | 77 | SE | | | 3 | | 10k | | | 0 | 0 | Covered | Francis Abbott, F. R. A. S. |
| Leith, Restalrig Park | | | | | | | | | | | | | | | | | | | Andrew Gibb. |
| Mauritius, Observatory | 29.80 | 756.9 | 29.98 | 761.5 | 83.6 | 28.7 | 59 | ESE | 9.5 | 4.2 | | 7 | 4 | | ESE | 0 | 0 | Cloudy; fine | C. Meldrum. |
| Melbourne, Observatory | 29.55 | 750.6 | 29.64 | 752.8 | 61.6 | 16.4 | 97 | NE | 2 | 0.9 | | | 10 | | | 3.05 | 77.5 | Heavy rain | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | | | | | | | | | | | | | | | | | | | J. Youngclause. |
| North Unst, (Shetland Is.) | | | | | | | | | | | | | | | | | | | Robert Burnet. |

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

## Marine Series.

| Vessels. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|
| S. S. Algeria, N. 40° 57′, W. 62° 25′ | Smooth | NE | D. clouds | Capt. W. Watson. |
| S. S. Batavia | | | | Capt. J. E. Mouland. |
| Ship Camperdown | | | | Capt. A. T. Miller. |
| Brig Catherine | | | | Capt. Adam Smith. |
| Barque Celeste | | | | Capt. D. F. McKechnie |
| S. S. Hibernia | | | | Capt. W. R. Cato |
| Barque Maroon | | | | Capt. A. T. Brown. |
| Ship Mikado | | | | Capt. C. C. Prehn. [R. |
| S. S. Peruvian | | | | Capt. W. H. Smith, R. N. |
| Royal Alice | | | | Capt. E. M. Hughes. |
| S. S. Seine | | | | Capt. H. Manning. |
| Barque Sorata | | | | Capt. Jas. J. Price. |
| Schooner Traveller | | | | Capt. Alex. Simpson. |
| S. S. Yorkshire, N. 38° 45′ W. 74° 0′ | 3 | NW | D. clouds | Capt. H. Longley. |

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO 220 DEVONSHIRE ST BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10 | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.23 | 666.2 | ..... | ..... | 70.2 | 21.2 | 77 | E | ..... | ..... | 1 | ..... | 2sd | ..... | E | 0 | 0 | ..... | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.31 | 769.8 | 30.35 | 771.0 | 32.5 | 0.3 | 45 | NNE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | |
| Fanöe | 30.39 | 771.9 | 30.41 | 772.4 | 33.3 | 0.7 | 58 | NE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | |
| Godthaab, (Greenland) | 29.79 | 756.7 | 29.84 | 757.8 | 6.8 | —14.0 | 88 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Stykkisholm, (Iceland) | 29.75 | 755.7 | 29.80 | 756.8 | 43.0 | 6.1 | 97 | S | ..... | ..... | 7 | ..... | 5 | ..... | ..... | ..... | ..... | Raining | |
| Thorshavn, (Faröe) | 30.42 | 772.7 | 30.46 | 773.6 | 47.7 | 8.7 | 86 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Vestervig | 30.30 | 769.6 | 30.47 | 773.9 | 32.4 | 0.2 | 85 | NE | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.87 | 758.7 | 30.42 | 772.7 | 46.4 | 8 | 70 | N | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Collignon, Director. |
| Amiens, Normal School | 30.20 | 767.0 | 30.31 | 769.8 | 42.8 | 6 | 75 | NNE | ..... | ..... | 2 | ..... | 5 | ..... | NW | 0.102 | 2.6 | Cloudy | Bonvarne, Director. |
| Avignon, Normal School | 30.02 | 762.6 | 30.10 | 764.6 | 48.2 | 9 | 51 | N | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | Very clear. | Mr. Giraud, Director |
| Bar-sur-Seine | 29.69 | 754.1 | 30.28 | 769.1 | 38.8 | 3.8 | 65 | ENE | ..... | ..... | 1 | ..... | 10 | ..... | NE | 0.051 | 1.3 | Covered | C. Saillard. |
| Beaumette Obs'y (Angers) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Albert Cheux. |
| Beauvais | ..... | ..... | ..... | ..... | 42.6 | 5.9 | 56 | NE | ..... | ..... | 3 | ..... | 8 | ..... | NNE | 0.022 | 0.55 | Very cloudy | Normal School. |
| Besançon | 29.35 | 745.6 | 30.29 | 769.4 | 36.3 | 2.4 | 85 | ENE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Normal School. |
| Bourg-en-Bresse | 29.30 | 744.1 | 30.21 | 767.3 | 40.5 | 4.7 | 56 | N | ..... | ..... | 4 | ..... | 5k | ..... | N | 0.031 | 0.8 | Cloudy | Normal School. |
| Bourges, Normal School | 29.64 | 752.9 | 30.21 | 767.3 | 41.4 | 5.2 | 87 | SE | ..... | ..... | 1 | ..... | 2 | ..... | S | 0 | 0 | Slightly cl'dy | A. Wagner, Director. |
| Brest, Naval Observatory | 30.13 | 765.3 | 30.35 | 770.9 | 48.4 | 9.1 | 44 | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Carcassonne, Normal School | 29.74 | 755.4 | 30.17 | 766.2 | 50.4 | 10.2 | 84 | NW | ..... | ..... | 2 | ..... | 2 | ..... | W | 0 | 0 | Slightly cl'dy | Vateau, Director. |
| Caen | 30.30 | 769.7 | 30.34 | 770.7 | 44.2 | 6.8 | 20 | N | ..... | ..... | 6 | ..... | 8 | ..... | N | 0 | 0 | Very cloudy | Normal School. |
| Chartres, Normal School | 29.69 | 754.2 | 30.28 | 769.2 | 39.4 | 4.1 | 93 | N | ..... | ..... | 2 | ..... | 8 | ..... | NE | 0 | 0 | ..... | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.90 | 760.9 | 30.28 | 769.2 | 40.5 | 4.7 | 62 | S | ..... | ..... | 3 | ..... | 5k | ..... | S | 0 | 0 | Cloudy | T. Leloup, Director. |
| Clermont-Fd., Puy de D.Obs. | 28.84 | 732.4 | 30.24 | 768.2 | 38.8 | 3.8 | 67 | N | ..... | ..... | 2 | ..... | 10 | ..... | N | 0.012 | 0.3 | Covered | Alluard, Director. |
| Commercy, Normal School | 29.39 | 746.4 | 30.31 | 769.8 | 36.0 | 2.2 | 64 | NE | ..... | ..... | 2 | ..... | 5 | ..... | NE | 0 | 0 | Cloudy | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.89 | 733.7 | 30.03 | 762.7 | 49.1 | 9.5 | 61 | NW | ..... | ..... | 2 | ..... | 2 | ..... | NW | 0 | 0 | ¾ covered | M. Kina. |
| Grenoble | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| La Roche-sur-Yon, N. School | 30.16 | 766.1 | 30.39 | 771.8 | 45.7 | 7.6 | 46 | N | ..... | ..... | 1 | ..... | 8 | ..... | N | 0 | 0 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 30.01 | 762.2 | 30.32 | 770.2 | 43.3 | 6.3 | 53 | NE | ..... | ..... | 4 | ..... | 8 | ..... | NE | 0 | 0 | Cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 29.32 | 744.8 | 30.28 | 769.1 | 39.6 | 4.2 | 59 | N | ..... | ..... | 2 | ..... | 5 | ..... | N | 0.059 | 1.50 | Cloudy | Voudez, Director. |
| Lorient, Naval Observatory | 30.30 | 769.6 | 30.40 | 772.1 | 48.9 | 9.4 | 48 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | N | 0 | 0 | Covered | T. Carré, Director. |
| Mâcon, Normal School | 29.56 | 750.7 | 30.24 | 768.0 | 39.0 | 3.9 | 67 | NE | ..... | ..... | 2 | ..... | 5 | ..... | NE | 0.055 | 1.4 | Cloudy | M. Marchal, Director. |
| Metz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. A. Schuster, Dir. |
| Mirecourt | 29.19 | 741.5 | 30.30 | 769.5 | 34.6 | 1.4 | 64 | N | ..... | ..... | 4 | ..... | 10 | ..... | S | 0 | 0 | Covered | Normal School. |
| Nismes, Normal School | 29.95 | 760.8 | 30.16 | 766.1 | 45.7 | 7.6 | 53 | N | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Boyer, Director. |
| Orleans, Normal School | 29.87 | 758.8 | 30.26 | 768.7 | 42.4 | 5.8 | 56 | W | ..... | ..... | ..... | ..... | 5 | ..... | NW | 0 | 0 | Partly cl'dy | Bernard, Director. |
| Paris, Observatory | 30.06 | 763.4 | 30.30 | 769.7 | 39.7 | 4.3 | 64 | ENE | ..... | ..... | 1 | ..... | 10 | ..... | NE | 0.013 | 0.34 | Hailing | National Observatory. |
| Privas | 29.68 | 738.7 | 30.17 | 766.4 | 46.4 | 8 | 56 | N | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Normal School |
| Puy de Dome (Summit) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.33 | 770.3 | 30.36 | 771.1 | 48.2 | 9.0 | 61 | NE | ..... | ..... | 2 | ..... | 8 | ..... | NE | 0 | 0 | ¾ covered | Lt. Decante, Director. |
| Rouen, Normal School | 30.25 | 768.4 | 30.34 | 770.6 | 43.2 | 6.2 | 62 | NE | ..... | ..... | 6 | ..... | 2 | ..... | N | 0.319 | 8.1 | Slightly cl'dy | F. Lucard, Director. |
| Saint Malo (Port) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. H. Hercouet. |
| Tarbes, Normal School | 29.13 | 739.8 | 30.23 | 767.7 | 50.0 | 10 | 62 | WSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | T. Hugues, Director. |
| Villefranche | 29.52 | 749.7 | 30.26 | 768.6 | 39.4 | 4.1 | 77 | NNE | ..... | ..... | 1 | ..... | 5 | ..... | NE | 0.016 | 0.4 | Cloudy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.85 | 758.2 | 29.88 | 758.9 | 79.3 | 26.3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchési |
| Lyons | ..... | ..... | 30.22 | 767.5 | 41.4 | 5.2 | ..... | ..... | ..... | ..... | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | M. Jeys. |
| Marseilles, Observatory | ..... | ..... | 29.98 | 761.6 | 53.3 | 11.3 | 21 | NW | ..... | ..... | 3-4 | ..... | 1 | ..... | ..... | 0 | 0 | Slightly cl'dy | The Staff. |
| Mont-Louis | 24.81 | 630.2 | 30.13 | 765.2 | 33.1 | 0.6 | 31 | NNW | 9.3 | 4.17 | ..... | ..... | 2 | ..... | NW | 0 | 0 | ..... | Mr. Falgnère. |
| Nice | 29.93 | 760.3 | 30.01 | 762.3 | 53.8 | 12.1 | 36 | E | ..... | ..... | 8 | ..... | 5 | ..... | E | 0 | 0 | Cloudy | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 30.01 | 762.2 | 30.28 | 769.2 | 39.6 | 4.2 | 74 | E | ..... | ..... | 2 | ..... | 10 | ..... | NE | Inap. | Inap. | Sprinkling | Marié Davy, Director. |
| Perpignan | ..... | ..... | 30.14 | 765.6 | 49.8 | 9 9 | 34 | N | 14.9 | 6.66 | ..... | ..... | 1 | ..... | NW | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.39 | 568.7 | ..... | ..... | 30.6 | — 0.8 | ..... | N | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 30.13 | 765.2 | 30.29 | 769.4 | 38.3 | 3.5 | 63 | NNE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0.051 | 1.3 | Snow & hail | E. Renou. |
| Toulouse, Observatory | 28.52 | 749.7 | 30.24 | 768.2 | 44.4 | 6.9 | 26 | NW | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Tours | 30.10 | 764.4 | 30.29 | 769.4 | 45.0 | 7.2 | 60 | ENE | ..... | ..... | 3 | ..... | 8 | ..... | ENE | 0 | 0 | ..... | C. Marquet. |
| Versailles, (near Paris) | ..... | ..... | 30.29 | 769.4 | 41.0 | 5.0 | 58 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.044 | 1.13 | Snow & hail | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.28 | 769.2 | 30.31 | 769.8 | 48.6 | 9.2 | 84 | ESE | 7.2 | 3.2 | ..... | 10ck | ..... | W | ..... | 0 | 0 | Covered | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,055.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 30.14 | 765.5 | 30.32 | 770.1 | 32.9 | 0.5 | 81 | NE | | | 1 | | 10 | | | 0.018 | 0.45 | Snowing | Prof. Arndt. |
| Breslau | 29.69 | 754.0 | 30.22 | 767.6 | 33.4 | 0.8 | 51 | NNW | | | 3 | | 6 | | | 0.026 | 0.63 | | Royal University Obs'y |
| Carlsruhe | 29.84 | 757.9 | 30.29 | 769.4 | 33.4 | 0.8 | 78 | E | | | 1 | | 5 | | | 0.079 | 2.0 | | Albert Senz. |
| Cassel | 29.72 | 755.0 | 30.33 | 770.4 | 33.4 | 0.8 | 95 | N | | | 5 | | 7 | NW | | 0.018 | 0.46 | Snow-squall | Dr. H. Möhl. |
| Crefeld | 30.18 | 766.5 | 30.34 | 770.7 | 35.2 | 1.8 | 64 | NE | | | 3 | | 8K | | | 0 | 0 | | Director Lose. |
| Emden | 30.45 | 773.3 | 30.48 | 774.2 | 37.4 | 3.0 | 68 | N | | | 0 | | 5 | | | 0.024 | 0.6 | | Prof. Prestel. |
| Frankfort on the Main | 29.98 | 761.6 | 30.37 | 771.5 | 34.2 | 1.2 | 50 | NNE | | | 1 | | 8 | | | Inap. | Inap. | | Physical Society. |
| Friedrichshafen | 28.78 | 730.9 | 30.31 | 769.8 | 25.5 | — 3.6 | 91 | NNE | | | 6 | | 6 | N | | 0.036 | 0.9 | | M. Wilhelm. |
| Hamburg | 30.28 | 769.1 | 30.35 | 771.0 | 34.3 | 1.3 | 70 | NE | | | 1 | | 10ks | | | 0.004 | 0.1 | Light snow | Captain F. Hegemann. |
| Kiel | 30.35 | 770.8 | 30.36 | 771.2 | 34.0 | 1.1 | 74 | N | | | 4 | | 5 | | | 0.070 | 1.78 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 30.06 | 763.5 | 30.14 | 765.5 | 33.6 | 0.9 | 70 | N | | | | | | | | 0.087 | 2.22 | Snowing | Prof. E. Luther. |
| Köslin | | | 30.23 | 767.8 | 32.0 | 0.0 | | N | | | 4 | | 3 | NE | | 0.232 | 5.9 | | H. Müller. |
| Leipsic, Observatory | 29.92 | 760.0 | 30.37 | 771.4 | 30.9 | — 0.6 | 68 | NE | | | 1 | | 4 | ENE | | 0.262 | 6.4 | | Prof. Bruhns. |
| Memel, Naval School | 30.09 | 764.2 | 30.13 | 765.4 | 30.6 | — 0.8 | 71 | NW | | | 2 | | 10 | | | | | Snowing | Reinbrech von Skalweit. |
| Neufahrwasser | 30.17 | 766.3 | 30.19 | 766.7 | 32.2 | 0.1 | 79 | NNE | | | 3 | | 8 | | | 0.091 | 2.3 | Snow & graupel | A. Lothes. |
| Posen | 29.98 | 761.5 | 30.29 | 769.4 | 32.4 | 0.2 | 91 | NW | | | 5 | | 10 | | | 0 | 0 | Cloudy | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.75 | 755.6 | 30.33 | 770.4 | 33.3 | 0.7 | 56 | NE | | | 4 | | 6 | NE | | 0.009 | 0.24 | | Dr. Schur. |
| Stuttgart | 29.29 | 744.0 | 30.29 | 769.3 | 29.3 | — 1.5 | 66 | NE | | | 2 | | 8 | E | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | 29.68 | 753.9 | 30.21 | 767.3 | 38.1 | 3.4 | 36 | E | | | 5 | | 4 | | | Inap. | Inap. | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.68 | 728.5 | 30.24 | 768.0 | 30.2 | — 1.0 | 88 | N | 1 | 0.5 | | | 9kn | | NE | 0.118 | 3.0 | | Dr. Von Bebber. |
| Wustrow, Naval School | 30.32 | 770.1 | 30.37 | 771.4 | 34.5 | 1.4 | 86 | NE | | | 2 | | 3 | | | 0 | 0 | Clear | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 481 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.57 | 751.1 | 29.97 | 761.2 | 55.4 | 13.0 | | SW | | | 2.5 | | k | | | | | | Dr. J. F. J. Schmidt. |

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

## INDIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.77 | 756.1 | 29.82 | 757.4 | 79.8 | 26.6 | 76 | WSW | 33.07 | 14.87 | | | 6 | | | 0 | 0 | D. clouds |
| Deesa | 29.36 | 745.8 | 29.83 | 757.6 | 93.1 | 33.9 | 30 | W | | | | | 4 | W | | 0 | 0 | D. clouds |
| Bombay | 29.85 | 758.3 | 29.89 | 759.2 | 81.7 | 27.6 | 82 | WNW | 8.0 | 3.6 | | | 0 | | | 0 | 0 | Blue sky |
| Poona | 27.87 | 707.8 | 29.82 | 757.5 | 91.0 | 32.8 | 30 | NW | | | | | 5 | NW | | 0 | 0 | Dust-whirl |
| Lahore | 29.12 | 739.6 | 29.87 | 758.8 | 71.8 | 22.1 | 46 | N | 3.3 | 1.5 | | | 4 | | | 0 | 0 | Partly cl'dy |
| Belgaum | 27.37 | 695.1 | 29.85 | 758.3 | 87.7 | 30.9 | 58 | W | 19.0 | 8.5 | | | 1 | | E | | | Misty |
| Bangalore | | | | | | | | | | | | | | | | 0.04 | 1.0 | |
| Roorkee | 28.96 | 735.6 | 29.86 | 758.6 | 76.8 | 24.9 | 48 | NE | 4.2 | 1.9 | | | 9 | | | 0 | 0 | |
| Agra | 29.22 | 742.2 | 29.78 | 756.4 | 87.3 | 30.7 | 26 | E | | | | | 1 | | | | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.80 | 731.4 | 29.82 | 757.5 | 88.5 | 31.4 | 26 | Calm | 4.6 | 2.0 | | | 5 | | E | 0 | 0 | D. clouds |
| Madras | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.48 | 748.8 | 29.85 | 758.2 | 84.3 | 29.1 | 49 | WSW | 3.5 | 1.6 | | | 7 | | E | 0 | 0 | D. clouds |
| Allahabad | 29.53 | 750.1 | 29.84 | 757.9 | 85.5 | 29.7 | 39 | NE | 3.6 | 1.6 | | | 1 | | | 0 | 0 | D. clouds |
| Patna | 29.72 | 754.8 | 29.90 | 759.4 | 81.5 | 27.5 | 53 | E | 2.0 | 0.9 | | | 4 | SE | SE | 0 | 0 | D. clouds |
| Hazaribagh | 27.90 | 708.5 | 29.93 | 760.3 | 73.6 | 23.1 | 60 | W | 8.5 | 3.8 | | | 10 | | W | | | Thunder-storm |
| Cuttack | 29.81 | 757.3 | 29.90 | 759.3 | 86.1 | 30.1 | 48 | S | 5.2 | 2.3 | | | 0 | | | 0 | 0 | Blue sky |
| Calcutta (Alipore) | 29.89 | 759.1 | 29.91 | 759.6 | 87.3 | 30.7 | 41 | WSW | 3.0 | 1.3 | | | 9 | | W | 0 | 0 | Overcast |
| Goalpara | 29.55 | 750.5 | 29.95 | 760.6 | 72.2 | 22.3 | 75 | E | 11.0 | 4.9 | | | 1 | W | | 0.55 | 14.0 | D. clouds |
| Chittagong | 29.86 | 758.6 | 29.96 | 760.9 | 79.7 | 26.5 | 87 | SW | 8.2 | 3.7 | | | 0 | | | 0 | 0 | Blue sky |
| Sibsagar | 29.70 | 754.3 | 30.04 | 763.1 | 67.3 | 19.6 | 82 | E | 2.9 | 1.3 | | | 10 | SW | SW | 0.31 | 7.9 | Gloomy |
| Rangoon | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.48 | 723.5 | 29.83 | 757.6 | 90.0 | 32.2 | 26 | NW | 4.5 | 2.0 | | | | | | 0 | 0 | Blue sky |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.8 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

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

| STATIONS. | Barometer, corrected for instrum'tal error and temperature. Inches. | Barometer, corrected for instrum'tal error and temperature. Millimeters. | Reduced to sea-level. Inches. | Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.65 | 753.2 | 30.08 | 763.9 | 37.9 | 3.3 | 43 | E | 6.3 | 2.8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 29.95 | 760.6 | 30.06 | 763.5 | 43.0 | 6.1 | 47 | SSE | 13.0 | 5.8 | ..... | ..... | 10 | SE | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Vicenza | 29.86 | 758.5 | 30.06 | 763.5 | 42.6 | 5.9 | 40 | W | 6.9 | 3.1 | ..... | ..... | 9 | E | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.66 | 727.9 | 30.00 | 762.0 | 45.7 | 7.6 | 16 | SSW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.50 | 749.2 | 30.03 | 762.7 | 47.8 | 8.8 | ..... | N | ..... | ..... | 1 | ..... | 8 | NW | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.11 | 739.4 | 30.04 | 762.9 | 47.3 | 8.5 | 22 | SSE | 5.6 | 2.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 28.08 | 713.2 | 30.03 | 762.7 | 41.0 | 5.0 | 9 | E | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.83 | 757.6 | 30.05 | 763.4 | 46.4 | 8.0 | 32 | E | ..... | ..... | 6 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.89 | 759.1 | 30.06 | 763.5 | 49.6 | 9.8 | 39 | SE | 9.4 | 4.2 | ..... | ..... | 8 | S | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.80 | 757.0 | 30.13 | 765.3 | 47.3 | 8.5 | 28 | NW | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.62 | 752 3 | 30.08 | 764.0 | 46.4 | 8.0 | 80 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Cav. F Meucci. |
| Leghorn | 29.99 | 761.8 | 30.08 | 764.0 | 44.6 | 7.0 | 57 | S | 4.3 | 1.9 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 30.06 | 763.5 | 30.11 | 764.8 | 44.4 | 6.9 | 49 | E | 6.3 | 2.8 | ..... | ..... | 10 | SW | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.48 | 723.4 | 30.09 | 764.2 | 39.2 | 4.0 | 49 | E | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.97 | 761.2 | 30.08 | 764.1 | 46.6 | 8.1 | 55 | ESE | ..... | ..... | 4 | ..... | 6 | S | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.89 | 759.2 | 30.07 | 763.8 | 49.6 | 9.8 | 21 | S | 4.3 | 1.9 | ..... | ..... | 7 | ..... | ..... | 0.079 | 2.0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U. | 29.93 | 760.3 | 30.14 | 765.5 | 50.9 | 10.5 | 16 | NW | ..... | ..... | 4 | ..... | 8 | NE | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 45.7 | 7.6 | 52 | NW | 28.0 | 12.5 | ..... | ..... | 6 | N | ..... | 0.047 | 1.2 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.85 | 758.1 | 30.04 | 763.1 | 53.6 | 12.0 | 48 | NW | ..... | ..... | 2 | ..... | 3 | W | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.21 | 741.9 | 30.11 | 764.9 | 48.9 | 9.4 | 69 | SW | 11.9 | 5.3 | ..... | ..... | 2 | ..... | ..... | 0.110 | 2.8 | ..... | Prof. F. D. Conti. |
| Palermo | 29.82 | 757.5 | 30.08 | 764.1 | 51.4 | 10.8 | 28 | W | 2.5 | 1.1 | ..... | ..... | 4 | ..... | ..... | 0.094 | 2.4 | ..... | Prof. G. Cacciatore. |
| Syracuse | 30.00 | 762.1 | 30.08 | 764.0 | 53.2 | 11.8 | 56 | SE | ..... | ..... | 4 | ..... | 7 | SW | ..... | 0.134 | 3.4 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.57 | 751.1 | 30.13 | 765.2 | 47.7 | 8.7 | 30 | SW | 1.8 | 0.8 | ..... | ..... | 2 | W | ..... | 0.618 | 15.7 | ..... | Prof. F. Brioschi |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.7 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 30.11 | 764.8 | 30.18 | 766.6 | 36.4 | 2.4 | 55 | N | 7.7 | 3.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Fair ..... | The Observatory. |
| Tokei (Yeddo) University | 30.07 | 763.8 | 30.18 | 766.4 | 37 | 2.8 | 60 | NNW | 10 | 4.5 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear..... | Prof. P. V. Veeder. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | 25.12 | 638.1 | 29.91 | 759.8 | 67.1 | 19.5 | 52 | N | 0.9 | 0.4 | ..... | 5c | 5c | ..... | ..... | 0 | 0 | Covered ..... | L. Castillo, A. E. |
| Guadalajara | 25.08 | 637.1 | 30.11 | 764.9 | 50.9 | 10.5 | 65 | N | 0.9 | 0.4 | ..... | 0 | 10 | ..... | N | 0 | 0 | Covered ..... | Prof. L. Perez. |
| Guanajuato | 23.79 | 604.3 | 30.08 | 764.1 | 56.5 | 13.6 | 71 | W | ..... | ..... | ..... | 0 | 10 | ..... | ..... | 0.99 | 24.7 | Raining..... | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 54.7 | 12.6 | 98 | SE | 0.9 | 0.4 | ..... | 0 | 10n | ..... | ESE | 0.67 | 17.0 | Raining..... | Prof. M. Leal. |
| Mexico | 23.18 | 588.8 | 30.35 | 771.0 | 51.8 | 11.0 | 79 | Calm | 0 | 0 | ..... | 0 | 10n | ..... | ..... | 0.03 | 0.8 | Raining..... | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Puebla | 23.39 | 594.0 | 30.05 | 763.1 | 53.8 | 12.1 | 70 | S | 1.8 | 0.8 | ..... | 5n | 5k | ..... | SW | 0 | 0 | Overcast..... | M. V. de Leon, M. E. |
| Toluca | ..... | ..... | ..... | ..... | 54.9 | 12.7 | 65 | N | 8.5 | 3.8 | ..... | 5n | 5sn | SE | ..... | 0 | 0 | Threatening | Prof. B. Gonzalez. |
| Tlacotalpam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| San Luis Potosi | 28.99 | 761.7 | 30.00 | 762.0 | 72.5 | 22.5 | 91 | Calm | 0 | 0 | ..... | 5c | 5k | ..... | N | 0 | 0 | Dark..... | Prof. F. R. Bayly. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Zacatecas | 30.02 | 762.6 | 30.05 | 763.3 | 74.3 | 23.5 | 86 | WNW | 2.9 | 1.3 | ..... | 3c | 5sk | SW | ..... | 0 | 0 | Foggy ..... | Prof. J. Rossell. |
| Puebla, (Catholic Institute) | ..... | ..... | ..... | ..... | 45.1 | 7.3 | 45 | NW | 5.1 | 2.3 | ..... | 0 | 10n | ..... | ..... | 0 | 0 | Dark..... | J. A. Bonilla, M. E. |
| Morelia | 23.81 | 592.1 | 30.11 | 764.7 | 64.1 | 12.3 | 63 | NNE | 4.5 | 2.0 | ..... | 1c | 9 | ..... | SW | 0 | 0 | Covered..... | P. Spina. [M. M. D. D. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Tena, F. L. Param. |

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,771 m., or 5,809 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,135 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known The data are published as given.

## NETHERLANDS' SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Groningen | 30.41 | 772.5 | 30.41 | 772.5 | 37.8 | 3.2 | ..... | ENE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.094 | 2.4 | ..... | |
| Helder | 30.35 | 770.8 | 30.40 | 772.2 | 34.7 | 1.5 | ..... | NNE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 30.42 | 772.6 | 30.42 | 772.6 | 36.9 | 2.7 | ..... | NNE | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0.016 | 0.4 | ..... | |
| Utrecht | 30.40 | 772.2 | 30.40 | 772.2 | 38.5 | 3.6 | 61 | ENE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | 30.37 | 771.3 | 30.41 | 772.5 | 37.6 | 3.1 | 74 | NNE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0.146 | 3.7 | Cloudy..... | H. v d Brink. |

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

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

| STATIONS | Barometer: Corrected for instrumental error and temperature. Inches. | Barometer: Corrected for instrumental error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Upper. 0—10. | Clouds. Amount. Lower. 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.45 | 773.3 | 30.50 | 774.7 | 35.6 | 2.0 | 64 | SE | 4.3 | 1.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... |
| Bröno | 30.44 | 773.1 | 30.48 | 774.1 | 32.4 | 0.2 | 78 | SSW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... |
| Christiania | 30.33 | 770.3 | 30.48 | 774.2 | 35.6 | 2.0 | 88 | ENE | 7 | 3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... |
| Tromsö | 30.14 | 765.5 | 30.18 | 766.6 | 28.0 | — 2.2 | 83 | SW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | 0.354 | 9.0 | ..... | ..... |

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

## PORTUGUESE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.01 | 762.3 | 30.21 | 767.2 | 55.0 | 12.8 | 86 | NNW | 13.0 | 5.8 | ..... | ..... | 2 | ..... | ..... | 0.197 | 5.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.92 | 737.2 | 30.04 | 762.9 | 67.6 | 19.8 | 49 | ESE | 4.3 | 1.9 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 29.93 | 760.3 | 30.02 | 762.5 | 65.8 | 18.8 | 58 | SW | 4.9 | 2.2 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.67 | 753.6 | 30.02 | 762.6 | 63.7 | 17.6 | 54 | ENE | 4.9 | 2.2 | ..... | ..... | 4 | SW | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.08 | 763.9 | 30.16 | 766.1 | 59.0 | 15.0 | 66 | N | 15.0 | 6.7 | ..... | ..... | 5 | ESE | ..... | 0.134 | 3.4 | ..... | |

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

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell: Height scale 0–9 | Sea or swell: Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd't. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd't. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd't. |
| Mindello, Mozambique, Mozambique | 29.77 | 756.2 | 29.78 | 756.4 | 86.2 | 30.1 | ..... | ENE | ..... | ..... | 1 | ..... | 9 | ..... | ENE | 1 | ..... | Raining | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Sado, Dakar, Sennegambia | 30.08* | 764.0* | 30.09* | 764.3* | 74.3 | 23.5 | ..... | NNE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 3 | NNE | Blue sky | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.74 | 755.4 | 29.75 | 755.6 | ..... | ..... | ..... | NW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | Blue sky | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreina, dos Annas, Com' |

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.67 | 753.6 | 30.11 | 764.9 | 31.6 | — 0.2 | 81 | NW | 11 | 5 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.63 | 752.5 | 30.07 | 763.7 | 28.9 | — 1.7 | 72 | NW | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Astronomical Obs. |
| Dorpat | 29.82 | 757.5 | 30.08 | 764.0 | 23.9 | — 4.5 | 80 | N | 11 | 5 | ..... | ..... | 9ks | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.00 | 761.9 | 30.01 | 762.3 | 24.6 | — 4.1 | 75 | N | 13 | 6 | ..... | ..... | 8n | ..... | ..... | ..... | ..... | Light snow | Central Physical Obs. |
| Kuopio | 29.80 | 756.8 | 30.13 | 765.4 | 26.1 | — 3.3 | 96 | NW | 13 | 6 | ..... | ..... | 8 | ..... | ..... | Blank | Blank | ..... | Ch. Forston. |
| Kieff | 29.19 | 741.4 | 29.86 | 758.4 | 25.0 | — 3.9 | 91 | NNE | 13 | 6 | ..... | ..... | 10ks,n | ..... | ..... | ..... | ..... | Snowing | Physical Cabinet. |
| Nikolaiev | 29.44 | 747.8 | 29.51 | 749.6 | 39.4 | 4.1 | 88 | SSE | 13 | 6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.71 | 754.7 | 29.73 | 755.2 | 47.8 | 8.8 | 88 | S | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light clouds | Lagorio. |
| Moscow | 29.53 | 750.0 | 30.11 | 764.8 | 27.1 | — 2.7 | 60 | SSW | 11 | 5 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.56 | 750.8 | 29.77 | 756.1 | 39.9 | 4.4 | 82 | SW | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.85 | 758.2 | 29.87 | 758.7 | 23.0 | — 5.0 | 95 | NW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.72 | 729.6 | 30.11 | 764.9 | 68.5 | 20.3 | 27 | Calm | 0 | 0 | ..... | ..... | 8cs | ..... | ..... | ..... | ..... | Light clouds | Physical Observatory |
| Astrakhan | 30.22 | 767.5 | 30.13 | 765.4 | 47.7 | 8.7 | 69 | NNW | 2 | 1 | ..... | ..... | 6s | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Kasan | 29.88 | 758.9 | 30.16 | 766.0 | 36.1 | 2.3 | 66 | SW | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 29.28 | 743.8 | 30.27 | 768.9 | 34.3 | 1.3 | 44 | SSW | 9 | 4 | ..... | ..... | 9c | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 30.01 | 762.2 | 30.24 | 768.2 | 56.5 | 13.6 | 75 | ESE | 11 | 5 | ..... | ..... | 5ks | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.79 | 731.2 | 30.53 | 775.4 | 51.1 | 10.6 | 42 | NNW | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.98 | 761.5 | 30.54 | 775.8 | 23.5 | — 4.7 | 93 | SW | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 30.08 | 764.1 | 30.42 | 772.7 | 29.7 | — 1.3 | 89 | WSW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Krotkowo* | 29.68 | 753.9 | 30.17 | 766.3 | 38.3 | 3.5 | 78 | SSE | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Peking, (China) | 30.10 | 764.6 | 30.24 | 768.2 | 48.7 | 9.3 | 33 | Calm | 0 | 0 | ..... | ..... | 2c | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 28.18 | 715.8 | 30.38 | 771.6 | 21.2 | — 6.0 | 61 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | — 1.7 | —18.7 | 71 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.27 m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.99 | 761.7 | 30.10 | 764.5 | 46.4 | 8 | 76 | ENE | 6.4 | 2.84 | ..... | ..... | 9 | 3 | ..... | ..... | 0.075 | 1.91 | Covered | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.22 | 767.5 | 30.28 | 769.0 | 52.5 | 11.4 | 69 | E | 2.1 | 0.92 | ..... | ..... | 1 | 0 | E | ..... | 0 | 0 | Almost clear | Prof. Manuel de Navera |
| Burgos, Met. Obs'y | 27.13 | 689.0 | ..... | ..... | 47.1 | 8.4 | 65 | NE | 9.0 | 4.03 | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Domingo Martin y Perez |
| Madrid, Royal Observatory | 27.80 | 706.1 | 30.02 | 762.4 | 59.5 | 15.3 | 48 | SE | 2.2 | 1.00 | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |
| Murcia, Met. Obs'y | 29.92 | 759.9 | 30.07 | 763.7 | 63.5 | 17.5 | 73 | NW | 1.4 | 0.64 | ..... | ..... | 1 | 2 | NNE | ..... | 0 | 0 | Almost clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.10 | 739.1 | 29.97 | 761.3 | 68.2 | 20.1 | 42 | NE | 8.1 | 3.61 | ..... | ..... | 1 | 0 | Calm | ..... | 0 | 0 | Clear | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.99 | 761.7 | 30.00 | 763.4 | 74.3 | 23.5 | 88 | E | 8.0 | 3.6 | ..... | ..... | 1cs | 0 | NW | ..... | 0 | 0 | Clear | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 29.91 | 759.7 | 30.01 | 762.2 | 65.1 | 18.4 | 49 | E | 28.3 | 12.7 | ..... | ..... | 0 | 2 | ..... | SE | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.94 | 760.4 | 30.03 | 762.7 | 77.7 | 25.4 | 98 | SE | 0 | 0 | ..... | ..... | 3s | 1k | SE | SE | 0.197 | 5.00 | Clear | Leonardo de Tejeda, Chief of Engineers. |

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

## SWEDISH SERIES.

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

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. ntigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.30 | 769.6 | 30.34 | 770.6 | 25.9 | — 3.4 | ..... | N | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.37 | 771.4 | 30.42 | 772.7 | 26.2 | — 3.2 | 61 | NNE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.41 | 772.5 | 30.47 | 773.8 | 28.0 | — 2.2 | 51 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 30.11 | 764.9 | 30.29 | 769.4 | 25.2 | — 3.8 | 91 | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.016 | 0.4 | ..... | |
| Wisby | 30.13 | 765.4 | 30.19 | 766.9 | 31.3 | — 0.4 | 78 | NE | ..... | ..... | 7 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 30.29 | 769.4 | 30.37 | 771.3 | 24.8 | — 4.0 | 83 | NNW | 16.8 | 7.5 | ..... | ..... | 10 | ..... | ..... | 0.021 | 0.53 | Snowing | Dr. Hildebrandsson. |

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

## SWISS SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.72 | 729.6 | 30.21 | 767.4 | 34.7 | 1.5 | 64 | N | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0 | 0 | Cloudy | The Observatory. |
| Zurich | 28.58 | 725.4 | 30.28 | 769.2 | 30.2 | — 1.0 | 75 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.181 | 4.6 | Snowing | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +4.9 mm.; Thermometer, —6.1 cent.; Relative Humidity, +8 per cent.

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

## TURKISH SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.89 | 759.2 | 42.1 | 5.6 | 87 | NNW | 6 | 2.5 | ..... | ..... | 10 | ..... | N | 0.370 | 9.4 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanides. |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. Bertraud. |
| Valona | ..... | ..... | 30.02 | 762.6 | 48.6 | 9.2 | ..... | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.12 | .3 | Covered | Imperial Observatory. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria.) Lee Obs'y | 29.92 | 760.0 | 30.04 | 762.9 | 78.6 | 25.9 | 38 | E | ..... | ..... | 1 | ..... | 6c | ..... | ..... | 0 | 0 | D. clouds | Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.77 | 756.1 | 30.09 | 764.3 | 32 | 0.0 | ..... | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | W. R. Bigg. |
| *Chatham, N. B | 29.74 | 755.4 | 29.81 | 757.2 | 25 | — 3.9 | 85 | W | 1 | 0.4 | ..... | ..... | 10s | ..... | NW | 0.01 | 0.3 | Cloudy | G. A. Blair. |
| Charlottetown, P. E. Island | 29.68 | 753.9 | 29.72 | 754.9 | 26 | — 3.3 | 88 | N | 14 | 6.3 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light snow. | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.83 | 757.7 | 30.03 | 762.7 | 29.8 | — 1.2 | 73 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Bright | James Smith, M. A. |
| Dalhousie, N. B | 29.82 | 757.4 | 29.85 | 758.2 | 26.6 | — 3.0 | 83 | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.05 | 1.3 | Clear | H. A. Johnson. |
| Esquimault, B. C | 29.64 | 752.8 | 29.69 | 754.1 | 49.8 | 9.9 | 100 | N | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.17 | 4.3 | Cloudy | W. H. Bevis. |
| *Father Point, Quebec | 29.89 | 759.2 | 29.91 | 759.7 | 24 | — 4.4 | 87 | N | 28 | 12.5 | ..... | 2k | 8s | N | N | 0 | 0 | Clearing | J. McWilliams. |
| Fredericton, N. B | 29.80 | 756.9 | 29.87 | 758.7 | 28.0 | — 2.2 | 74 | W | 6 | 2.7 | ..... | ..... | 10s | ..... | ..... | 0.03 | 0.8 | Cloudy | Prof. Harrison. |
| *Fort Garry Manitoba | 28.87 | 733.3 | 29.70 | 754.4 | 38 | 3.3 | 97 | S | 6 | 2.7 | ..... | 5k | 5n | S | S | 0.070 | 1.78 | Light rain | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 29.08 | 737.3 | 30.18 | 766.6 | 32 | 0.0 | 100 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | James Grant. |
| *Halifax, N. S | 29.57 | 751.1 | 29.71 | 754.6 | 28 | — 2.2 | 98 | N | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | 0.140 | 3.56 | Light snow | F. Allison, M. A. |
| Hamilton, Ontario | 29.77 | 756.1 | 30.15 | 765.8 | 36.2 | 2.3 | 85 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.40 | 746.7 | 29.42 | 747.3 | 30 | — 1.1 | 100 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.36 | 9.1 | Foggy | E. Weedon. |
| *Kingston, Ontario | 29.76 | 755.6 | 30.10 | 764.5 | 34 | 1.1 | 58 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.57 | 751.1 | 29.61 | 752.1 | 31 | — 0.6 | ..... | SW | 3 | 1.3 | ..... | 8k | 0 | SW | ..... | 0.42 | 10.7 | Cloudy | C. H. Rigby. |
| *Montreal, Quebec | 29.81 | 757.2 | 30.02 | 762.5 | 30 | — 1.1 | 62 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.43 | 747.5 | 30.17 | 766.3 | 26 | — 3.3 | 95 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | Rev. R. Mosley. |
| Peterboro, Ontario | 29.34 | 745.2 | 30.12 | 765.0 | 31.7 | — 0.2 | 77 | NW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0.57 | 14.5 | Clear | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.43 | 747.5 | 30.15 | 765.8 | 35 | 1.7 | 90 | NW | 5 | 2.2 | ..... | 5c | 0 | NW | ..... | 0.10 | 2.5 | Fair | H. Morgan. |
| Port Hastings, N. S | 29.58 | 751.3 | 29.63 | 752.6 | 27.5 | — 2.5 | ..... | NW | 7 | 3.1 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.49 | 749.0 | 30.16 | 766.1 | 34 | 1.1 | 89 | NW | 6 | 2.7 | ..... | 5ck | 0 | W | ..... | 0.14 | 3.6 | Clear | M. Payne. |
| *Quebec, Quebec | 29.62 | 752.3 | 29.96 | 761.0 | 25 | — 3.9 | 75 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.67 | 753.6 | 30.15 | 765.8 | 27 | — 2.8 | 58 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | W. H. McIntyre. |
| St. Andrews, N. B | 29.78 | 756.4 | 29.83 | 757.7 | 29 | — 1.7 | 89 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | Dr. Gove. |
| St. John, N. B | 29.66 | 753.4 | 29.83 | 757.7 | 29 | — 1.7 | 94 | N | 8 | 3.6 | ..... | ..... | 10k | ..... | ..... | 0.025 | 0.63 | Cloudy | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.42 | 747.3 | 30.17 | 766.3 | 32 | 0.0 | 95 | Calm | 0 | 0 | ..... | 8ks | 0 | ..... | ..... | 0.09 | 2.3 | Cloudy | K. Stewart. |
| Stayner, Ontario | 29.36 | 745.7 | 30.17 | 766.3 | 31 | — 0.6 | 85 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | R. J. Cole. |
| Stratford, Ontario | 29.84 | 752.5 | 30.18 | 766.6 | 32.1 | 0.1 | 98 | NW | 3 | 1.3 | ..... | 2cs | 0 | ..... | ..... | 0.15 | 3.8 | Fair | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.58 | 751.3 | 29.61 | 752.1 | 31 | — 0.6 | 88 | NW | 3 | 1.3 | ..... | ..... | 10n | ..... | ..... | 0.10 | 2.5 | Cloudy | T. C. Hill. |
| *Toronto, Ontario | 29.75 | 755.6 | 30.15 | 765.8 | 36 | 2.2 | 76 | N | 6 | 2.7 | ..... | 2cs | 0 | Calm | ..... | 0.01 | 0.3 | Clear | Magnetic Observatory. |
| Windsor, N. S | 29.64 | 752.8 | 29.74 | 755.4 | 22.0 | — 5.6 | 93 | N | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | 0.15 | 3.8 | Snowing | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 33.0 | 0.6 | 100 | W | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0.38 | 9.7 | Sleeting | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182ft. or 360.3 m.

UNITED STATES SERIES.

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

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.76 | 755.9 | 29.99 | 761.7 | 36 | 2.2 | 90 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | |
| Alpena, Michigan | 29.47 | 748.5 | 30.14 | 765.5 | 31 | — 0.6 | 79 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Atlantic City, New Jersey | 30.01 | 762.2 | 30.03 | 762.7 | 41 | 5.0 | 83 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0.15 | 3.8 | Clear. | |
| Augusta, Georgia | 29.94 | 760.5 | 30.13 | 765.3 | 52 | 11.1 | 79 | Calm | 0 | 0 | ..... | 5cs | Sm'e | W | Calm | 0 | 0 | Fair | |
| Baltimore, Maryland | 30.09 | 762.0 | 30.05 | 763.3 | 45 | 7.2 | 61 | NW | 4 | 1.8 | ..... | 5k | 2s | NW | NW | Inap. | Inap. | Fair | |
| Barnegat, New Jersey | 29.96 | 761.0 | 29.99 | 761.7 | 40 | 4.4 | 72 | N | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0.16 | 4.1 | Clear | |
| Bismarck, Dakota | 28.06 | 712.7 | 29.92 | 760.0 | 38 | 3.3 | 100 | NW | 12 | 5.4 | ..... | 0 | 5s | ..... | NW | 0.08 | 2.0 | Fair | |
| Boise City, Idaho | 27.22 | 691.4 | 30.10 | 764.5 | 53 | 11.7 | 73 | NE | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0.35 | 8.9 | Cloudy | |
| Boston, Massachusetts | 29.78 | 756.4 | 29.94 | 760.5 | 35.5 | 1.9 | 76 | NW | 12 | 5.4 | ..... | 8ck | 0 | NW | ..... | 0.02 | 0.5 | Fair | |
| Brackettville, Texas | 28.89 | 733.8 | 29.92 | 760.0 | 57 | 13.9 | 87 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | Calm | Inap. | Inap. | Fair | |
| Breckenridge, Minnesota | 28.77 | 730.7 | 29.78 | 756.4 | 35 | 1.7 | 95 | S | 11 | 4.9 | ..... | 0 | 8ks | ..... | SW | 0 | 0 | Cloudy | |
| Brownsville, Texas | 29.93 | 760.2 | 30.06 | 762 0 | 71 | 21.7 | 95 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.09 | 2.3 | Cloudy | |
| Buffalo, New York | 29.39 | 746.5 | 30.11 | 764.8 | 36 | 2.2 | 90 | NW | 1 | 0.4 | ..... | 1c | 0 | NW | ..... | 0.14 | 3.6 | Clear | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 49 | 9.4 | 71 | W | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.74 | 755.4 | 30.01 | 762.2 | 33 | 0.6 | 79 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.09 | 2.3 | Clear | |
| Cairo, Illinois | 29.86 | 758.4 | 30.26 | 768.6 | 50 | 10.0 | 79 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Grant, Arizona | 25.29 | 642.4 | 30.09 | 764.3 | 52 | 11.1 | 23 | NE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Camp Verde, Arizona | 26.91 | 683.5 | 30.40 | 772.1 | 40 | 4.4 | 56 | NW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.47 | 697.5 | 30.04 | 763.0 | 40 | 4.4 | 91 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Cape Hatteras, N. Carolina | 30.06 | 763.5 | 30.07 | 763.8 | 50 | 10.0 | 79 | NE | 14 | 6.3 | ..... | 2k | 0 | NE | ..... | 0 | 0 | Fair | |
| Cape Henry, Virginia | 30.00 | 762.0 | 30.03 | 762.7 | 49 | 9.4 | 64 | NW | 22 | 9.8 | ..... | 5cs | 0 | NE | ..... | 0 | 0 | Fair | |
| Cape Lookout, N. Carolina | 30.05 | 763.3 | 30.07 | 763.8 | 55 | 12.8 | 56 | NE | 16 | 7.2 | ..... | 2c | 0 | W | ..... | 0 | 0 | Fair | |
| Cape May, New Jersey | 30.00 | 762.0 | 30.03 | 762.7 | 43 | 6.1 | 75 | N | 20 | 8.9 | ..... | 10k | 0 | W | ..... | 0.15 | 3.8 | Cloudy | |
| Charleston, South Carolina | 30.06 | 763.5 | 30.12 | 765.0 | 59 | 15.0 | 48 | NE | 9 | 4.0 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 24.13 | 612.9 | 30.07 | 763.8 | 37 | 2.8 | 63 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.44 | 747.8 | 30.15 | 765.8 | 41 | 5.0 | 82 | SW | 4 | 1.8 | ..... | 0 | Fog | ..... | ..... | 0 | 0 | Clear | |
| Cincinnati, Ohio | 29.51 | 749.5 | 30.18 | 766.6 | 41 | 5.0 | 78 | NW | 4 | 1.8 | ..... | 1k | Fog | NW | Calm | 0 | 0 | Clear | |
| Cleveland, Ohio | 29.44 | 747.8 | 30.10 | 766.8 | 37 | 2.8 | 81 | NW | 6 | 2.7 | ..... | 5ck | 0 | W | ..... | 0.06 | 1.5 | Fair | |
| Concho, Texas | 28.14 | 714.7 | 29.83 | 757.7 | 50 | 10.0 | 32 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.60 | 751.8 | 30.06 | 763.5 | 59 | 15.0 | 54 | S | 1 | 0.4 | ..... | Haze | 8s | Calm | Calm | 0 | 0 | Cloudy | |
| Davenport, Iowa | 29.53 | 750.0 | 30.18 | 766.6 | 44 | 6.7 | 76 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Deadwood, Dakota | 25.43 | 645.9 | ..... | ..... | 38 | 3.3 | 63 | S | 2 | 0.9 | ..... | 10ck | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Denison, Texas | 29.33 | 745.0 | 30.14 | 765.5 | 54 | 12.2 | 55 | N | 4 | 1.8 | ..... | 10k | 0 | W | ..... | 0 | 0 | Cloudy | |
| Denver, Colorado | 24.89 | 632.2 | 30.11 | 764.8 | 40 | 4.4 | 39 | SE | 8 | 3.6 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Detroit, Michigan | 29.47 | 748.5 | 30.16 | 766.1 | 37 | 2.8 | 90 | NW | 3 | 1.3 | ..... | 10cs | 0 | Calm | ..... | 0.03 | 0.8 | Cloudy | |
| Dodge City, Kansas | 27.46 | 693.2 | 29.83 | 757.7 | 41 | 5.0 | 57 | N | 7 | 3.1 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Dubuque, Iowa | 29.43 | 747.5 | 30.16 | 766.1 | 37 | 2.8 | 90 | W | 1 | 0.4 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Duluth, Minnesota | 29.26 | 743.2 | 29.96 | 761.0 | 28 | — 2.2 | 94 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Eagle Pass, Texas | 29.16 | 740.7 | 29.89 | 759.2 | 64 | 17.8 | 94 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Eastport, Maine | 29.76 | 755.9 | 29.82 | 757.4 | 20 | — 1.7 | 78 | N | 12 | 5.4 | ..... | 2k | 0 | NW | ..... | 0.01 | 0.3 | Clear | |
| Erie, Pennsylvania | 29.41 | 747.0 | 30.14 | 765.5 | 38 | 3.3 | 91 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | ..... | 0.40 | 10.2 | Cloudy | |
| Escanaba, Michigan | 29.44 | 747.8 | 30.12 | 765.0 | 33 | 0.6 | 80 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Florence, Arizona | 28.40 | 721.3 | 30.00 | 762.0 | 45 | 7.2 | 61 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | 24.20 | 614.7 | 30.20 | 767.1 | 42 | 5.6 | 42 | S | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.61 | 650.5 | ..... | ..... | 37 | 2.8 | 53 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Fort Gibson, Indian Ter | 29.61 | 752.1 | 30.16 | 766.1 | 41 | 5.0 | 82 | N | 1 | 0.4 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.83 | 732.3 | 30.12 | 765.0 | 48 | 8.9 | 56 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Fort St. Michael, Alaska | 29.81 | 757.2 | 29.85 | 758.2 | —30 | —34.4 | 100 | NE | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Fort Sill, Indian Territory | 28.91 | 734.3 | 30.04 | 763.0 | 47 | 8.3 | 55 | N | 8 | 3.6 | ..... | 5cs | 0 | W | ..... | 0 | 0 | Fair | |
| Galveston, Texas | 30.01 | 762.2 | 30.06 | 763.5 | 67 | 19.4 | 90 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Threatening | |
| Grand Haven, Michigan | 29.50 | 749.3 | 30.18 | 766.6 | 33 | 0.6 | 89 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Indianapolis, Indiana | 29.41 | 747.0 | 30.22 | 767.6 | 37 | 2.8 | 81 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Indianola, Texas | 30.00 | 762.0 | 30.02 | 762.5 | 68 | 20.0 | 95 | E | 10 | 4.5 | ..... | ..... | 10s | ..... | E | 0.11 | 2.8 | Cloudy | |
| Jacksboro, Texas | 28.95 | 735.3 | 30.10 | 764.5 | 49 | 9.4 | 57 | N | 1 | 0.4 | ..... | 1c | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.07 | 763.8 | 30.09 | 764.3 | 62 | 16.7 | 67 | S | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Keokuk, Iowa | 29.54 | 750.3 | 30.17 | 766.3 | 46 | 7.8 | 77 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Key West, Florida | 30.04 | 763.0 | 30.07 | 763.8 | 74 | 23.3 | 90 | NE | 6 | 2.7 | ..... | 10k;cs | 0 | NE;W | ..... | 0 | 0 | Cloudy | |
| Kittyhawk, North Carolina | 30.05 | 763.3 | 30.07 | 763.8 | 48 | 8.9 | 78 | N | 19 | 8.5 | ..... | 2k | 0 | NE | ..... | 0 | 0 | Fair | |
| Knoxville, Tennessee | 29.17 | 740.9 | 30.21 | 767.3 | 41 | 5.0 | 82 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Crosse, Wisconsin | 29.32 | 744.7 | 30.07 | 763.8 | 41 | 5.0 | 74 | S | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 26.19 | 665.2 | 30.34 | 770.6 | 37 | 2.8 | 71 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.60 | 751.8 | 29.94 | 760.5 | 67 | 19.4 | 89 | Calm | 0 | 0 | ..... | 10k | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 29.28 | 743.7 | 30.15 | 765.8 | 41 | 5.0 | 82 | S | 6 | 2.7 | ..... | 5ck | 0 | Calm | ..... | 0 | 0 | Fair | |
| Los Angeles, California | 29.70 | 754.4 | 30.04 | 763.0 | 52 | 11.1 | 86 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.63 | 752.6 | 30.21 | 767.3 | 40 | 4.4 | 65 | N | 8 | 3.6 | ..... | 0 | Sm'e | ..... | N | 0 | 0 | Smoky | |
| Lynchburg, Virginia | 29.39 | 746.5 | 30.08 | 764.0 | 48 | 8.9 | 49 | W | 4 | 1.8 | ..... | 0 | 2ks | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.30 | 744.2 | 30.00 | 762.0 | 46 | 7.8 | 69 | SW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mason, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Memphis, Tennessee | 29.92 | 760.0 | 30.24 | 768.1 | 50 | 10.0 | 59 | NE | 4 | 1.8 | ..... | 2c | Hz';sm | SW | Calm ;NE | 0 | 0 | Fair | |
| Milwaukee, Wisconsin | 29.46 | 748.3 | 30.17 | 766.3 | 36 | 2.2 | 90 | W | 7 | 3.1 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| Mobile, Alabama | 30.10 | 764.5 | 30.14 | 765.5 | 60 | 15.6 | 71 | S | 6 | 2.7 | ..... | 5ck | 2s | W | Calm | 0 | 0 | Fair | |
| Montgomery, Alabama | 29.92 | 760.2 | 30.17 | 766.3 | 56 | 13.3 | 59 | NE | 3 | 1.3 | ..... | 10ck | Haze | W | Calm | 0 | 0 | Cloudy | |
| Morgantown, West Virginia | 29.05 | 737.9 | 30.14 | 765.5 | 40 | 4.4 | 73 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | NW | 0.12 | 3.0 | Cloudy | |
| Mt. Washington, N. H. | 23.42 | 594.9 | 29.78 | 756.4 | 13 | —10.6 | 100 | NW | 54 | 24.1 | ..... | ..... | Fog | ..... | NW | 0.84 | 21.3 | Foggy | |
| Nashville, Tennessee | 29.69 | 754.1 | 30.24 | 768.1 | 43 | 6.1 | 83 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New Haven, Connecticut | 29.88 | 758.9 | 29.99 | 761.7 | 42 | 5.6 | 74 | N | 14 | 6.3 | ..... | 5c | 0 | ..... | ..... | 0.02 | 0.5 | Fair | |
| New London, Connecticut | 29.92 | 760.0 | 29.97 | 761.2 | 42 | 5.6 | 68 | N | 6 | 2.7 | ..... | 0 | 1s | ..... | Calm | 0.05 | 1.3 | Clear | |
| New Orleans, Louisiana | 30.03 | 762.7 | 30.09 | 764.3 | 65 | 18.3 | 78 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Newport, Rhode Island | 29.89 | 759.2 | 29 94 | 760.5 | 38 | 3.3 | 72 | NW | 5 | 2.2 | ..... | 7c | 0 | NW | ..... | 0.10 | 2.5 | Fair | |
| New York, New York | 29.83 | 757.7 | 30.02 | 762.5 | 42 | 5.6 | 76 | NW | 2 | 0.9 | ..... | 1c | Sm'e | Calm | Calm | 0.42 | 10.7 | Clear | |
| Norfolk, Virginia | 30.02 | 762.5 | 30.08 | 764.0 | 49 | 9.4 | 57 | N | 10 | 4.5 | ..... | 5ck | 2s | N | N | 0 | 0 | Fair | |
| North Platte, Nebraska | 27.15 | 689.6 | 29.78 | 756.4 | 38 | 3.3 | 81 | NW | 16 | 7.2 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 29.74 | 755.4 | 29.77 | 756.1 | 47 | 8.3 | 100 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.40 | 10.2 | Light rain | |
| Omaha, Nebraska | 28.89 | 733.8 | 29.98 | 761.5 | 45 | 7.2 | 76 | S | 12 | 5.4 | ..... | 2c | 2s | NW | Calm | 0 | 0 | Fair | |
| Oswego, New York | 29.75 | 755.6 | 30.08 | 764.0 | 39 | 3.9 | 73 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.21 | 5.3 | Clear | |
| Pembina, Dakota | 28.89 | 733.8 | 29.73 | 755.1 | 38 | 3.3 | 91 | S | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.02 | 0.5 | Light rain | |
| Philadelphia, Pennsylvania | 29.99 | 761.7 | 30.05 | 763.3 | 42 | 5.6 | 65 | N | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0.12 | 3.0 | Clear | |
| Phœnix, Arizona | 28.89 | 733.8 | 30.73 | 780.5 | 50 | 10.0 | 52 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.86 | 453.6 | 30.08 | 764.0 | 14 | —10.0 | 33 | NW | 16 | 7.2 | ..... | 8k | 0 | NW | ..... | 0 | 0 | Fair | |
| Pioche, Nevada | 24.17 | 613.9 | 29.94 | 760.5 | 41 | 5.0 | 57 | S | 3 | 1.3 | ..... | 5c | 2s | Calm | Calm | 0 | 0 | Cloudy | |
| Pittsburg, Pennsylvania | 29.30 | 744.2 | 30.13 | 765.3 | 40 | 4.4 | 82 | NW | 2 | 0.9 | ..... | ..... | 10s | ..... | N | 0.03 | 0.8 | Cloudy | |
| Port Huron, Michigan | 29.46 | 748.3 | 30.15 | 765.8 | 36 | 2.2 | 80 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Portland, Maine | 29.84 | 757.9 | 29.89 | 759.2 | 37 | 2 8 | 71 | NW | 9 | 4.0 | ..... | 1k | 0 | Calm | ..... | 0.11 | 2.8 | Clear | |
| Portland, Oregon | 29.79 | 756.7 | 29.89 | 759.2 | 51 | 10.6 | 93 | S | 1 | 0.4 | ..... | ..... | 10n | ..... | S | 0.28 | 7.1 | Light rain | |
| Prescott, Arizona | 24.91 | 632.7 | 30.27 | 768.8 | 33 | 0.6 | 61 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Punta Rassa, Florida | 30.09 | 764.3 | 30.11 | 764.8 | 67 | 19.4 | 69 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Red Bluff, California | 29.73 | 755.1 | 30.09 | 764.3 | 55 | 12.8 | 87 | SE | 6 | 2.7 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Rochester, New York | 29.45 | 748.0 | 30.08 | 764.0 | 39 | 3.9 | 82 | NW | 4 | 1.8 | ..... | 1c | 0 | Calm | ..... | 0.05 | 1.3 | Clear | |

## UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roseburg, Oregon | 29.31 | 744.5 | 29.87 | 758.7 | 56 | 13.3 | 69 | S | 3 | 1.3 | ..... | Haze | 8s | ..... | Calm | 0.55 | 14.0 | Cloudy | |
| Sacramento, California | 30.02 | 762.5 | 30.11 | 764.8 | 57 | 13.9 | 91 | Calm | 0 | 0 | ..... | 2k | 0 | SW | ..... | Inap. | Inap. | Fair | |
| St. Louis, Missouri | 29.65 | 753.1 | 30.24 | 768.1 | 46 | 7.8 | 77 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| St. Marks, Florida | 30.10 | 764.5 | 30.12 | 765.0 | 55 | 12.8 | 93 | W | 3 | 1.3 | ..... | 8cs | 0 | W | ..... | 0 | 0 | Fair | |
| St. Paul, Minnesota | 29.08 | 738.6 | 29.92 | 760.0 | 40 | 4.4 | 82 | SE | 4 | 1.8 | ..... | 5ck | 0 | SW | ..... | 0 | 0 | Fair | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.81 | 655.6 | 30.14 | 765.5 | 44 | 6.7 | 60 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Antonio, Texas | 29.38 | 746.2 | 29.92 | 760.0 | 64 | 17.8 | 89 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Threatening | |
| San Diego, California | 30.01 | 762.2 | 30.08 | 764.0 | 56 | 13.3 | 100 | N | 3 | 1.3 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Sandusky, Ohio | 29.50 | 749.3 | 30.19 | 766.8 | 43 | 6.1 | 83 | NW | 5 | 2.2 | ..... | ..... | 10ks | ..... | NW | 0 | 0 | Cloudy | |
| Sandy Hook, New Jersey | 29.98 | 761.5 | 30.00 | 762.0 | 41 | 5.0 | 74 | NW | 10 | 4.5 | ..... | 2c | 0 | W | ..... | 0.40 | 10.2 | Fair | |
| San Francisco, California | 30.05 | 763.3 | 30.12 | 765.0 | 54 | 12.2 | 87 | SE | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | 0.04 | 1.0 | Foggy | |
| Santa Fé, New Mexico | 23.39 | 594.1 | 29.93 | 760.2 | 31 | — 0.6 | 55 | NE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 30.00 | 762.0 | 30.10 | 764.5 | 60 | 15.6 | 55 | N | 5 | 2.2 | ..... | 5ck | Sm'e | W | ..... | 0 | 0 | Smoky | |
| Shreveport, Louisiana | 29.92 | 760.0 | 30.14 | 765.5 | 57 | 13.9 | 69 | NE | 4 | 1.8 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Smithville, North Carolina | 30.08 | 764.0 | 30.11 | 764.8 | 68 | 11.7 | 61 | N | 7 | 3.1 | ..... | 5cs | 0 | W | ..... | 0 | 0 | Fair | |
| Springfield, Massachusetts | 29.80 | 756.9 | 29.93 | 760.2 | 40 | 4.4 | 73 | N | 1 | 0.4 | ..... | 2c | 0 | N | ..... | 0.04 | 1.0 | Fair | |
| Stockton, Texas | 27.10 | 688.3 | 30.10 | 764.5 | 50 | 10.0 | 19 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.87 | 758.7 | 29.92 | 760.0 | 36 | 2.2 | 80 | N | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Toledo, Ohio | 29.47 | 748.5 | 30.17 | 766.3 | 42 | 5.6 | 83 | NW | 1 | 0.4 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 44 | 6.7 | 42 | S | ..... | ..... | ..... | 6 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tybee Island, Georgia | 30.05 | 763.3 | 30.08 | 764.0 | 60 | 15.6 | 70 | W | 4 | 1.8 | ..... | 2c | Sm'e | Calm | Calm | 0 | 0 | Fair | |
| Umatilla, Oregon | 29.45 | 748.0 | ..... | ..... | 45 | 7.2 | 84 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Vicksburg, Mississippi | 29.92 | 760.0 | 30.18 | 766.6 | 58 | 14.4 | 82 | E | 3 | 1.3 | ..... | 8c | Haze | Calm | Calm | 0 | 0 | Fair | |
| Virginia City, Montana | 24.28 | 616.7 | 29.76 | 755.9 | 40 | 4.4 | 65 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Visalia, California | 29.77 | 756.1 | 30.14 | 765.5 | 51 | 10.6 | 93 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C. | 29.97 | 761.2 | 30.09 | 764.3 | 43.5 | 6.4 | 64 | NW | 10 | 4.5 | ..... | 0 | 1s | ..... | ..... | 0.02 | 0.5 | Clear | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 41 | 5.0 | 67 | SW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.02 | 762.5 | 30.10 | 764.5 | 51 | 10.6 | 59 | NW | 4 | 1.8 | ..... | 2c | Haze | Calm | Calm | 0 | 0 | Fair | |
| Winnemucca, Nevada | 25.70 | 652.8 | 30.06 | 763.5 | 43 | 6.1 | 75 | NE | 8 | 3.6 | ..... | 0 | 2s | ..... | Calm | 0.03 | 0.8 | Fair | |
| Wood's Holl, Mass | 29.86 | 758.4 | 29.92 | 760.0 | 39 | 3.9 | 72 | NW | 10 | 4.5 | ..... | Haze | 0 | Calm | ..... | 0.02 | 0.5 | Clear | |
| Yankton, Dakota | 28.62 | 726.9 | 29.92 | 760.0 | 43 | 6.1 | 67 | SW | 13 | 5.8 | ..... | 5cs | 0 | W | ..... | 0 | 0 | Fair | |
| Yuma, Arizona | 29.83 | 757.7 | 30.00 | 762.0 | 60 | 15.6 | 48 | E | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 29.74 | 755.4 | 29.80 | 756.9 | 16.5 | — 8.6 | 100 | S | 2 | 0.9 | ..... | ..... | 10n | ..... | ..... | 0.10 | 2.5 | Snowing | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 30.01 | 762.2 | 30.03 | 762.7 | 76 | 24.4 | 86 | E | 2.4 | 1.1 | ..... | 2cs | 2ks | W | NE | 0 | 0 | Fair | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.05 | 763.3 | 30.06 | 763.5 | 78 | 25.6 | 90 | Calm | 0 | 0 | ..... | 8c | 2s | E | Calm | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.91 | 759.7 | 29.99 | 761.7 | 81 | 27.2 | ..... | NE | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | ..... | ..... | 29.99 | 761.7 | 79 | 26.1 | 91 | NE | ..... | ..... | 3 | ..... | 10n | ..... | ..... | 0.110 | 2.79 | Raining | C. J. Hering. |
| Batavia, Dutch Guiana, S. A. | 30.08 | 764.0 | 30.09 | 764.2 | 83.3 | 28.5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.19 | 639.8 | ..... | ..... | 72.0 | 22.2 | 75 | Calm | ..... | ..... | 0 | 0cs;k | 2s;ks | ..... | ..... | 0 | 0 | ..... | Thomas Herran |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medillin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 760 ft., or 583.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,100.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 8.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.83 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er. —10. | Clouds. Amount. Low'r. 0—10. | Clouds. Direction. Up'er. From— | Clouds. Direction. Low'r. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.08 | 764.0 | 55 | 12.8 | 54 | 12.2 | 93 | SSW | 2 | 0.9 | ..... | ..... | 10 | ..... | S | 0.032 | 0.81 | ..... | ..... | Overcast..... | |
| Navy Yard, Pensacola, Fla. | 30.26 | 768.6 | 63 | 17.2 | 62 | 16.7 | 83 | N | 2 | 0.9 | ..... | ..... | 5 | ..... | W | 0 | 0 | ..... | ..... | Fair..... | |
| Navy Yard, Portsmouth, N.H | 29.99 | 761.7 | 72 | 22.2 | 38 | 3.3 | 90 | NW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | Blank | Blank | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan | 30.09* | 764.3* | 49.5 | 9.7 | 39 | 3.9 | 46 | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Adams. Panama | 29.92 | 760.0 | 82 | 27.8 | 81 | 27.2 | 91 | WNW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Alliance, Piraeus, Greece | 29.96‡ | 761.0‡ | ..... | ..... | 57 | 13.9 | 81 | WNW | ..... | ..... | 3 | ..... | 3 | ..... | N | ..... | ..... | ..... | ..... | Pleasant..... | |
| Ashuelot. Shanghai, China | 30.38* | 771.6* | 60 | 15.6 | 48 | 8.9 | 85 | E | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | D. clouds..... | |
| Canonicus, New Orleans, La. | 30.09 | 764.3 | 48 | 8.9 | 63 | 17.2 | 94 | NNE | ..... | ..... | 1 | ..... | 3 | ..... | N | ..... | ..... | ..... | ..... | Pleasant..... | |
| Colorado, New York, N. Y. | 29.99‡ | 761.7‡ | ..... | ..... | 43 | 6.1 | 67 | NW | 7 | 3.1 | ..... | ..... | 5 | ..... | NNW | 0.35 | 8.9 | ..... | ..... | Hazy..... | |
| Constitution, N. 43° 25′ W. 34° 28′ | 30.14‡ | 765.5‡ | ..... | ..... | 50 | 10.0 | 100 | S | ..... | ..... | 6 | ..... | 10 | ..... | S | ..... | ..... | Mod'ate | NW | Raining..... | |
| Despatch, Constantinople, Turkey. | 30.00 | 762.0 | 71 | 21.7 | 45 | 7.2 | 92 | N | ..... | ..... | 1 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Raining..... | |
| Enterprise, New Orleans, La. | 30.10‡ | 764.5‡ | ..... | ..... | 65 | 18.3 | 89 | NE | ..... | ..... | 1-2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Franklin, Norfolk, Va. | 30.07‡ | 763.8‡ | ..... | ..... | 58 | 14.4 | 58 | N | 7 | 3.1 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Gettysburg Valetta, Malta | 30.10‡ | 764.5‡ | ..... | ..... | 54 | 12.2 | 100 | NNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.09 | 764.3 | 73 | 22.8 | 72 | 22.2 | 71 | NNE | ..... | ..... | 5 | ..... | 2 | ..... | NNE | ..... | ..... | Mod'ate Ground | NW | Clear..... | |
| Marion, Smyrna, Turkey | 29.92 | 760.0 | 61 | 16.1 | 54 | 12.2 | 80 | NW | ..... | ..... | 3 | ..... | 10 | ..... | NW | Heavy | Heavy | Smooth | SW | Cloudy ..... | |
| Michigan, Erie, Pa. | 29.60 | 751.8 | 54 | 12.2 | 38 | 3.3 | 81 | NW | ..... | ..... | 1 | ..... | 2 | ..... | W | ..... | ..... | ..... | ..... | Fair..... | |
| Monongahela. Hong-Kong, China. | 30.25* | 768.3* | 65 | 18.3 | 65 | 18.3 | 78 | E | ..... | ..... | 0-1 | ..... | 7 | ..... | ..... | ..... | ..... | Smooth | ..... | D. clouds..... | |
| New Hampshire, Port Royal, S. C. | 30.26 | 768.6 | 62 | 16.7 | 60 | 15.6 | 65 | NNE | 7 | 3.1 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | Fair ..... | |
| Omaha, N. 0° 35′, W. 31° 40′ | 30.10* | 764.5* | 84 | 28.9 | 84 | 28.9 | 77 | SSE | 3 | 1.3 | ..... | ..... | 7 | ..... | SSE | 0.14 | 3.6 | Slight | SE | Pleasant..... | |
| Onward, Callao, Peru | 29.98† | 761.5† | ..... | ..... | 74 | 23.3 | 86 | SE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, Vera Cruz, Mexico | 30.02‡ | 762.5‡ | ..... | ..... | 73 | 22.8 | 95 | NNW | ..... | ..... | 1 | ..... | 8 | ..... | NW | ..... | ..... | ..... | ..... | Hazy..... | |
| Palos, Shanghai, China | 30.38* | 771.6* | 63 | 17.2 | 48 | 8.9 | 85 | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Pensacola, Honolulu, H. I. | 30.16 | 766.1 | 72 | 22.2 | 70 | 21 1 | 80 | Calm | 0 | 0 | ..... | ..... | 2 | ..... | NE | 0 | 0 | ..... | ..... | Clear..... | |
| Plymouth. Norfolk, Va. | 29.95‡ | 760.7‡ | ..... | ..... | 51 | 10.6 | 59 | NNE | ..... | ..... | 2 | ..... | 8 | ..... | SSE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Powhatan, Havana, Cuba, W. I. | 30.08‡ | 764.0‡ | ..... | ..... | 77 | 25.0 | 91 | E | 3.6 | 1.6 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | ..... | Pleasant..... | |
| Ranger. Amoy, China | 30.43* | 772.9* | ..... | ..... | 57 | 13.9 | 87 | NE | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Overcast..... | |
| Rio Bravo, Brownsville, Texas | ..... | ..... | ..... | ..... | 71 | 21.7 | 95 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | |
| Santee, Annapolis, Md. | 30.15* | 765.8* | 67 | 19.4 | 45 | 7.2 | 68 | W | ..... | ..... | 2 | ..... | 9 | ..... | N&E | 0.01 | 0.3 | ..... | ..... | Cloudy..... | |
| Saratoga, Washington, D. C. | 30.00* | 762.0* | ..... | ..... | 48 | 8.9 | 85 | N | ..... | ..... | 1 | ..... | 5 | ..... | Calm | Heavy | Heavy | ..... | ..... | Clear..... | |
| St. Louis, League Island, Pa | 30.00 | 762.0 | 66 | 18.9 | 43 | 6.1 | 92 | N | 3 | 1.3 | ..... | ..... | 2 | ..... | NW | 0.1 | 3. | ..... | ..... | Fair..... | |
| Supply, N. 50° 00′ W. 13° 40″ | 30.35 | 770.9 | 56 | 13.3 | 50 | 10.0 | 93 | SE | ..... | ..... | 6 | ..... | 5 | ..... | SE | ..... | ..... | Mod'ate | SE | Fair ..... | |
| Swatara, Savanilla, New Grenada | 29.96* | 761.0* | ..... | ..... | 81 | 27.2 | 87 | NNE | ..... | ..... | 4 | ..... | 6 | ..... | N&E | ..... | ..... | ..... | ..... | D. clouds..... | |
| Tennessee, N. 3° 36′, E. 100° 21′ | 29.94* | 760.5* | 83 | 28.3 | 84 | 28.9 | 71 | WNW | 2 | 0.9 | ..... | ..... | 1 | ..... | SE | 0.005 | 0.13 | None | ..... | D. clouds..... | |
| Trenton, Smyrna, Turkey | 29.93‡ | 760.2‡ | ..... | ..... | 57 | 13.9 | 81 | WNW | ..... | ..... | 6 | ..... | 8 | ..... | NW | 1.0 | 25. | Mod'ate | NW | Clearing..... | |
| Tuscarora, N. 24° 20,′ W. 112° 15′ | 30.08 | 764.0 | 67 | 19.4 | 66 | 18.9 | 84 | WNW | ..... | ..... | 2 | ..... | 5 | ..... | WNW | 0 | 0 | Smooth | ..... | Fair..... | |
| Vandalia, N. 37° 07′, E. 23° 35′ | 29.88‡ | 758.9‡ | ..... | ..... | 58 | 14.4 | 76 | WNW | ..... | ..... | 4 | ..... | 2 | ..... | WSW | ..... | ..... | Mod'ate | NW | Fair..... | |
| Wabash, Boston, Mass | 29.93‡ | 760.2‡ | ..... | ..... | 36 | 2.2 | 80 | NW | 8 | 3.6 | ..... | ..... | 5 | ..... | Calm | 0.03 | 0.8 | ..... | ..... | Fair..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

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

| NAMES OF VESSELS. | TRUE COURSE TOWARD— | HOURLY RATE IN KNOTS. | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | CLOUDS. | | | | SEA-SWELL. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | CHARACTER. | DIRECTION FROM— | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, N. 22° 34′, E. 110° 00′ | | | | | 67 | 13.9 | | N | | | 6 | | 4 | | NNW | Smooth | NNE | D. clouds | Capt. Maury. |
| S. S. Colima, N. 15° 39′, W. 98° 22′ | | | 29.90† | 759.4† | 79 | 26.1 | 86 | | | | 1–2 | | 4 | | SE | Small easy | WSW | Misty | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, N. 42° 25′, W. 68° 44′ | | | 29.68† | 753.9† | 36 | 2.2 | ?? | W | | | 5 | | 10k | | WNW | Mod'ate | WSW | Fair | Capt. W. H. Thompson |
| S. S. Celtic, N. 50° 37,′ W. 22° 42′ | | | 30.16† | 766.1† | 53 | 11.7 | 93 | NE | | | 5 | | | N | | Mod'ate | NW | D. clouds | Capt. B. Gleadell. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

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

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

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic | | | | | | | | | | | | | | | | | | | Capt. John Metcalf. |
| S. S. Gaelic, N. 32° 30′, E. 149° 00′ | | | 29.97† | 761.2† | 64 | 17.8 | ?? | WNW | | | 7 | | kn | | WNW | High | W | Raining | Capt. W. H. Kidley |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

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

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | Character | Direction From— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois, N. 49° 17′, W. 20° 47′ | | | 30.16* | 766.1* | 56 | 13.3 | 94 | N | | | 4 | | 7 | | NNE | Mod'ate | NW;S | D. clouds | Captain Shackelford. |
| S. S. Indiana, N. 39° 15′ 35″, W. 69° 41′ 15″ | | | 29.92† | 760.0† | 42 | 5.6 | 100 | N | | | 6 | | 8? | | NNE | Light | NE | Clear? | Captain Sargent. |
| S. S. Ohio, N. 51° 13′, W. 16° 57′ | | | 30.16 | 766.1 | 51 | 10.6 | 86 | SE | | | 4 | | 10 | | SE | Mod'ate | S | Dull | Captain Morrison. |
| S. S. Pennsylvania, N. 43° 56′, W. 56° 42′ | | | 29.63 | 752.6 | 37 | 2.8 | 90 | WSW | | | 4 | | 6 | | WSW | Large | NW;SW | Partly clear | Captain Harris. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid †Aneroid; unreliable, corrected for elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland, N. 44° 57′, W. 38° 09′ | | | 29.82* | 757.4* | | | | WSW | 15 | 6 7 | | | 8 | | W | Confused. | S | Raining | Capt. Jackson. Capt. Nichols. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | |

*Aneroid; regulated to standard at Antwerp.

**ALLAN LINE MARINE SERIES.**

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

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

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

**MARINE SERIES. (Miscellaneous.)**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller Off Cape Henry, Va. | | | 30.00 | 762.0 | 50 | 10.0 | 72 | NNW | 14 | 6.3 | | | 8k | | N | Rough | | Cloudy | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.74 | 755.4 | —12 | —24.4 | 88* | Calm | 0 | 0 | | | 10s | | Calm | | | Light snow. | O. T. Sherman. |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Determined by use of hair hygrometer.

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

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

Albert J. Myer

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

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 16, 1878.

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

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
0:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

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

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

## ALGERIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.00 | 762.0 | 63.7 | 17.6 | ..... | SW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Dr. Ollive. |
| Nemours | ..... | ..... | 29.89 | 759.3 | 61.2 | 16.2 | 67 | N | ..... | ..... | 5 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Michel. |
| Algiers | ..... | ..... | 29.95 | 760.6 | 56.5 | 13.6 | 82 | NNE | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair. | Towilliere. |
| La Calle | ..... | ..... | 29.97 | 761.1 | 55.0 | 12.8 | 74 | ENE | ..... | ..... | 5 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Boulangeot. |
| Tunis | ..... | ..... | 29.97 | 761.1 | 60.6 | 15.9 | 52 | N | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Jacques. |
| Sfax | ..... | ..... | 29.94 | 760.5 | 73.4 | 23.0 | ..... | SE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0.157 | 4.0 | Covered | Gau. |
| Saida | ..... | ..... | 29.98 | 761.5 | 74.8 | 23.8 | 90 | ESE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Herbin. |
| Tebessa | ..... | ..... | 29.95 | 760.8 | ..... | ..... | ..... | Calm | ..... | ..... | 0 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Bourgeois. |
| Geriville | ..... | ..... | 29.93 | 760.1 | 57.2 | 14.0 | 86 | SE | ..... | ..... | 5 | ..... | 6 | ..... | ..... | 0.12 | 3. | Cloudy | Lemaillot. |
| Laghouat | ..... | ..... | 29.96 | 760.9 | 63.7 | 17.6 | 30 | E | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair. | Guyot. |
| Biskra | ..... | ..... | 29.95 | 760.6 | 51.8 | 11.0 | 42 | W | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

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

## AUSTRIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.67 | 753.7 | 30.25 | 768.4 | 38.1 | 3.4 | 63 | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.46 | 748.2 | 30.27 | 768.9 | 26.6 | — 3.0 | 94 | NNW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.004 | 0.1 | ..... | Dr. Wierzbiski. |
| Eperies | 29.22 | 742.3 | 30.15 | 765.8 | 32.7 | 0.4 | 52 | N | ..... | ..... | 2 | ..... | 9s | ..... | ..... | 0.074 | 1.88 | ..... | Julius Mikolik. |
| Gratz | 28.97 | 735.7 | 30.27 | 768.9 | 35.6 | 2.0 | 51 | NW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.66 | 727.9 | 30.17 | 766.2 | 30.6 | — 0.8 | 81 | NW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.93 | 734.8 | 30.35 | 771.0 | 29.8 | — 1.2 | 84 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.059 | 1.5 | ..... | Prof. C. Wagner |
| Lemberg | 29.04 | 737.6 | 30.08 | 764.1 | 30.7 | — 0.7 | 94 | NW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0.028 | 0.7 | ..... | Dr. T. Stanecki. |
| Pola | 30.07 | 763.7 | 30.19 | 766.7 | 40.8 | 4.9 | 32 | ENE | ..... | ..... | 3 | ..... | 7cs | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.71 | 754.6 | 30.20 | 767.0 | 34.9 | 1.6 | 58 | NW | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0.012 | 0.3 | Snow & graupel. | Johann Tamas, S. J. |
| Szegedin | 29.90 | 759.4 | 30.19 | 766.9 | 35.6 | 2.0 | 68 | NW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Karl Stancel. |
| Trieste | 30.17 | 766.2 | 30.23 | 767.8 | 41.4 | 5.2 | 29 | ENE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Fair | P. Busin. |
| Vienna | 29.55 | 750.6 | 30.31 | 769.9 | 29.5 | — 1.4 | 86 | WNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.224 | 5.7 | Snowing | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 348.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

## BELGIAN SERIES.

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

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.93 | 734.8 | 30.53 | 775.5 | 29.1 | — 1.6 | 57 | NE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. M. Passau. |
| Brussels | 30.37 | 771.5 | 30.59 | 776.9 | 35.2 | 1.8 | 55 | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ENE | 0 | 0 | ..... | Royal Observatory. |
| Furnes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. E. de Cae. |
| Maeseyck | 30.43 | 772.8 | 30.55 | 776.0 | 34.9 | 1.6 | 62 | NNE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

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

## BRITISH SERIES.

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

| STATIONS. | Barometer. Corrected for instrum't'al error and temperature. Inches. | Barometer. Corrected for instrum't'al error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.54 | 775 7 | 30.64 | 778.2 | 42.0 | 5.6 | | E | 8 | 3.6 | | | 1 | | | 0 | 0 | Blue sky | W. Boswell. |
| Ardrossan | 30.65 | 778.5 | 30.66 | 778.7 | 45 | 7.2 | | SW | | | 2 | | 7 | | | | | Misty | William McNeil. |
| Armagh, Observatory | | | 30.71 | 780.0 | 45.0 | 7.2 | | ESE | 3 | 1.3 | | | 9 | | | | | Foggy | S. Call, for Dr. Robinson. |
| Bidston, (Liverpool Obs.) | | | 30.68 | 779.3 | 42.9 | 6.1 | | ESE | 3 | 1.3 | | | 8 | | | | | Overcast | John Hartnup. |
| Birr Castle, (Parsonstown) | | | 30.70 | 779.8 | 46.9 | 8.3 | | SE | | | 1 | | 8 | | | 0 | 0 | D. clouds | J. Dreyer. |
| Bradford, Yorkshire | 30.25 | 768.3 | 30.64 | 778.2 | 40.5 | 4.7 | | NE | | | 1 | | 6 | | | | | D. clouds | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.95 | 761.5 | 30.01 | 762.2 | 82.0 | 27.8 | | NE | | | 1 | | 5 | | | | | D. clouds | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | | | 30.66 | 778.7 | 43.0 | 6.1 | | NE | | | 1 | | 7 | | | | | D. clouds | H. Todd. [H.C. |
| Cardington | | | 30.67 | 779.0 | 41.4 | 5.2 | | NE | | | 1 | | 4 | | | | | D. clouds | John McLaren. |
| Chatham, School M. E | 30.52 | 775.2 | 30.66 | 778.7 | 38.2 | 3.4 | | E | | | 2 | | 9 | | | | | Overcast | Lt. W. G. Morris, R. E. |
| Dartmoor | 29.00 | 736.6 | 30.52 | 775.2 | 42.0 | 5.6 | | E | | | 4 | | 5 | | | | | Fine | Alexander Watt. |
| Donaghadee | 30.66 | 778.7 | 30.68 | 779.3 | 45 | 7.2 | | ESE | | | 2 | | 5 | | | | | D. clouds | J. Mac Gowan. |
| Dover | 30.60 | 777.2 | 30.68 | 778.0 | 39 | 3.9 | | NE | | | 4 | | 5 | | | | | ½ clouded | J. Costello. |
| Eccles, (near Manchester) | | | 30.68 | 779.3 | 41.0 | 5.0 | | N | | | | | | | | | | Gloomy | Thomas Mackereth. |
| Falmouth, Observatory | 30.42 | 772.7 | 30.66 | 778.7 | 43.0 | 6.1 | | ENE | | | 3 | | 6 | | | | | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.72 | 704.1 | 29.92 | 760.0 | 84.6 | 29.2 | | E | | | 1 | | 0 | | | | | Blue sky | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | | | | | | | | | | | | | | | | | | | |
| Galway, Queen's College | | | | | | | | E | | | 4 | | 8 | | | | | Drizzling | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.85 | 758.2 | 29.91 | 759.7 | 59.3 | 15.2 | | WSW | | | 3 | | 8 | | | | | Gloomy | Corpl. C. Aitken, A.H.C. |
| Glasgow, Observatory | 30.46 | 773.7 | 30.66 | 778.7 | 45.1 | 7.3 | | NE | | | 3 | | 4 | | | | | D. clouds | D. G. Maclean. |
| Great Yarmouth | 30.65 | 778.5 | 30.66 | 778.7 | 39 | 3.9 | | NE | | | 2 | | 10 | | | | | Overcast | G. T. Watson. |
| Greenwich, Royal Obs'y | 30.47 | 773.9 | 30.65 | 778.5 | 40.4 | 4.7 | | NE | | | 3 | | 8 | | | | | D. clouds | The Staff, for G. B. Airy. |
| Guernsey | 30.36 | 771.1 | 30.59 | 777.0 | 41 | 5.0 | | NE | | | 4 | | 3c | | | 0 | 0 | Fine | Dr. S. E. Hoskins, F.R.S. |
| Helston | | | 30.63 | 778.0 | 51 | 10.6 | | NE | | | 2 | | 10 | | | | | Overcast | M. P. Moyle. |
| Holyhead | 30.63 | 778.0 | | | 45 | 7.2 | | NE | | | 4 | | 10 | | | | | Gloomy | John Tilston. |
| Jersey | 30.32 | 770.1 | 30.63 | 778.0 | 41.3 | 5.2 | | NE | | | | | | | | | | Hazy | J. Fisher. |
| Kew, Observatory | | | 30.66 | 778.7 | 40.0 | 4.4 | | ENE | 14 | 6.3 | | | 8 | | | | | Overcast | The Staff. |
| Kingstown | 30.68 | 779.3 | 30.71 | 780.0 | 47 | 8.3 | | SE | | | 3 | | 10 | | | | | D. clouds | George Mitchell. |
| Leicester, Museum | | | 30.70 | 779.8 | 41.3 | 5.2 | | NE | | | 2 | | 5 | | | | | Overcast | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.90 | 759.4 | 29.97 | 761.2 | 57.0 | 13.9 | | SE | | | 3 | | 8 | | | | | ¾ clouded | Sgt. Fred. Travis, A. H. |
| Nairn | 30.51 | 774.9 | 30.61 | 777.5 | 47 | 8.3 | | Calm | | | 0 | | 2 | | | | | Overcast | W. D. Penny. [O. |
| Nassau, (Bahamas) | | | 30.09 | 764.3 | 72.8 | 22 7 | | NE | | | 2 | | 10 | | | | | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 30.50 | 774.7 | 30.69 | 779.5 | 41.7 | 5.4 | | SE | | | 1 | | 5k | | NE | 0 | 0 | D. clouds | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 30.13 | 765.3 | 30.69 | 779.5 | 39.2 | 4.0 | | ENE | | | 3 | | 9 | | | | | D. clouds | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | | | 30.66 | 778.7 | 40 | 4.4 | | NE | | | 1 | | 9 | | | | | Overcast | Mr. Lucas. |
| Plymouth | 30.58 | 756.7 | 30.65 | 778.5 | 42.0 | 5.6 | | NE | | | 2 | | 8 | | | | | D. clouds | John Merrifield. |
| Roche's Point | 30.61 | 777.5 | 30.66 | 778.7 | 46 | 7.8 | | E | | | 3 | | 5 | | | | | ½ clouded | W. Kennedy. |
| Saint Ann's Head | 30.51 | 774.9 | 30.68 | 779.3 | 43 | 6.1 | | E | | | 1 | | 5 | | | | | D. clouds | John C. Walker. |
| Sandwick Manse, (Orkneys) | | | 30.60 | 777.2 | 45.3 | 7.4 | | SW | 11 | 4.9 | | | 1 | | | | | Blue sky | Rev. C. Clouston, L.L. D. |
| Scutari, Cemetery, (Turkey) | | | 30.14 | 765.5 | 48.0 | 8.9 | | NNE | | | 2 | | 3 | | | | | D. clouds | Sergt. W. H. Lyne. |
| Sheffield | 30.02? | 762.5? | 30.71 | 780.0 | 40.9 | 4.9 | | NE | | | 1 | | 7 | | | 0 | 6 | Overcast | W. F. Cooper. |
| Silloth Rectory | 30.65 | 778.5 | 30.68 | 779.3 | 46.8 | 8.2 | 63 | W | | | 1 | | 7 | | | 0 | 0 | D. clouds | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 30.28 | 769.1 | 30.68 | 779.3 | 43.6 | 6.4 | | E | | | 1 | | 10 | | | | | Gloomy | Rev. S. J. Perry. |
| Stonorway, Lews C., (Hebr.) | | | 30.57 | 776.5 | 46 | 7.8 | | SSW | | | 4 | | 10 | | | | | Overcast | John Sutherland. |
| Stratfield Turgiss | 30.43 | 772.9 | 30.66 | 778.7 | 42.3 | 5.7 | | E | | | 1 | | 4 | | | | | Blue sky | Rev. C. H. Griffith, F.M.S. |
| Thurso | | | 30.58 | 776.7 | 50 | 10.0 | | WNW | | | 1 | | 7 | | | | | D. clouds | John Trotter. |
| Truro, Royal Institution | | | 30.62 | 777.7 | 49 | 9.4 | | NE | | | 4 | | 6 | | | | | D. clouds | W. Newcombe. |
| Valencia, Observatory | | | 30.67 | 779.0 | 50.8 | 10.4 | | SSE | 11 | 4.9 | | | 2 | | | | | Misty | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | | | | | | | | | | | | | | | | | | | Henry Mercer. |
| Cape Good Hope, Obs'y | | | | | | | | | | | | | | | | | | | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | | | 29.92 | 760.0 | 66.0 | 18.9 | 72 | NW | | | 5 | | 3k | | | | | Raining | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | | | | | | | | | | | | | | | | | | | Andrew Gibb. |
| Mauritius, Observatory | 29.75 | 755.6 | 29.94 | 760.4 | 82.8 | 28.2 | 74 | NNE | 4.5 | 2.0 | | 0 | 6 | | SE | 0 | 0 | Cloudy; fine | C. Meldrum. |
| Melbourne, Observatory | 30.15 | 765.8 | 30.24 | 768.1 | 59.2 | 15.1 | 60 | SW | 20 | 8.9 | | | 10 | | | 0.80 | 20.3 | Boisterous | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | | | | | | | | | | | | | | | | | | | J. Youngclause. |
| North Unst, (Shetland Is.) | | | | | | | | | | | | | | | | | | | Robert Burnet. |

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

| Marine Series. Vessels. | Barometer. Corrected for instrum't'al error and temperature. Inches. | Barometer. Corrected for instrum't'al error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Algeria, N. 41° 58′, W. 55° 1′ | | | 29.77 | 756.1 | 35.0 | 1.7 | | WNW | | | 5 | | 10 | | | 10* | NW | Overcast | Capt. W. Watson. |
| S. S. Batavia | | | | | | | | | | | | | | | | | | | Capt. J. E. Mouland. |
| Ship Camperdown | | | | | | | | | | | | | | | | | | | Capt. A. T. Miller. |
| Brig Catherine | | | | | | | | | | | | | | | | | | | Capt. Adam Smith. |
| Barque Celeste | | | | | | | | | | | | | | | | | | | Capt. D. F. McKechnie |
| S. S. Hibernia | | | | | | | | | | | | | | | | | | | Capt. W. R. Cato |
| Barque Maroon | | | | | | | | | | | | | | | | | | | Capt. A. T. Brown. |
| Ship Mikado | | | | | | | | | | | | | | | | | | | Capt. C. C. Prehn. [R. |
| S. S. Peruvian | | | | | | | | | | | | | | | | | | | Capt. W. H. Smith, R. N. |
| Royal Alice | | | | | | | | | | | | | | | | | | | Capt. E. M. Hughes. |
| S. S. Seine | | | | | | | | | | | | | | | | | | | Capt. H. Manning. |
| Barque Sorata | | | | | | | | | | | | | | | | | | | Capt. Jas. J. Price. |
| Schooner Traveller | | | | | | | | | | | | | | | | | | | Capt. Alex. Simpson. |
| S. S. Yorkshire | | | | | | | | | | | | | | | | | | | Capt. H. Longley. |

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.20 | 665.5 | ..... | ..... | 69.4 | 20.8 | 83 | NE | ..... | ..... | 1 | p | 1s | ..... | ..... | 0 | 0 | ..... | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.37 | 771.4 | 30.42 | 772.6 | 34.0 | 1.1 | 70 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Fanöe | 30.48 | 774.3 | 30.50 | 774.8 | 39.0 | 3.9 | 64 | NNW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.81 | 757.1 | 29.85 | 758.2 | 14 | —10.0 | 77 | ENE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | 29.97 | 761.1 | 30.01 | 762.2 | 37.6 | 3.1 | 96 | SW | ..... | ..... | 7 | ..... | 8 | ..... | ..... | ..... | ..... | Raining | ..... |
| Thorshavn, (Faröe) | 30.35 | 770.9 | 30.39 | 771.8 | 48.9 | 9.4 | 83 | SW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 30.30 | 769.5 | 30.47 | 773.8 | 38.8 | 3.8 | 80 | NW | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 30.05 | 763.3 | 30.09 | 777.3 | 46.4 | 8 | 83 | NE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0.047 | 1.2 | Cloudy | Collignon, Director. |
| Amiens, Normal School | 30.50 | 774.7 | 30.62 | 777.7 | 39.2 | 4 | 62 | NE | ..... | ..... | 3 | ..... | 2 | ..... | N | 0 | 0 | Slightly cl'dy | Bonvarne, Director. |
| Avignon, Normal School | 30.12 | 765.0 | 30.20 | 767.0 | 45.5 | 7.5 | 40 | N | ..... | ..... | 6 | ..... | 0 | ..... | ..... | Blank | Blank | Clear | Mr. Giraud, Director |
| Bar-sur-Seine | 29.88 | 759.0 | 30.48 | 774.2 | 37.8 | .8.2 | 50 | NE | ..... | ..... | 3 | ..... | 2km | ..... | NE | 0 | 0 | Slightly cl'dy | C. Saillard. |
| Beaumette Obs'y (Angers) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Albert Cheux. |
| Beauvais | ..... | ..... | ..... | ..... | 36.7 | 2.6 | 55 | ENE | ..... | ..... | 3 | ..... | 5 | ..... | ENE | 0 | 0 | Cloudy | Normal School. |
| Besançon | 29.48 | 748.7 | 30.42 | 772.7 | 34.9 | 1.6 | ..... | ENE | ..... | ..... | 6 | ..... | 2 | ..... | NE | 0 | 0 | Slightly cl'dy | Normal School. |
| Bourg-en-Bresse | 29.36 | 745.8 | 30.28 | 769.0 | 39.7 | 4.3 | 73 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Normal School. |
| Bourges, Normal School | 29.77 | 756.2 | 30.35 | 770.8 | 37.8 | 3.2 | 93 | NE | ..... | ..... | 4 | ..... | 2 | ..... | SE | 0 | 0 | Slightly cl'dy | A. Wagner, Director. |
| Brest, Naval Observatory | 30.30 | 769.6 | 30.52 | 775.1 | 43.0 | 6.1 | 44 | NE | ..... | ..... | 3 | ..... | 9 | ..... | NE | 0 | 0 | Misty | The Staff. |
| Carcassonne, Normal School | 29.82 | 757.5 | 30.24 | 768.1 | 48.2 | 9 | 76 | W | ..... | ..... | 2 | ..... | 2 | ..... | W | 0 | 0 | Slightly cl'dy | Vateau, Director. |
| Caen | 30.00 | 774.0 | 30.58 | 776.6 | 39.9 | 4.4 | 44 | N | ..... | ..... | 4 | ..... | 2 | ..... | NE | 0 | 0 | Slightly cl'dy | Normal School. |
| Chartres, Normal School | 29.89 | 759.3 | 30.49 | 774.5 | 37.8 | 3.2 | 47 | NNE | ..... | ..... | 4 | ..... | 4 | ..... | NE | 0.028 | 0.7 | ..... | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 30.17 | 766.4 | 30.51 | 774.9 | 37.9 | 3.3 | 66 | NE | ..... | ..... | 3 | ..... | 5k | ..... | NE | 0 | 0 | Cloudy | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.95 | 735.2 | 30.36 | 771.2 | 36.7 | 2.6 | 84 | N | ..... | ..... | 2 | ..... | 2 | ..... | N | 0.039 | 1.0 | Slightly cl'dy | Alluard, Director. |
| Commercy, Normal School | 29.56 | 750.9 | 30.50 | 774.6 | 32.4 | 0.2 | 80 | ENE | ..... | ..... | 4 | ..... | 5 | ..... | ENE | 0 | 0 | Cloudy | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.98 | 736.2 | 30.13 | 765.2 | 46.9 | 8.3 | 32 | NE | ..... | ..... | 2 | ..... | 8 | ..... | NE | 0 | 0 | ¾ covered | M. Kina. |
| Grenoble | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| La Roche-sur-Yon, N. School | 30.24 | 768.2 | 30.47 | 774.0 | 40.3 | 4.6 | 49 | NE | ..... | ..... | 6 | ..... | 5 | ..... | NE | 0 | 0 | Cloudy | Mouillot, Director. |
| Le Mans, Normal School | 30.21 | 767.4 | 30.54 | 775.7 | 36.9 | 2.4 | 64 | NE | ..... | ..... | 6 | ..... | 5 | ..... | NE | 0.012 | 0.3 | Cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.34 | 745.1 | 30.32 | 770.2 | 37.4 | 3 | 97 | NE | ..... | ..... | 2 | ..... | 1 | ..... | NE | 0 | 0 | Clear | Voudex, Director. |
| Lorient, Naval Observatory | 30.45 | 773.5 | 30.55 | 776.0 | 42.4 | 5.8 | 70 | NNE | ..... | ..... | 5 | ..... | 5 | ..... | N | 0 | 0 | ¼ covered | T. Carré, Director. |
| Mâcon, Normal School | 29.63 | 752.5 | 30.31 | 769.9 | 34.5 | 1.4 | 89 | N | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | M. Marchal, Director. |
| Metz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. A. Schuster, Dir. |
| Mirecourt | 29.34 | 745.3 | 30.45 | 773.4 | 33.1 | 0.6 | 86 | N | ..... | ..... | 6 | ..... | 10 | ..... | S | 0 | 0 | Covered | Normal School. |
| Nismes, Normal School | 30.07 | 763.6 | 30.27 | 768.9 | 45.3 | 7.4 | 29 | N | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Boyer, Director. |
| Orleans, Normal School | 30.08 | 763.9 | 30.48 | 773.6 | 38.1 | 3.4 | 100 | NE | ..... | ..... | 6 | ..... | 5 | ..... | NE | 0 | 0 | Cloudy | Bernard, Director. |
| Paris, Observatory | 30.29 | 769.4 | 30.55 | 775.9 | 32.5 | 3.0 | 51 | NE | ..... | ..... | 2 | ..... | 8 | ..... | ENE | 0.015 | 0.37 | Very cloudy | National Observatory. |
| Privas | 29.17 | 741.0 | 30.27 | 768.9 | 45.5 | 7.5 | 52 | N | ..... | ..... | 6 | ..... | 5 | ..... | S | 0 | 0 | Cloudy | Normal School |
| Puy de Dome (Summit) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.30 | 769.5 | 30.38 | 770.8 | 43.2 | 6.2 | 75 | NE | ..... | ..... | 5 | ..... | 2 | ..... | NE | 0 | 0 | ¼ covered | Lt. Decante, Director. |
| Rouen, Normal School | 30.50 | 774.7 | 30.59 | 776.9 | 40.6 | 4.8 | 44 | NNE | ..... | ..... | 3 | ..... | 5 | ..... | NE | 0 | 0 | Cloudy. | F. Lucard, Director. |
| Saint Malo (Port) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. H. Hercouet. |
| Tarbes, Normal School | 29.16 | 740.6 | 30.27 | 768.8 | 46.4 | 8 | 72 | WSW | ..... | ..... | 2 | ..... | 5 | ..... | W | 0 | 0 | Cloudy | T. Hugues, Director. |
| Villefranche | 29.60 | 751.9 | 30.35 | 771.0 | 37.2 | 2.9 | 69 | NNW | ..... | ..... | 4 | ..... | 2 | ..... | NW | 0 | 0 | Slightly cl'dy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.87 | 758.6 | 29.89 | 759.3 | 80.6 | 27 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchès |
| Lyons | ..... | ..... | 30.34 | 770.7 | 38.5 | 3.6 | ..... | ..... | ..... | ..... | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | M. Jeys. |
| Marseilles, Observatory | ..... | ..... | 30.10 | 764.5 | 49.5 | 9.7 | 43 | W | ..... | 2-3 | ..... | 10 | ..... | ..... | ..... | 0 | 0 | Cloudy | The Staff. |
| Mont-Louis | 24.81 | 630.1 | 30.12 | 765.1 | 21.4 | — 5.9 | 48 | NNE | 16.8 | 7.50 | ..... | 4 | ..... | ..... | NNE | 0.106 | 2.7 | ..... | Mr. Falguère. |
| Nice | 30.01 | 762.2 | 30.09 | 764.2 | 55.2 | 12.9 | 27 | E | ..... | ..... | 8 | ..... | 1 | ..... | E | 0 | 0 | Clear | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 30.24 | 768.1 | 30.52 | 775.1 | 38.1 | 3.4 | 49 | NE | ..... | ..... | 4 | ..... | 6 | ..... | NE | 0.016 | 0.4 | ..... | Marié Davy, Director. |
| Perpignan | ..... | ..... | 30.18 | 766.6 | 43.3 | 6.3 | 42 | E | 18.0 | 5.83 | ..... | 10 | ..... | ..... | NW | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.34 | 567.4 | ..... | ..... | 17.6 | — 8.0 | ..... | NNE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 1.197 | 30.4 | Snowy | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 30.37 | 771.3 | 30.53 | 775.5 | 37.9 | 3.3 | 46 | NE | ..... | ..... | 2 | ..... | 7 | ..... | ENE;NE | 0 | 0 | Cloudy | E. Renou. |
| Toulouse, Observatory | 29.56 | 750.7 | 30.28 | 769.2 | 39.4 | 4.1 | 36 | NW | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Tours | 30.28 | 769.2 | 30.48 | 774.2 | 39.7 | 4.3 | 44 | ENE | ..... | ..... | 6 | ..... | 5 | ..... | ENE | 0.094 | 2.4 | ..... | C. Marquet. |
| Versailles, (near Paris) | ..... | ..... | 30.55 | 775.9 | 38.8 | 3.8 | 39 | NE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0.054 | 1.38 | Cloudy | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.35 | 770.8 | 30.37 | 771.4 | 44.6 | 7.0 | 75 | ENE | 4.0 | 1.8 | ..... | 7c | ..... | W | ..... | 0 | 0 | Very cloudy | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.3 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 30.26 | 768.6 | 30.44 | 773.2 | 34.7 | 1.5 | 68 | NE | | | 1 | | 8 | | | 0.018 | 0.45 | Snowing | Prof. Arndt. |
| Breslau | 29.81 | 757.2 | 30.35 | 770.8 | 26.8 | — 2.9 | 83 | N | | | 4 | | 10 | | | 0.072 | 1.83 | | Royal University Obs'y |
| Carlsruhe | 30.01 | 762.3 | 30.47 | 773.9 | 33.4 | 0.8 | 80 | N | | | 2 | | 7 | | | 0.008 | 0.2 | Snowy | Albert Senz. |
| Cassel | 29.92 | 760.0 | 30.54 | 775.7 | 31.6 | — 0.2 | 85 | NNE | | | 3 | | 5 | ENE | | 0.038 | 0.96 | | Dr. H. Möhl. |
| Crefeld | 30.38 | 771.7 | 30.55 | 775.9 | 35.6 | 2.0 | 60 | N | | | 4 | | 7 | | | 0 | 0 | | Director Lose. |
| Emden | 30.62 | 777.8 | 30.66 | 778.7 | 36.7 | 2.6 | 41 | N | | | 1 | | 0 | | | 0 | 0 | | Prof. Prestel. |
| Frankfort on the Main | 30.28 | 769.1 | 30.67 | 779.0 | 34.5 | 1.4 | 44 | NNE | | | 2 | | 6 | | | 0.004 | 0.1 | | Physical Society. |
| Friedrichshafen | 28.91 | 734.3 | 30.44 | 773.2 | 27.7 | — 2.4 | 79 | NE | | | 9 | | 5 | NE | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 30.47 | 773.9 | 30.54 | 775.8 | 33.3 | 0.7 | 78 | NNE | | | 3 | | 10 | | | Inap. | Inap. | Light snow | Captain F. Hegemann. |
| Kiel | 30.50 | 774.8 | 30.52 | 775.2 | 35.4 | 1.9 | 65 | N | | | 3 | | 10 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 30.20 | 767.1 | 30.28 | 769.1 | 24.8 | — 4.0 | 54 | N | | | | | | | | 0.006 | 0.15 | Snowing | Prof. E. Luther. |
| Köslin | | | 30.32 | 770.1 | 31.3 | — 0.4 | | N | | | 4 | | 3 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 30.06 | 763.5 | 30.50 | 774.8 | 33.6 | 0.9 | 60 | NE | | | 3 | | 7 | NE | | 0 | 0 | | Prof. Bruhns. |
| Memel, Naval School | 30.21 | 767.4 | 30.26 | 768.6 | 29.3 | — 1.5 | 53 | NNE | | | 2 | | 10ks | | | | | Light snow | Reinbrech von Skalweit. |
| Neufahrwasser | 30.30 | 769.7 | 30.32 | 770.1 | 31.5 | — 0.3 | 63 | NE | | | 4 | | 10 | | | 0.024 | 0.6 | | A. Lothes. |
| Posen | 30.09 | 764.3 | 30.40 | 772.1 | 31.6 | — 0.6 | 95 | NW | | | 6–7 | | 6 | | | 0.006 | 0.15 | Cloudy | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.91 | 759.6 | 30.49 | 774.5 | 34.2 | 1.2 | 50 | NE | | | 3 | | 3 | E | | 0 | 0 | | Dr. Schur. |
| Stuttgart | 29.45 | 747.9 | 30.45 | 773.3 | 31.5 | — 0.3 | 83 | E | | | 1 | | 6 | E | | 0.008 | 0.2 | Snowing | Prof. Schoder. |
| Treves, (Trier) | 29.87 | 758.7 | 30.40 | 772.2 | 36.5 | 2.6 | 48 | NE | | | 6 | | 7 | | | 0.009 | 0.22 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.84 | 732.6 | 30.45 | 773.5 | 28.0 | — 2.2 | 89 | Calm | 0 | 0 | | | 9kn | NW | E | 0.016 | 0.4 | Snowing | Dr. Von Bebber. |
| Wustrow, Naval School | 30.53 | 775.4 | 30.57 | 776.5 | 31.1 | — 0.5 | 56 | NNE | | | 4 | | 10 | | | 0 | 0 | Covered | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.70 | 754.4 | 30.10 | 764.5 | 53.2 | 11.8 | | S | | | 1.0 | | | | | | | ⅓ clear | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.82 | 757.5 | 29.87 | 758.7 | 87.1 | 30.6 | 61 | WSW | 19.07 | 8.52 | | | 0 | | | 0 | 0 | Misty | |
| Deesa | 29.38 | 746.3 | 29.85 | 758.2 | 91.9 | 33.3 | 27 | Calm | | | | | 1 | WNW | | 0 | 0 | D. clouds | |
| Bombay | 29.88 | 759.1 | 29.92 | 760.0 | 82.5 | 28.1 | 73 | W | 10.0 | 4.5 | | | 2 | SSW | | 0 | 0 | D. clouds | |
| Poona | 27.86 | 707.6 | 29.82 | 757.5 | 89.2 | 31.8 | 26 | NW | | | | | 1 | | W | 0 | 0 | Dust-whirl | |
| Lahore | 29.21 | 742.0 | 29.97 | 761.2 | 72.8 | 22.7 | 53 | NE | 3.5 | 1.6 | | | 1 | | | 0.11 | 2.8 | Blue sky | |
| Belgaum | 27.38 | 695.4 | 29.88 | 758.8 | 85.1 | 29.5 | 68 | W | 10.0 | 4.5 | | | 1 | | | 0 | 0 | Misty | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 29.09 | 738.8 | 30.02 | 762.6 | 62.8 | 17.1 | 62 | NE | 5.1 | 2.3 | | | 8 | | | 0.57 | 14.5 | | |
| Agra | 29.31 | 744.4 | 29.88 | 758.8 | 79.7 | 26.5 | 55 | E | | | | | 8 | | E | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.79 | 731.2 | 29.81 | 757.1 | 94.5 | 34.7 | 18 | SW | 2.9 | 1.3 | | | 8 | | SE | 0 | 0 | D. clouds | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.56 | 750.7 | 29.94 | 760.4 | 74.3 | 23.5 | 76 | NE | 10.0 | 4.5 | | | 9 | | | 0.15 | 3.8 | D. clouds | |
| Allahabad | 29.59 | 751.6 | 29.90 | 759.5 | 84.6 | 29.2 | 54 | Calm | 5.6 | 2.5 | | | 1 | | | 0 | 0 | D. clouds | |
| Patna | 29.74 | 755.3 | 29.92 | 759.9 | 80.9 | 27.2 | 43 | E | 4.3 | 1.9 | | | 4 | E | E | 0 | 0 | D. clouds | |
| Hazaribagh | 27.89 | 708.3 | 29.93 | 760.2 | 71.8 | 22.1 | 63 | E | 9.3 | 4.2 | | | 8 | S | N | 0.21 | 5.3 | Thunder-storm | |
| Cuttack | 29.85 | 758.1 | 29.93 | 760.2 | 84.2 | 29.0 | 56 | S | 6.5 | 2.9 | | | 3 | | | 0 | 0 | D. clouds | |
| Calcutta (Alipore) | 29.90 | 759.6 | 29.93 | 760.1 | 79.7 | 26.5 | 70 | S | 7.0 | 3.1 | | | 9 | | W | 0.01 | 0.3 | | |
| Goalpara | 29.56 | 750.7 | 29.95 | 760.8 | 72.2 | 22.3 | 78 | S | 5.6 | 2.5 | | | 7 | | | 0.17 | 4.3 | D. clouds | |
| Chittagong | 29.92 | 760.0 | 30.01 | 762.3 | 79.9 | 26.6 | 87 | W | 4.0 | 1.8 | | | 4 | | | 0 | 0 | Blue sky | |
| Sibsagar | 29.69 | 754.2 | 30.04 | 762.9 | 71.6 | 22.0 | 77 | ENE | 3.2 | 1.4 | | | 10 | SW | SW | 0.20 | 5.1 | D. clouds | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.50 | 723.8 | 29.84 | 758.0 | 86.5 | 30.3 | 31 | NE | 3.3 | 1.5 | | | 5 | | NW | 0 | 0 | D. clouds | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.78 | 756.3 | 30.20 | 767.0 | 41.2 | 5.1 | 52 | S | 1.8 | 0.8 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 30.10 | 764.4 | 30.21 | 767.3 | 40.1 | 4.5 | 29 | E | 13.7 | 6.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 30.01 | 762.2 | 30.21 | 767.2 | 40.6 | 4.7 | 30 | ENE | 3.1 | 1.4 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.82 | 731.9 | 30.16 | 766.0 | 42.8 | 6.0 | 30 | SSW | ..... | ..... | 6 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.66 | 753.4 | 30.20 | 767.0 | 46.4 | 8.0 | ..... | S | ..... | ..... | 1 | ..... | 3 | N | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.31 | 744.4 | 30.23 | 767.9 | 42.8 | 6.0 | 36 | SSW | 1.8 | 0.8 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 28.23 | 717.1 | 30.18 | 766.6 | 32.9 | 0.5 | 64 | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.92 | 760.0 | 30.15 | 765.8 | 46.0 | 7.8 | 21 | NNE | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0.047 | 1.2 | ..... | Prof. L. Vassallo. |
| Genoa | 29.97 | 761.3 | 30.15 | 765.7 | 49.1 | 9.5 | 18 | N | 4.9 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.91? | 759.7? | 30.24? | 768.1? | 43.2 | 6.2 | 45 | SE | ..... | ..... | 0 | ..... | 2 | ..... | ..... | 0.008 | 0.2 | ..... | Prof. P. Pigorini. |
| Florence | 29.86 | 758.4 | 30.12 | 765.1 | 42.8 | 6.0 | 33 | NE | ..... | ..... | 8 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 30.00 | 762.1 | 30.09 | 764.8 | 43.9 | 6.6 | 32 | N | 19.2 | 8.6 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 30.14 | 765.5 | 30.10 | 766.8 | 42.6 | 5.9 | 54 | NE | 6.3 | 2.8 | ..... | ..... | 10 | E | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.55 | 725.2 | 30.16 | 766.0 | 34.7 | 1.5 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.94 | 760.5 | 30.06 | 763.4 | 46.0 | 7.8 | 66 | NNE | ..... | ..... | 6 | ..... | 4 | NE | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.85 | 758.3 | 30.04 | 762.9 | 48.6 | 9.2 | 44 | E | 3.1 | 1.4 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U. | 29.82 | 757.3 | 30.02 | 762.5 | 46.8 | 8.2 | 57 | NE | ..... | ..... | 4 | ..... | 10 | SE | ..... | 0.677 | 17.2 | ..... | Prof. L. Palmieri. |
| Cagliari | ..... | ..... | ..... | ..... | 50.0 | 10.0 | 50 | SSE | 12.5 | 5.6 | ..... | ..... | 8 | S | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cosenza | 29.75 | 755.6 | 29.95 | 760.6 | 49.1 | 9.5 | 67 | NW | ..... | ..... | 2 | ..... | 10 | W | ..... | 0.039 | 1.0 | ..... | Prof. A. Pacinotti. |
| Palermo | 29.13 | 739.9 | 30.04 | 762.9 | 53.6 | 12.0 | 74 | NE | 14.3 | 6.4 | ..... | ..... | 6 | ..... | ..... | 0.067 | 1.7 | ..... | Prof. F. D. Conti. |
| Syracuse | 29.65 | 753.0 | 29.91 | 759.6 | 56.3 | 13.5 | 45 | SW | 1.8 | 0.8 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Sub-Series. | 29.91 | 759.6 | 29.98 | 761.5 | 55.4 | 13.0 | 59 | SE | ..... | ..... | 2 | ..... | 10 | SW | ..... | 0.004 | 0.1 | ..... | Prof. V. Giuliano. |
| Naples, S. R. | 29.48 | 748.8 | 30.04 | 762.9 | 42.8 | 6.0 | 60 | ENE | 0.7 | 0.3 | ..... | ..... | 10 | NE | ..... | 0.079 | 2.0 | ..... | Prof. F. Brioschi |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 879.6 m., or 1,245.8 ft.; Mondovi, 556 m., or 1,824.7 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 29.98 | 761.5 | 30.05 | 763.3 | 43.1 | 6.2 | 81 | SE | 3.3 | 1.5 | ..... | 0 | 1ck | ..... | ..... | 0 | 0 | Fair | The Observatory. |
| Tokei (Yeddo) University | 29.89 | 759.2 | 29.99 | 761.8 | 43.5 | 6.4 | 83 | ESE | 3.4 | 1.5 | ..... | 1cs | ..... | ..... | ..... | 0 | 0 | Fair | Prof. P. V. Veeder. |

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascallentes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | 25.12 | 638.0 | 29.91 | 759.8 | 62.6 | 17.0 | 50 | N | 1.8 | 0.8 | ..... | 6ck | 0 | E | ..... | 0 | 0 | ½ cloudy | L. Castillo, A. E. |
| Guadalajara | 25.11 | 637.9 | 30.19 | 766.8 | 47.8 | 6.8 | 66 | NW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Blue sky | Prof. L. Perez. |
| Guanajuato | 23.73 | 602.8 | 30.04 | 763.1 | 51.8 | 11.0 | 73 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.27 | 6.8 | Hazy | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 48.4 | 9.1 | 89 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.21 | 5.2 | Fair | Prof. M. Leal. |
| Mexico | 23.11 | 586.9 | 30.17 | 766.3 | 54.0 | 12.2 | 71 | Calm | 0 | 0 | ..... | 0 | 3ks | ..... | SW | 0.02 | 0.5 | ..... | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 45.1 | 7.3 | 83 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Very clear | M. V. de Leon, M. E. |
| Puebla | 23.36 | 593.4 | 30.02 | 762.5 | 54.0 | 12.2 | 77 | E | 4.7 | 2.1 | ..... | 5n | 5n | WSW | WSW | 0 | 0 | Covered | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. F. R. Bayly. |
| San Luis Potosi | 29.96 | 761.0 | 29.97 | 761.3 | 71.6 | 22.0 | 89 | SE | 0.9 | 0.4 | ..... | 5c | 5k | SE | SW | 0 | 0 | Covered | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | 30.02 | 762.6 | 30.05 | 763.3 | 73.4 | 23.0 | 83 | NW | 6.9 | 3.1 | ..... | 5ck | 3sk | SW | ..... | 0 | 0 | Cloudy | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | ..... | ..... | ..... | ..... | 49.1 | 9.5 | 72 | WSW | 0.9 | 0.4 | ..... | 3ck | 0 | W | ..... | 0.20 | 5.0 | Hazy | P. Spina. [M. M. D. D. |
| Morelia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Tena, F. L. Param. |

NOTE.—The elevation of Aguascallentes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,635 m., or 8,641.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.64 | 778.3 | 30.64 | 778.3 | 37.8 | 3.2 | ..... | NE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.055 | 1.4 | ..... | |
| Groningen | 30.56 | 776.1 | 30.61 | 777.5 | 36.1 | 2.3 | ..... | N | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 30.61 | 777.4 | 30.61 | 777.4 | 36.3 | 2.4 | ..... | NNE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.008 | 0.2 | ..... | |
| Hellevoetsluis | 30.62 | 777.8 | 30.62 | 777.8 | 37.9 | 3.3 | 64 | ENE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 30.57 | 776.5 | 30.62 | 777.7 | 36.1 | 2.3 | 90 | NE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | H. v d Brink. |

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS | Barometer: Corrected for instrumental error and temperature. Inches. | Barometer: Corrected for instrumental error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.49 | 774.5 | 30.55 | 775.9 | 35.6 | 2.0 | 68 | NNW | 6.7 | 3.0 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | |
| Bröno | 30.15 | 765.7 | 30.19 | 766.7 | 39.6 | 4.2 | 93 | SW | 27 | 12 | ..... | ..... | 10 | ..... | ..... | 0.551 | 14.0 | Raining | |
| Christiania | 30.24 | 768.0 | 30.39 | 771.9 | 36.5 | 2.5 | 57 | S | 0 | 0 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 30.21 | 767.2 | 30.25 | 768.3 | 38.5 | 3.6 | 87 | SW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | 0.295 | 7.5 | Light rain | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.11 | 764.9 | 30.31 | 769.9 | 53.6 | 12.0 | 90 | ESE | 3.1 | 1.4 | ..... | ..... | 8 | ..... | ..... | 0.039 | 1.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.01 | 736.8 | 30.05 | 763.2 | 56.3 | 13.5 | 73 | NE | 15.4 | 6.9 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 29.81 | 757.1 | 29.91 | 759.7 | 60.6 | 15.9 | 56 | NNE | 7.4 | 3.3 | ..... | ..... | 6 | ..... | ..... | 0.205 | 5.2 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.64 | 752.8 | 30.00 | 761.9 | 59.4 | 15.2 | 21 | NE | 22.4 | 10.0 | ..... | ..... | 4 | N | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.23 | 767.9 | 30.32 | 770.1 | 60.8 | 16.6 | 56 | NNE | 9.4 | 4.2 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell: Height scale 0–9 | Sea or swell: Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd 't |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd 't |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd t. |
| Mindello, Mozambique, Mozambique | 29.78 | 756.4 | 29.79 | 756.6 | 86.5 | 30.3 | ..... | ENE | ..... | ..... | 1 | ..... | 8 | ..... | NNE | 1 | ..... | Blue sky | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Sado, Dakar, Sennegambia | 30.08* | 763.9* | 30.09* | 764.2* | 74.8 | 23.8 | ..... | NNE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 3 | NNE | Blue sky | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.74 | 755.4 | 29.75 | 755.6 | ..... | ..... | ..... | WSW | ..... | ..... | 1 | ..... | 4 | ..... | WSW | 1 | ..... | Blue sky | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreira, dos Anas, Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.80 | 756.8 | 30.25 | 768.3 | 25.9 | — 3.4 | 65 | N | 11 | 5 | ..... | ..... | 10n | ..... | ..... | ..... | Light snow. | Astronomical Obs. |
| Wilna | 29.72 | 755.0 | 30.17 | 766.4 | 24.3 | — 4.3 | 77 | N | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | Snowing | Astronomical Obs. |
| Dorpat | 29.94 | 760.5 | 30.20 | 767.1 | 25.2 | — 3.8 | 87 | NW | 7 | 3 | ..... | ..... | 5k | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.11 | 764.8 | 30.13 | 765.2 | 26.8 | — 2.9 | 74 | N | 11 | 5 | ..... | ..... | 5ks | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.82 | 757.3 | 30.16 | 766.0 | 23.0 | — 5.0 | 95 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Ch. Forsten. |
| Kieff | 29.35 | 745.4 | 30.02 | 762.5 | 26.6 | — 3.0 | 57 | NW | 9 | 4 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 30.08 | 764.0 | 30.15 | 765.8 | 34.7 | 1.5 | 46 | W | 13 | 6 | ..... | ..... | 5k | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.19 | 766.9 | 30.21 | 767.4 | 44.2 | 6.8 | 73 | N | 2 | 1 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 28.89 | 733.7 | 29.46 | 748.2 | 24.3 | — 4.3 | 91 | N | 11 | 5 | ..... | ..... | 10s | ..... | ..... | ..... | Snowing | Meteorological Obs. |
| Lugan | 29.71 | 754.7 | 29.93 | 760.1 | 34.9 | 1.6 | 69 | WSW | 31 | 14 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 30.10 | 764.6 | 30.12 | 765.1 | 25.9 | — 3.4 | 87 | WNW | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.65 | 727.6 | 30.05 | 763.3 | 60.3 | 15.7 | 40 | N | 4 | 2 | ..... | ..... | 8k | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.16 | 766.1 | 30.08 | 764.0 | 55.9 | 13.3 | 46 | NNW | 2 | 1 | ..... | ..... | 4cs;s | ..... | ..... | ..... | Light clouds | Sebastianof. |
| Kasan | 29.61 | 752.2 | 29.89 | 759.3 | 35.1 | 1.7 | 68 | SE | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 29.32 | 744.6 | 30.29 | 769.4 | 38.7 | 3.7 | 45 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | Light clouds | Meteorological Obs |
| Nukuss | 29.93 | 760.2 | 30.16 | 766.1 | 62.6 | 17.0 | 72 | SSE | 11 | 5 | ..... | ..... | 5cs | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.67 | 728.3 | 30.39 | 772.0 | 54.9 | 12.7 | 46 | Calm | 0 | 0 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 30.08 | 764.1 | 30.65 | 778.4 | 26.4 | — 3.1 | 65 | S | 0 | 0 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.99 | 761.7 | 30.33 | 770.4 | 26.8 | — 2.9 | 89 | SW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | Snowing | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Krotkowo* | 29.43 | 747.5 | 29.92 | 759.9 | 36.1 | 2.3 | 79 | S | 20 | 9 | ..... | ..... | 10k | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Peking, (China) | 30.36 | 771.2 | 30.50 | 774.8 | 41.0 | 5.0 | 46 | SW | 7 | 3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.93 | 709.4 | 30.04 | 763.1 | 33.6 | 0.9 | 55 | NW | 7 | 3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 12.7 | —10.7 | 66 | NW | 4 | 2 | ..... | ..... | 5ck | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 892 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 51° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | ..... | ..... | 30.00 | 762.1 | 47.3 | 8.5 | 44 | E | 5.7 | 2.53 | ..... | 0 | 2k | ..... | ..... | 0 | 0 | ..... | Ar. tonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.31 | 769.8 | 30.37 | 771.3 | 46.0 | 7.8 | 65 | E | 2.7 | 1.22 | ..... | 2 | 6 | NE | ..... | 0.028 | 0.7 | Snowing | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.19 | 690.6 | ..... | ..... | 33.8 | 1.0 | 92 | N | 1.9 | 5.31 | ..... | ..... | 10 | ..... | ..... | 0.071 | 1.8 | Snowing | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.82 | 706.6 | 30.08 | 764.1 | 49.5 | 9.7 | 33 | NE | 36.5 | 16.33 | ..... | 0 | 6 | ..... | ..... | 0 | 0 | Cloudy | The Staff. |
| Murcia, Met. Obs'y | 29.82 | 757.5 | 29.97 | 761.3 | 62.8 | 17.1 | 47 | S | 3.7 | 1.64 | ..... | 3 | 4 | SW | ..... | 0 | 0 | Cloudy | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.26 | 743.2 | 30.17 | 766.4 | 50.5 | 10.3 | 71 | ENE | 32.9 | 14.72 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.97 | 761.2 | 30.04 | 762.9 | 73.8 | 23.2 | 78 | ENE | 9.2 | 4.1 | ..... | ..... | 10n | ..... | ..... | Inap. | Inap. | Raining | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 29.83 | 757.7 | 29.93 | 760.2 | 65.1 | 18.4 | 51 | SE | 23.9 | 10.7 | ..... | 2 | 5 | SE | SE | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.92 | 759.9 | 30.01 | 762.2 | 76.3 | 24.6 | 92 | SE | 0 | 0 | ..... | ..... | 2k | 0 | SE | ..... | 0 | 0 | Clear | Leonardo de Tejeda, Chief of Engineers. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.6 ft. The barometer readings at Barcelona are published as given.

## SWEDISH SERIES.



Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.01 | 762.2 | 30.05 | 763.2 | 32.0 | 0.0 | ..... | Calm | ..... | ..... | 0 | ..... | 4 | ..... | ..... | 0.079 | 2.0 | ..... | |
| Umea | 30.08 | 763.9 | 30.13 | 765.2 | 40.6 | 4.8 | 81 | SW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0.035 | 0.9 | ..... | |
| Hernosand | 30.13 | 765.4 | 30.19 | 766 7 | 41.9 | 5.5 | 65 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 30.05 | 763.2 | 30.23 | 767.7 | 28.8 | — 1.8 | 84 | WSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.024 | 0.6 | ..... | |
| Wisby | 30.19 | 766.9 | 30.25 | 768.4 | 30.2 | — 1.0 | 76 | NNW | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0.138 | 3.5 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 30.17 | 766.3 | 30.24 | 768.2 | 28.6 | — 1.9 | 86 | SW | 5.8 | 2.6 | ..... | ..... | 10 | ..... | ..... | 0.036 | 0.92 | Snowing | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.83 | 732.2 | 30.32 | 770.2 | 31.8 | — 0.1 | 70 | NNE | ..... | ..... | 6 | ..... | 1 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| Zurich | 28.69 | 728.8 | 30.42 | 772.6 | 29.1 | — 1.6 | 60 | NE | ..... | ..... | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Bright | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +7.5 mm.; Thermometer, —7.9 cent.; Relative Humidity, +9 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.19 | 766.7 | 44.2 | 6.8 | 73 | N | 13 | 6.0 | ..... | ..... | 6 | ..... | N | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanides. |
| Varna | ..... | ..... | 30.04 | 763.0 | 53.2 | 11.8 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.12 | 3. | Covered | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | Imperial Observatory. |
| Beirut, (Syria,) Lee Obs'y | 29.88 | 758.9 | 30.00 | 762.0 | 72.0 | 22.2 | 61 | NW | ..... | ..... | 1* | ..... | 10c | ..... | ..... | 0 | 0 | Overcast | Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds: and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.76 | 755.9 | 30.08 | 764.0 | 34 | 1.1 | ..... | SW | 1 | 0.4 | ..... | 2c | 10s | W | W | 0 | 0 | Cloudy | W. R. Bigg. |
| *Chatham, N. B | 29.97 | 761.2 | 30.04 | 763.0 | 12 | —11.1 | 90 | SW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | G. A. Blair. |
| Charlottetown, P. E. Island | 29.93 | 760.2 | 29.97 | 761.2 | 22 | — 5.6 | 83 | N | 12 | 5.4 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.82 | 757.4 | 30.02 | 762.5 | 34.0 | 1.1 | 76 | N | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy, | James Smith, M. A. |
| Dalhousie, N. B | 30.03 | 762.7 | 30.06 | 763.5 | 9.0 | —12.8 | 98 | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | Bright | H. A. Johnson. |
| Esquimault, B. C | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | W. H. Revis. |
| *Father Point, Quebec | 30.04 | 763.0 | 30.06 | 763.5 | 20 | — 6 7 | 88 | SW | 10 | 4.5 | ..... | 2ks | 5s | SW | SW | 0 | 0 | Fair | J. McWilliams. |
| Fredericton, N. B | 30.05 | 763.3 | 30.12 | 765.0 | 20.2 | — 6.6 | 72 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. Harrison. |
| *Fort Garry Manitoba | 29.37 | 746.0 | 30.24 | 768.1 | 28 | — 2.2 | 95 | N | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.78 | 731.0 | 29.91 | 759.7 | 36 | 2.2 | 90 | SE | ..... | ..... | 1 | 1cs | 0 | W | ..... | 0 | 0 | Clear | James Grant. |
| *Halifax, N. S | 29.83 | 757.7 | 29.97 | 761.2 | 25 | — 3.9 | 91 | NW | 17 | 7.6 | ..... | ..... | 10ks | ..... | NW | Inap. | Inap. | Cloudy | F. Allison, M. A. |
| Hamilton, Ontario | 29.62 | 752.3 | 30.00 | 762.0 | 40.2 | 4.6 | 81 | SE | ..... | ..... | 2 | 10c | 0 | ..... | ..... | 0.80 | 20.3 | Cloudy | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.33 | 745.0 | 29.36 | 745.7 | 29 | — 1.7 | 88 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.01 | 0.3 | Overcast | E. Weedon. |
| *Kingston, Ontario | 29.71 | 754.6 | 30.00 | 763.5 | 35 | 1.7 | 83 | S | 4 | 1.8 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.74 | 755.4 | 29.78 | 756.4 | 34 | 1.1 | ..... | W | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | C. H. Rigby. |
| *Montreal, Quebec | 29.84 | 757.9 | 30.04 | 763.0 | 34 | 1.1 | 76 | S | 10 | 4.5 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.21 | 741.9 | 29.93 | 760.2 | 33 | 0.6 | 89 | SE | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Rev. R. Mosley. |
| Peterboro, Ontario | 29.25 | 742.9 | 30.03 | 762.7 | 33.7 | 0.9 | 98 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Dense fog | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.30 | 744.2 | 30.01 | 762.2 | 38 | 3.3 | 95 | S | 5 | 2.2 | ..... | 8k | 0 | SW | ..... | 0 | 0 | Fair | H. Morgan. |
| Port Hastings, N. S | 29.86 | 758.4 | 29.91 | 759.7 | 19.7 | — 6.8 | ..... | NW | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.30 | 744.2 | 29.95 | 760.7 | 39 | 3.9 | 81 | SE | 12 | 5.4 | ..... | 8k | 0 | S | ..... | 0 | 0 | Cloudy | M. Payne. |
| *Quebec, Quebec | 29.77 | 756.1 | 30.11 | 764.8 | 22 | — 5.6 | 66 | NE | ..... | ..... | 3 | 2k | Haze | ..... | ..... | 0 | 0 | Fair | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.51 | 749.5 | 29.99 | 761.7 | 29 | — 1.7 | 83 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | W. H. McIntyre. |
| St. Andrews, N. B | 30.03 | 762.7 | 30.08 | 764.0 | 25 | — 3.9 | 76 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Dr. Gove. |
| St. John, N. B | 29.91 | 759.7 | 30.09 | 764.3 | 22 | — 5.6 | 86 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.14 | 740.1 | 29.86 | 758.4 | 40 | 4.4 | 84 | SE | 5 | 2.2 | ..... | 5ks | 2s | ..... | ..... | 0 | 0 | Cloudy | K. Stewart. |
| Stayner, Ontario | 29.13 | 739.9 | 29.93 | 760.2 | 38 | 3.3 | 86 | SE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | R. J. Cole. |
| Stratford, Ontario | 28.62 | 726.9 | 29.94 | 760.5 | 36.0 | 2.2 | 89 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.76 | 755.9 | 29.79 | 756.7 | 27 | — 2.8 | 74 | NW | 9 | 4.0 | ..... | ..... | 10s | ..... | NW | 0.02 | 0.5 | Cloudy | T. C. Hill. |
| *Toronto, Ontario | 29.62 | 752.3 | 30.02 | 762.5 | 36 | 2.2 | 86 | S | 4 | 1.8 | ..... | 5ck | 2s | SW | Calm. | 0 | 0 | Fair | Magnetic Observatory. |
| Windsor, N. S | 29.92 | 760.0 | 30.02 | 762.5 | 24.5 | — 4.2 | 94 | N | 16 | 7.2 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Fair | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 30.0 | — 1.1 | ..... | SW | ..... | ..... | ..... | ..... | 10n | ..... | ..... | Inap | Inap. | Overcast | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.89 | 759.2 | 30.12 | 765.0 | 33 | 0.6 | 84 | Calm | 0 | 0 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Alpena, Michigan | 29.10 | 739.1 | 29.74 | 755.4 | 42 | 5.6 | 83 | S | 16 | 7.2 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Atlantic City, New Jersey | 30.10 | 764.5 | 30.12 | 765.0 | 39 | 3.9 | 82 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Augusta, Georgia | 29.96 | 761.0 | 30.15 | 765.8 | 49 | 9.4 | 57 | E | 2 | 0.9 | ..... | 8c | Sm'e | SW | Calm | 0 | 0 | Smoky | |
| Baltimore, Maryland | 30.09 | 764.3 | 30.14 | 765.5 | 44 | 6.7 | 60 | N | 2 | 0.9 | ..... | Haze | Sm'e | Calm | Calm | 0 | 0 | Fair | |
| Barnegat, New Jersey | 30.08 | 764.0 | 30.10 | 764.5 | 42 | 5.6 | 74 | NE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Bismarck, Dakota | 28.43 | 722.1 | 30.28 | 769.1 | 29 | — 1.7 | 78 | NW | 7 | 3.1 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Boise City, Idaho | 27.22 | 691.4 | 30.10 | 764.5 | 43 | 6.1 | 83 | NE | 1 | 0.4 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Boston, Massachusetts | 29.98 | 761.5 | 30.14 | 765.5 | 38 | 3.3 | 72 | NE | 5 | 2.2 | ..... | 5k | Haze | E | ..... | 0 | 0 | Fair | |
| Brackettville, Texas | 28.96 | 735.6 | 30.00 | 762.0 | 54 | 12.2 | 93 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Breckenridge, Minnesota | 29.12 | 739.6 | 30.16 | 766.1 | 34 | 1.1 | 79 | N | 24 | 10.7 | ..... | ..... | 10ks | ..... | N | 0.04 | 1.0 | Cloudy | |
| Brownsville, Texas | 29.99 | 761.7 | 30.06 | 763.5 | 64 | 17.8 | 88 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 1.74 | 44.2 | Cloudy | |
| Buffalo, New York | 29.29 | 744.0 | 30.06 | 762.0 | 40 | 4.4 | 82 | S | 6 | 2.7 | ..... | 2k | 0 | SW | ..... | 0 | 0 | Fair | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 50 | 10.0 | 64 | S | ..... | ..... | ..... | 8c | c | Calm | ..... | 0 | 0 | Fair | |
| Burlington, Vermont | 29.83 | 757.7 | 30.10 | 764.5 | 34 | 1.1 | 61 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Cairo, Illinois | 29.68 | 753.9 | 30.07 | 763.8 | 54 | 12.2 | 61 | S | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Grant, Arizona | 25.28 | 642.1 | 30.08 | 764.0 | 59 | 15.0 | 13 | NE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | 26.86 | 682.2 | 30.35 | 770.9 | 44 | 6.7 | 52 | NW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.42 | 696.5 | 29.99 | 761.7 | 40 | 4.4 | 91 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.16 | 766.1 | 30.17 | 766.3 | 47 | 8.3 | 85 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Henry, Virginia | 30.10 | 764.5 | 30.12 | 765.0 | 48 | 8.9 | 78 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 30.15 | 765.8 | 30.17 | 766.3 | 51 | 10.6 | 72 | NE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape May, New Jersey | 30.10 | 764.5 | 30.13 | 765.3 | 42 | 5.6 | 66 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 30.11 | 764.8 | 30.18 | 766.6 | 54 | 12.2 | 80 | NE | 4 | 1.8 | ..... | 8cs | Haze | SW | Calm | 0 | 0 | Fair | |
| Cheyenne, Wyoming | 24.23 | 615.4 | 30.17 | 766.3 | 32 | 0.0 | 79 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.11 | 739.4 | 29.80 | 756.9 | 43 | 6.1 | 75 | W | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0.30 | 7.6 | Clear | |
| Cincinnati Ohio | 29.29 | 744.0 | 29.93 | 760.2 | 48 | 8.9 | 66 | SE | 9 | 4.0 | ..... | 5k | 0 | W | ..... | Inap. | Inap. | Fair | |
| Clevelana, Ohio | 29.23 | 742.4 | 29.96 | 761.0 | 42 | 5.6 | 74 | SE | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Threatening | |
| Concho, Texas | 28.21 | 716.5 | 29.91 | 759.7 | 50 | 10.0 | 37 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.64 | 752.8 | 30.11 | 764.8 | 56 | 13.3 | 75 | Calm | 0 | 0 | ..... | 2cs | Haze | Calm | Calm | 0 | 0 | Fair | |
| Davenport, Iowa | 29.34 | 745.2 | 29.99 | 761.7 | 42 | 5.6 | 74 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Deadwood, Dakota | 25.59 | 650.0 | ..... | ..... | 23 | — 5.0 | 73 | S | 2 | 0.9 | ..... | 5c | 0 | N | ..... | 0 | 0 | Fair | |
| Denison, Texas | 29.54 | 745.2 | 30.14 | 765.5 | 54 | 12.2 | 74 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Denver, Colorado | 24.97 | 634.2 | 30.19 | 766.8 | 34 | 1.1 | 61 | S | 8 | 3.6 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Detroit, Michigan | 29.16 | 740.7 | 29.82 | 757.4 | 44 | 6.7 | 76 | SW | 15 | 6.7 | ..... | ..... | 10s | ..... | SW | 0.15 | 3.8 | Cloudy | |
| Dodge City, Kansas | 27.60 | 701.0 | 29.97 | 761.2 | 39 | 3.9 | 73 | N | 12 | 5.4 | ..... | 2c | Haze | N | ..... | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.21 | 741.9 | 29.91 | 759.7 | 42 | 5.6 | 74 | NW | 12 | 5.4 | ..... | ..... | 10ks | ..... | N | 0.01 | 0.3 | Cloudy | |
| Duluth, Minnesota | 29.14 | 740.1 | 29.82 | 757.4 | 38 | 3.3 | 81 | NW | 24 | 10.7 | ..... | 0 | 5s | ..... | NW | 0.03 | 0.8 | Fair | |
| Eagle Pass, Texas | 29.29 | 744.0 | 30.03 | 762.7 | 55 | 12.8 | 100 | Calm | 0 | 0 | ..... | 0 | Fog | ..... | Calm | 0.08 | 2.0 | Foggy | |
| Eastport, Maine | 30.01 | 762.2 | 30.08 | 764.0 | 26 | — 3.3 | 69 | NW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.24 | 742.7 | 29.96 | 761.0 | 45 | 7.2 | 76 | S | 10 | 4.5 | ..... | 8ck | 2s | S | ..... | 0 | 0 | Cloudy | |
| Escanaba, Michigan | 28.99 | 736.3 | 29.64 | 752.8 | 41 | 5.0 | 91 | SW | 6 | 2.7 | ..... | ..... | 10s | ..... | SW | 0.21 | 5.3 | Cloudy | |
| Florence, Arizona | 28.38 | 720.8 | 29.98 | 761.5 | 51 | 10.6 | 52 | W | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | 24.23 | 615.4 | 30.23 | 767.8 | 45 | 7.2 | 17 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.66 | 651.8 | ..... | ..... | 36 | 2.2 | 46 | Calm | 0 | 0 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| Fort Gibson, Indian Ter | 29.57 | 751.1 | 30.12 | 765.0 | 46 | 7.8 | 84 | N | 1 | 0.4 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Smoky | |
| Fort Griffin, Texas | 28.85 | 732.8 | 30.11 | 764.8 | 50 | 10.0 | 65 | NW | 2 | 0.9 | ..... | 8cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Fort St. Michael, Alaska | 29.62 | 752.3 | 29.66 | 753.4 | —21 | —29.4 | 100 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Sill, Indian Territory | 28.91 | 734.3 | 30.04 | 763.0 | 48 | 8.9 | 70 | NW | 6 | 2.7 | ..... | 2cs | Haze | Calm | Calm | 0 | 0 | Fair | |
| Galveston, Texas | 30.01 | 762.2 | 30.05 | 763.3 | 67 | 19.4 | 90 | NE | 4 | 1.8 | ..... | 5cs | 5ks | S | E | 0 | 0 | Cloudy | |
| Grand Haven, Michigan | 29.08 | 738.6 | 29.72 | 754.9 | 45 | 7.2 | 84 | W | 17 | 7.6 | ..... | ..... | 10s | ..... | W | 0.36 | 9.1 | Cloudy | |
| Indianapolis, Indiana | 29.11 | 739.4 | 29.89 | 759.2 | 46 | 7.8 | 69 | SE | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianola, Texas | 30.05 | 763.3 | 30.08 | 764.0 | 66 | 18.9 | 95 | N | 18 | 8.0 | ..... | ..... | 10s | ..... | N | 0.39 | 9.9 | Cloudy | |
| Jacksboro, Texas | 29.00 | 736.6 | 30.14 | 765.5 | 53 | 11.7 | 61 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.09 | 764.3 | 30.11 | 764.8 | 58 | 14.4 | 88 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Keokuk, Iowa | 29.39 | 746.5 | 30.02 | 762.5 | 44 | 6.7 | 68 | NW | 10 | 4.5 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Key West, Florida | 30.00 | 762.0 | 30.03 | 762.7 | 73 | 22.8 | 76 | E | 14 | 6.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Kittyhawk, North Carolina | 30.15 | 765.8 | 30.17 | 766.3 | 47 | 8.3 | 85 | N | 3 | 1.3 | ..... | 1k | 0 | N | ..... | 0 | 0 | Clear | |
| Knoxville, Tennessee | 29.12 | 739.6 | 30.16 | 766.1 | 38 | 3.3 | 91 | Calm | 0 | 0 | ..... | 1ck | 0 | W | ..... | 0 | 0 | Clear | |
| La Crosse, Wisconsin | 29.17 | 740.9 | 29.91 | 759.7 | 43 | 6.1 | 75 | NW | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| La Mesilla, New Mexico | 26.18 | 665.0 | 30.33 | 770.4 | 37 | 2.8 | 71 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.27 | 753.6 | 30.02 | 762.5 | 60 | 15.6 | 88 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.54 | 13.7 | Cloudy | |
| Leavenworth, Kansas | 29.39 | 744.2 | 30.17 | 766.3 | 43 | 6.1 | 67 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.63 | 752.6 | 29.97 | 761.2 | 50 | 10.0 | 86 | Calm | 0 | 0 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.40 | 746.7 | 29.96 | 761.0 | 47 | 8.3 | 55 | SW | 12 | 5.4 | ..... | 0 | Sm'e | ..... | SW | 0 | 0 | Smoky | |
| Lynchburg, Virginia | 29.44 | 747.8 | 30.15 | 765.8 | 41 | 5.0 | 56 | NE | 2 | 0.9 | ..... | 0 | 8ke | ..... | Calm | 0 | 0 | Cloudy | |
| Marquette, Michigan | 28.90 | 734.0 | 29.69 | 754.1 | 43 | 6.1 | 83 | W | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.02 | 0.5 | Light rain | |
| Mason, Texas | 27.98 | 710.7 | 29.69 | 754.1 | 53 | 11.7 | 93 | Calm | 0 | 0 | ..... | 2cs | 2s | Calm | Calm | 0 | 0 | Fair | |
| Memphis, Tennessee | 29.81 | 757.2 | 30.13 | 765.3 | 51 | 10.6 | 71 | SE | 4 | 1.8 | ..... | 2c | Sm'e | SW | Calm | 0 | 0 | Smoky | |
| Milwaukee, Wisconsin | 29.07 | 738.4 | 29.75 | 755.6 | 44 | 6.7 | 76 | NW | 15 | 6.7 | ..... | 0 | 5ks | ..... | NW | 0.15 | 3.8 | Fair | |
| Mobile, Alabama | 30.08 | 764.0 | 30.12 | 765.0 | 58.5 | 14.7 | 73 | N. | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Montgomery, Alabama | 29.92 | 760.0 | 30.16 | 766.1 | 53 | 11.7 | 76 | Calm | 0 | 0 | ..... | 10c | Haze | W | Calm | 0 | 0 | Cloudy | |
| Morgantown, West Virginia | 29.00 | 736.6 | 30.09 | 764.3 | 38 | 3.3 | 78 | Calm | 0 | 0 | ..... | 5c | Fog | W | ..... | 0 | 0 | Fair | |
| Mt. Washington, N. H. | 23.62 | 599.9 | 29.98 | 761.5 | 13 | —10.6 | 62 | NW | 36 | 16.1 | ..... | 5s | 0 | NW | ..... | 0 | 0 | Fair | |
| Nashville, Tennessee | 29.54 | 750.3 | 30.08 | 764.0 | 45 | 7.2 | 84 | N | 1 | 0.4 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| New Haven, Connecticut | 30.02 | 762.5 | 30.14 | 765.5 | 37 | 2.8 | 63 | NE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New London, Connecticut | 30.08 | 764.0 | 30.13 | 765.3 | 38 | 3.3 | 63 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New Orleans, Louisiana | 30.02 | 762.5 | 30.08 | 764.0 | 64 | 17.8 | 73 | NE | 10 | 4.5 | ..... | 8k | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Newport, Rhode Island | 30.06 | 763.5 | 30.11 | 764.8 | 36 | 2.2 | 71 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New York, New York | 29.95 | 760.7 | 30.13 | 765.3 | 41 | 5.0 | 66 | NE | 6 | 2.7 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Norfolk, Virginia | 30.11 | 764.8 | 30.17 | 766.3 | 46 | 7.8 | 77 | SW | 4 | 1.8 | ..... | Haze | Haze | ..... | ..... | 0 | 0 | Hazy | |
| North Platte, Nebraska | 27.36 | 694.9 | 30.05 | 763.3 | 35 | 1.7 | 75 | NW | 8 | 3.6 | ..... | 10ck | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Olympia, Washington Ter. | 29.98 | 761.5 | 30.02 | 762.5 | 41 | 5.0 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0.53 | 13.5 | Dense fog | |
| Omaha, Nebraska | 29.07 | 738.4 | 30.20 | 767.1 | 36 | 2.2 | 80 | NW | 13 | 5.8 | ..... | 2c | 2s | Calm | Calm | 0 | 0 | Fair | |
| Oswego, New York | 29.75 | 755.6 | 30.05 | 764.0 | 39 | 3.9 | 64 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pembina, Dakota | 29.36 | 745.7 | 30.22 | 767.6 | 30 | — 1.1 | 83 | NW | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Clear | |
| Philadelphia, Pennsylvania | 30.09 | 764.3 | 30.15 | 765.8 | 39 | 3.9 | 47 | N | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Phœnix, Arizona | 28.83 | 732.3 | 30.66 | 778.7 | 50 | 10.0 | 52 | S | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.88 | 454.1 | 30.09 | 764.3 | 16 | — 8.9 | 66 | NW | 12 | 5.4 | ..... | 8c | 0 | NW | ..... | 0 | 0 | Fair | |
| Pioche, Nevada | 24.13 | 612.9 | 29.90 | 759.4 | 40 | 4.4 | 56 | S | 2 | 0.9 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.23 | 742.4 | 30.06 | 763.5 | 38 | 3.3 | 81 | SE | 1 | 0.4 | ..... | 5c | Fog | W | Calm | 0 | 0 | Fair | |
| Port Huron, Michigan | 29.05 | 737.9 | 29.72 | 754.9 | 33 | 0.6 | 100 | SW | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.01 | 0.3 | Light rain | |
| Portland, Maine | 30.07 | 763.8 | 30.12 | 765.0 | 37 | 2.8 | 63 | Calm | 0 | 0 | ..... | 5k | Haze | NW | ..... | 0 | 0 | Fair | |
| Portland, Oregon | 30.01 | 762.2 | 30.12 | 765.0 | 46 | 7.8 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0.18 | 4.6 | Foggy | |
| Prescott, Arizona | 24.86 | 631.4 | 30.22 | 767.6 | 34 | 1.1 | 61 | Calm | ..... | ..... | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Punta Rassa, Florida | 30.08 | 764.0 | 30.10 | 764.5 | 72 | 22.2 | 71 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Red Bluff, California | 29.70 | 754.4 | 30.06 | 763.5 | 56 | 13.3 | 93 | SW | 4 | 1.8 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Rochester, New York | 29.39 | 746.5 | 30.02 | 762.5 | 39 | 3.9 | 73 | SW | 5 | 2.2 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roseburg, Oregon | 29.50 | 749.3 | 30.08 | 764.0 | 40 | 9.4 | 100 | Calm | 0 | 0 | ..... | 8k | 2s | SW | Calm | 0.35 | 8.9 | Cloudy | |
| Sacramento, California | 29.90 | 761.0 | 30.05 | 763.3 | 57 | 13.9 | 87 | S | 1 | 0.4 | ..... | 0 | 2ks | ..... | SW | 0 | 0 | Fair | |
| St. Louis, Missouri | 29.46 | 748.3 | 30.03 | 762.7 | 52 | 11.1 | 54 | W | 15 | 6.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Marks, Florida | 30.08 | 764.0 | 30.10 | 764.5 | 58 | 14.4 | 63 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| St. Paul, Minnesota | 29.97 | 738.4 | 29.91 | 759.7 | 38 | 3.3 | 71 | W | 21 | 9.4 | ..... | 8k | 0 | NW | ..... | Inap. | Inap. | Cloudy | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.76 | 654.3 | 30.09 | 764.3 | 44 | 6.7 | 68 | W | 2 | 0.9 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| San Antonio, Texas | 29.42 | 747.3 | 30.00 | 762.0 | 61 | 16.1 | 100 | Calm | 0 | 0 | ..... | 2ck | 5ks | Calm | NW | 0.15 | 3.8 | Cloudy | |
| San Diego, California | 29.94 | 760.5 | 30.01 | 762.2 | 52 | 11.1 | 100 | N | 2 | 0.9 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Sandusky, Ohio | 29.28 | 742.4 | 29.91 | 759.7 | 45 | 7.2 | 84 | S | 18 | 8.0 | ..... | ..... | 10ks | ..... | W | Inap. | Inap. | Cloudy | |
| Sandy Hook, New Jersey | 30.11 | 764.8 | 30.13 | 765.3 | 40 | 4.4 | 73 | NE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Francisco, California | 30.01 | 762.2 | 30.08 | 764.0 | 57 | 13.9 | 87 | SE | 1 | 0.4 | ..... | 0 | 8s | ..... | Calm | 0 | 0 | Fair | |
| Santa Fé, New Mexico | 23.45 | 595.6 | 29.99 | 761.7 | 40 | 4.4 | 31 | E | 4 | 1.8 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 30.06 | 763.5 | 30.15 | 765.8 | 52 | 11.1 | 93 | E | 3 | 1.3 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Shreveport, Louisiana | 29.90 | 759.4 | 30.13 | 765.3 | 57 | 13.9 | 69 | Calm | 0 | 0 | ..... | 5cs | 0 | S | ..... | 0 | 0 | Fair | |
| Smithville, North Carolina | 30.14 | 765.5 | 30.18 | 766.6 | 49 | 9.4 | 100 | N | 3 | 1.3 | ..... | 2cs | Fog | W | Calm | 0 | 0 | Fair | |
| Springfield, Massachusetts | 29.94 | 760.5 | 30.08 | 764.0 | 38 | 3.3 | 54 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Stockton, Texas | 27.12 | 688.8 | 30.12 | 765.0 | 50 | 10.0 | 82 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 30.08 | 764.0 | 30.13 | 765.3 | 37 | 2.8 | 81 | E | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Toledo, Ohio, | 29.17 | 740.9 | 29.84 | 757.9 | 48 | 8.9 | 70 | S | 12 | 5.4 | ..... | ..... | 10s | ..... | S | 0.02 | 0.5 | Cloudy | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 46 | 7.8 | 48 | S | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tybee Island, Georgia | 30.11 | 764.8 | 30.14 | 765.5 | 59 | 15.0 | 87 | NE | 6 | 2.7 | ..... | 5ck | Haze | W | Calm | 0 | 0 | Fair | |
| Umatilla, Oregon | 29.76 | 755.9 | ..... | ..... | 51 | 10.6 | 93 | W | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.04 | 1.0 | Light rain | |
| Vicksburg, Mississippi | 29.90 | 759.4 | 30.16 | 766.1 | 58 | 14.4 | 82 | Calm | 0 | 0 | ..... | 10c | Haze | Calm | Calm | 0 | 0 | Cloudy | |
| Virginia City, Montana | 24.38 | 619.2 | 29.86 | 758.4 | 40 | 4.4 | 56 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Visalia, California | 29.70 | 754.4 | 30.07 | 763.8 | 54 | 12.2 | 93 | Calm | 0 | 0 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Washington, D. C. | 30.05 | 763.3 | 30.17 | 766.3 | 39.5 | 4.2 | 87 | NW | 1 | 0.4 | ..... | 1c | 1s; sm | W | NW | 0 | 0 | Smoky | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 44 | 6.7 | 52 | NW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.08 | 764.0 | 30.17 | 766.3 | 47 | 8.3 | 92 | Calm | 0 | 0 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Dense fog | |
| Winnemucca, Nevada | 25.70 | 652.8 | 30.06 | 763.5 | 38 | 3.3 | 72 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Wood's Holl, Mass | 30.04 | 763.0 | 30.09 | 764.3 | 43 | 6.1 | 75 | NE | 5 | 2.2 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear | |
| Yankton, Dakota | 28.95 | 735.3 | 30.30 | 769.6 | 34 | 1.1 | 79 | NW | 13 | 5.8 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Yuma, Arizona | 29.77 | 756.1 | 29.93 | 760.2 | 60 | 15.6 | 44 | NE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 29.78 | 756.4 | 29.84 | 757.9 | 5.0 | —15.0 | 100 | NW | 14 | 6.3 | ..... | 8k | 6s | N | ..... | 0.01 | 0.3 | Snowing | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 29.99 | 761.7 | 30.01 | 762.2 | 76 | 24.4 | 76 | SE | 1.2 | 0.5 | ..... | c | 4n | NW | ..... | ..... | ..... | Light rain | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.07 | 763.8 | 30.08 | 764.0 | 79 | 26.1 | 90 | Calm | 0 | 0 | ..... | 2c | 2s | SE | ..... | 0 | 0 | ..... | James Gall. |
| Nassau, W. I. | 29.80 | 759.2 | 29.97 | 761.2 | 80 | 26.7 | ..... | NE | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | ..... | ..... | 30.01 | 762.2 | 80 | 26.7 | 87 | NE | ..... | ..... | 3 | ..... | 8ks | ..... | ..... | 0 | 0 | Cloudy | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | 30.07 | 763.8 | 30.08 | 764.0 | 80.6 | 27 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.689 | 17.50 | Raining | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.21 | 640.3 | ..... | ..... | 69.5 | 20.8 | 76 | Calm | ..... | ..... | 0 | 7ck; cs | 0 | ..... | ..... | 0 | 0 | ..... | Thomas Herran |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Mukuwao, Medillin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,888 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,566 (?) ft., or 1,086.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.6 m.; Concho, 1, 770 ft., or 693.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.5 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,110.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,870 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,550 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude; Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Plo che, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5. 48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er —10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NavyYard,Mare Island,Cal. | 30.02 | 762.5 | 55 | 12.8 | 54 | 12.2 | 100 | N | 1 | 0.4 | .... | ..... | 5s | ..... | Calm | 0 | 0 | ..... | ..... | Clearing..... | |
| Navy Yard, Pensacola, Fla. | 30.21 | 767.3 | 68 | 18.9 | 66 | 18.9 | 89 | NE | 3 | 1.3 | .... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| NavyYard,Portsmouth,N.H | 30.18 | 766.6 | 72 | 22.2 | 33 | 0.6 | 80 | NW | 3 | 1.3 | ..... | ..... | 2 | .... .. | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan | 30.01* | 762.2* | 53.5 | 11.9 | 47.8 | 8.8 | 59 | SW | ..... | ..... | 4 | ..... | 8ks | ..... | W | 0 | 0 | ..... | ..... | Threatening | |
| Adams. Panama | 29.90 | 759.4 | 83 | 28.3 | 83 | 28.3 | 63 | NW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Alliance, Piraeus, Greece | 30.10‡ | 764.5‡ | ..... | ..... | 57 | 13.9 | 94 | SSW | ..... | ..... | 1–2 | ..... | 5 | ..... | S | ..... | ..... | ..... | ..... | Pleasant..... | |
| Ashuelot. Shanghai, China | 30.39* | 771.9* | 54 | 12.2 | 46 | 7.8 | 84 | ENE | ..... | ..... | 2 | ..... | 5 | ..... | WNW | ..... | ..... | ..... | ..... | D. clouds..... | |
| Canonicus, New Orleans, La | 30.06 | 763.5 | 47 | 8.3 | 62 | 16.7 | 88 | ENE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Colorado, New York, N. Y | 30.00‡ | 762.0‡ | ..... | ..... | 40 | 4.4 | 64 | NNE | 4 | 1.8 | ..... | ..... | 2 | ..... | NNE | 0 | 0 | ..... | ..... | Hazy..... | |
| Constitution, N. 15° 30′ W. 30° 18′ | 30.26‡ | 768.6‡ | ..... | ..... | 55 | 12.8 | 93 | SSE | ..... | ..... | 4 | ..... | 5 | ..... | SSE | ..... | ..... | Smooth | SSE | Fair | |
| Despatch, N. 42° 00′ E. 29° 00′ | 30.40 | 772.1 | 85 | 29.4 | 40 | 4.4 | 64 | NNE | ..... | ..... | 3 | ..... | 5 | ..... | NE | ..... | ..... | ..... | ..... | Fair | |
| Enterprise, New Orleans, La | 30.08‡ | 764.0‡ | ..... | ..... | 65 | 18.3 | 84 | E | ..... | ..... | 2 | ..... | 10 | ..... | E | ..... | ..... | ..... | ..... | Hazy..... | |
| Franklin, Norfolk, Va | 30.18‡ | 766.6‡ | ..... | ..... | 45 | 7.2 | 84 | W | 0.5 | 0.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | Blue sky..... | |
| Gettysburg Valetta, Malta | 29.97‡ | 761.2‡ | ..... | ..... | 63 | 17.2 | ?? | S | ..... | ..... | 1 | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Cloudy..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.20 | 767.1 | 73 | 22.8 | 72 | 22.2 | 58 | NE | ..... | ..... | 3 | .... .... | 2 | ..... | NE | ..... | ..... | ..... | ..... | Clear ..... | |
| Marion, Smyrna, Turkey | 30.06 | 763.5 | 57 | 13.9 | 57 | 13.9 | 63 | W | ..... | ..... | 3 | .. ..... | 0 | ..... | ..... | Light | Light | Smooth | ..... | Clear..... | |
| Michigan, Erie, Pa | 29.45 | 748.0 | 62 | 16.7 | 44 | 6.7 | 68 | SSW | ..... | ..... | 2 | ..... | 5 | ..... | SW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monongahela, Hong-Kong, China | 30.18* | 766.6* | 65 | 18.3 | 67 | 19.4 | 79 | Calm | ..... | ..... | 0 | ..... | 6 | ..... | ..... | ..... | ..... | Smooth | ..... | D. clouds..... | |
| New Hampshire, Port Royal, S. C | 30.33 | 770.4 | 60 | 15.6 | 57 | 13.9 | 94 | NE | 7 | 3.1 | ..... | ..... | 2 | ..... | W | 0 | 0 | ..... | ..... | Clear..... | |
| Omaha, N. 1° 35′, W. 32° 37′ | 30.10* | 764.5* | 84 | 28.9 | 83 | 28.3 | 81 | SSE | 2 | 0.9 | ..... | ..... | 9 | ..... | SE | 1.4 | 36. | Slight | SE | Cloudy..... | |
| Onward, Callao, Peru | 29.96† | 761.0† | ..... | ..... | 75 | 23.9 | 86 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | .... ... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, Vera Cruz, Mexico | 30.03‡ | 762.7‡ | ..... | ..... | 72 | 22.2 | 95 | NNW | ..... | ..... | 4 | ..... | 8 | ..... | NNW | ..... | ..... | ..... | ..... | Threatening | |
| Palos, Shanghai, China | 30.42* | 772.7* | 63 | 17.2 | 46 | 7.8 | 84 | NE | ..... | ..... | 2 | ..... | 7 | ..... | W | ..... | ..... | ..... | ..... | Cloudy..... | |
| Pensacola, Honolulu, H. I | 30.19 | 766.8 | 71 | 21.7 | 69 | 20.6 | 80 | NE | 3 | 1.3 | .... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Plymouth. Norfolk, Va | 30.15‡ | 765.8‡ | ..... | ..... | 44 | 6.7 | 84 | SW | ..... | .... | 0–1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Powhatan, Havana, Cuba, W. I | 30.06‡ | 763.5‡ | ..... | ..... | 74 | 23.3 | 95 | ENE | 6 | 2.7 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Smooth | ..... | Raining..... | |
| Ranger. Amoy, China | 30.27* | 768.8* | ..... | ..... | 61 | 16.1 | 80 | NE | ..... | ..... | 2–4 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Overcast..... | |
| Rio Bravo, Brownsville, Texas | ..... | ..... | ..... | ..... | 64 | 17.8 | 100 | NW | ..... | ..... | 2 | ..... | 9 | ..... | NW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Santee, Annapolis, Md | 30.28* | 769.1* | 62 | 16.7 | 43 | 6.1 | 67 | NW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | ..... | Hazy..... | |
| Saratoga, Washington, D. C | 30.09* | 764.3* | .. .... | ..... | 45 | 7.2 | 100 | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | Clear. ..... | |
| St. Louis, League Island, Pa | 30.05 | 763.3 | 58 | 11.7 | 41 | 5.0 | ?? | NW | 3 | 1.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Supply, N. 50° 03′ W. 13° 10″ | 30.70 | 779.8 | 55 | 12.8 | 52 | 11.1 | 66 | SSE | ..... | ..... | 3 | ..... | 2 | ..... | S | ..... | ..... | Mod'ate | S | Clear..... | |
| Swatara, Savanilla, New Grenada | 29.91* | 759.7* | ..... | ..... | 81 | 27.2 | 87 | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... ... | |
| Tennessee, N. 5° 25′ 6″, E. 100° 19′ 45″ | 29.96* | 761.0* | 90 | 32.2 | 86 | 30 0 | 72 | S | 2 | 0.9 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | Smooth | ..... | D. clouds..... | |
| Tuscarora, N. 23° 40,′ W. 111° 00′ | 30.02 | 762 5 | 69 | 20.6 | 65 | 18.3 | ?? | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |
| Vandalia, N. 36° 45′, E. 20° 30′ | 30.02‡ | 762.5‡ | ..... | ..... | 54 | 12.2 | 67 | NNW | ..... | ..... | 2 | ..... | 2 | ..... | S | ..... | ..... | Mod'ate | NW | Clearing..... | |
| Wabash, Boston, Mass | 30.11‡ | 764.8‡ | ..... | ..... | 36 | 2.2 | 80 | N | 6 | 2.7 | ..... | ..... | 5 | ..... | N | 0 | 0 | ..... | ..... | Fair ..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level: corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | |
| S. S. City of Tokio, Hong-Kong, China | | | | | 63 | 17.2 | ..... | ENE | ..... | ..... | 5 | ..... | 7 | ..... | NNE | Smooth | NE | D. clouds | Capt. Maury. |
| S. S. Colima, N. 18° 41′, W. 94° 58′ | | | 29.88† | 758.9† | 82 | 27.8 | 83 | NNE | ..... | ..... | 4 | ..... | 7 | ..... | SW | Easy Mod'ate | NNE | Misty | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. †Aneroid.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WHITE STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York. | | | | | | | | | | | | | | | | | | | |
| S. S. Aurnatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, N. 40° 44′, W. 66° 18′ | | | 30.10† | 764.5† | 59 | 8.9 | ?? | W | ..... | ..... | 2 | ..... | 5cs | ..... | N | Smooth | ..... | Fair | Capt. W. H. Thompson |
| S. S. Celtic, N. 49° 15,′ W. 31° 30′ | | | 30.21† | 767.3† | 53 | 11.7 | 93 | SSW | ..... | ..... | 6 | ..... | 10 | SW | ..... | Mod'ate | W | Misty | Capt. B. Gleadell. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Aneroid.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary. | | | | | | | | | | | | | | | | | | | |
| S. S. Belgic | | | | | | | | | | | | | | | | | | | Capt. John Metcalf. |
| S. S. Gaelic, N. 38° 40′, E. 144° 10′ | | | 29.92† | 760.0† | 60 | 15.6 | ?? | WSW | ..... | ..... | 5 | ..... | n | ..... | SW | Smooth | W | Raining | Capt. W. H. Kidley |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of A. Schumacher & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | Character | Direction From— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois, N. 50° 33′, W. 16° 22′ | | | 30 62* | 777.7* | 54 | 12.2 | 100 | SE | | | 4 | | 10 | | SE | Mod'ate | ESE | D. clouds | Captain Shackelford. |
| S. S. Indiana, N. 40° 07′ 05″, W. 63° 45′ 30″ | | | 30.39† | 771.9† | 43 | 6.1 | 100 | NNE | | | 2 | | 6? | | NE | Light | ENE | Clear? | Captain Sargent. |
| S. S. Ohio, N. 50° 33′, W. 24° 31′ | | | 30.20 | 767.1 | 62 | 16.7 | 88 | SSE | | | 2 | | 2 | | Calm | Mod'ate | Confused | Fine | Captain Morrison. |
| S. S. Pennsylvania, N. 42° 23′, W. 63° 17′ | | | 29.98 | 761.5 | 29 | —1.7 | 89 | NW | | | 4 | | 10 | | NW | Light | W | Cloudy | Captain Harris. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid †Aneroid; unreliable, corrected for elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland, N. 46° 05′, W. 32° 37′ | | | 30.22* | 767.6* | | | | SSE | 6 | 2.7 | | | 3 | | S | Mod'ate | SW | D. clouds | Capt. Jackson. Capt. Nichols. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | |

*Aneroid; regulated to standard at Antwerp.

**ALLAN LINE MARINE SERIES.**

Furnished by the coöperation of A. Schumacher, & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Scandinavian | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES.** (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Off Stingray Point, Va. | | | 30.09 | 764.3 | 50 | 10.0 | 72 | WNW | 8 | 3.6 | | | Haze | | | | | Hazy | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.63 | 752.6 | — 8 | —22.2 | 91* | Calm | 0 | 0 | | | 10s | | Calm | | | Light snow. | O. T. Sherman. |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Determined by use of hair hygrometer.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg$^{d}$.) Chief Signal Officer. U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 17, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:40 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

## ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | | | 30.05 | 763.2 | 61.9 | 16.6 | | N | | | 2 | | 4 | | | | | Cloudy | Dr. Ollive. |
| Nemours | | | 29.98 | 761.6 | 50.5 | 10.3 | 72 | ESE | | | 5 | | 9 | | | 0.75 | 19. | Covered | Michel. |
| Algiers | | | 30.05 | 763.2 | 52.2 | 11.2 | 77 | NE | | | 8 | | 10 | | | 0.154 | 3.9 | Covered | Towilliere. |
| La Calle | | | 30.07 | 763.6 | 52.7 | 11.5 | 73 | E | | | 6 | | 8 | | | 0 | 0 | Very cloudy | Boulangeot. |
| Tunis | | | 30.00 | 762.0 | 55.4 | 13.0 | 57 | N | | | 5 | | 10 | | | 0.024 | 0.6 | Covered | Jacques. |
| Sfax | | | 30.00 | 762.0 | 73.4 | 23.0 | | NNE | | | 8 | | 6 | | | 0 | 0 | Cloudy | Gau. |
| Tebessa | | | 29.95 | 760.8 | 40.5 | 4.7 | 84 | NNE | | | 6 | | 4 | | | 0.291 | 7.4 | Cloudy | Herbin. |
| Geriville | | | 30.02 | 762.5 | | | | E | | | 1 | | 9 | | | 0 | 0 | Covered | Bourgeois. |
| Laghouat | | | 29.95 | 760.7 | 54.0 | 12.2 | 83 | SSE | | | 8 | | 4 | | | 0.31 | 8. | Cloudy | Lemaillot. |
| Biskra | | | 30.02 | 762.4 | 50.0 | 10.0 | 86 | E | | | 8 | | 7 | | | 0.04 | 1. | Very cloudy | Guyot. |
| | | | 30.00 | 762.0 | 68.0 | 20.0 | 85 | SW | | | 5 | | 5 | | | 0 | 0 | Cloudy. | Chanvaux. |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 899? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

## AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.70 | 754.4 | 30.28 | 769.2 | 35.1 | 1.7 | 59 | NE | | | 5 | | 6 | | | Inap. | Inap. | | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.50 | 749.3 | 30.32 | 770.2 | 24.1 | — 4.4 | 100 | W | | | 1 | | 10 | | | 0.016 | 0.4 | | Dr. Wierzbiski. |
| Eperies | 29.31 | 744.5 | 30.24 | 768.2 | 30.6 | — 0.6 | 54 | Calm | | | 0 | | 1cs | | | 0 | 0 | | Julius Mikolik. |
| Gratz | 28.94 | 735.1 | 30.26 | 768.5 | 34.5 | 1.4 | 45 | NW | | | 4 | | 7 | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28.69 | 728.8 | 30.19 | 766.7 | 33.1 | 0.6 | 80 | E | | | 2 | | 10 | | | 0 | 0 | | Prof. Reissenberg |
| Kremsmünster | 28.89 | 733.8 | 30.32 | 770.0 | 29.1 | — 1.6 | 72 | W | | | 3 | | 10 | | | 0.028 | 0.7 | | Prof. C. Wagner |
| Lemberg | 29.21 | 741.9 | 30.26 | 768.5 | 28.9 | — 1.7 | 94 | S | | | 1 | | 2 | | | 0 | 0 | | Dr. T. Stanecki. |
| Pola | 30.06 | 763.5 | 30.18 | 766.5 | 39.0 | 3.9 | 89 | E | | | 4 | | 5ks | | | 0 | 0 | | I.R.Hydrographic Office |
| Szathmar | 29.80 | 757.0 | 30.29 | 769.4 | 36.7 | 2.6 | 65 | NW | | | 2 | | 8 | | | 0 | 0 | | Johann Tamas, S. J. |
| Szegedin | 29.91 | 759.7 | 30.21 | 767.2 | 33.8 | 1.0 | 87 | N | | | 1 | | 10 | | | 0 | 0 | | Karl Stancel. |
| Trieste | 30.11 | 764.9 | 30.22 | 767.5 | 40.6 | 4.8 | 30 | ENE | | | 2 | | 2 | | | 0 | 0 | Almost clear | P. Busin. |
| Vienna | 29.64 | 750.3 | 30.30 | 769.7 | 28.2 | — 2.1 | 83 | NE | | | 1 | | 10 | | | 0.075 | 1.9 | Snowing | I. R. Central Met. Obs'y. |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

## BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.89 | 733.8 | 30.48 | 774.2 | 32.5 | 0.3 | 73 | NW | | | 2 | | 10 | | | 0.008 | 0.2 | | Prof. M. Passau. |
| Brussels | 30.26 | 768.7 | 30.47 | 774.0 | 39.6 | 4.2 | 77 | WNW | | | 4 | | 10 | | NW | 0 | 0 | | Royal Observatory. |
| Furnes | 30.53 | 775.4 | 30.55 | 776.0 | 42.8 | 6.0 | 60 | NW | | | 1 | | 8 | | | 0 | 0 | | M. E. de Cae. |
| Maeseyck | 30.25 | 768.4 | 30.38 | 771.6 | 38.1 | 3.4 | 103 | W | | | 2 | | 10 | | | 0.028 | 0.7 | Raining | M. Pierrot. |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4? set. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

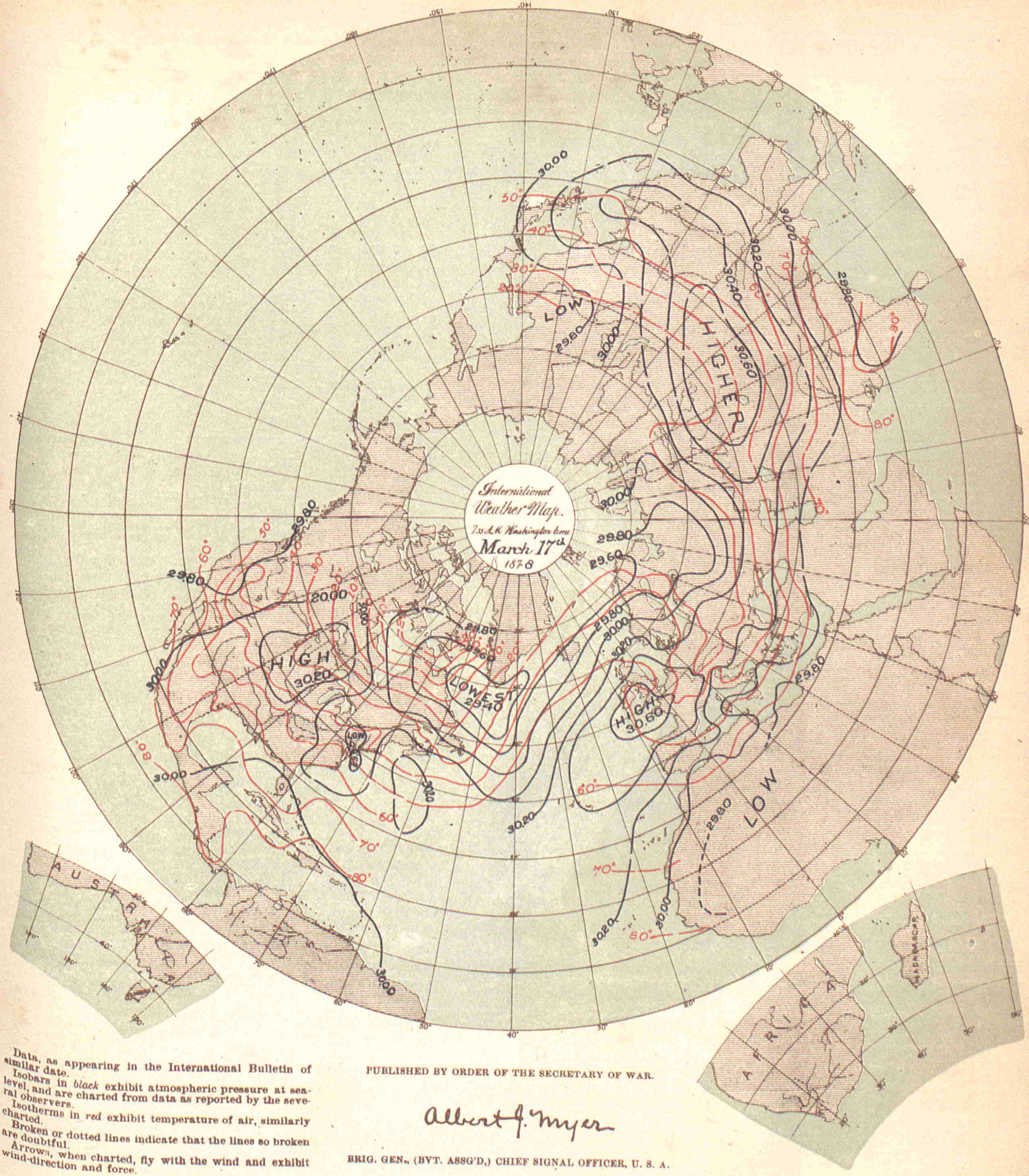
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.31 | 769.9 | 30.41 | 772.4 | 51.0 | 10.6 | ..... | W | 8 | 3.6 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | Overcast | W. Boswell. |
| Ardrossan | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.62 | 777.7 | 49.3 | 9.6 | ..... | WSW | 11 | 4.9 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | S. Call, for Dr. Robinson. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.58 | 776.7 | 45.7 | 7.6 | ..... | W | 21 | 9.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 30.69 | 779.5 | 48.1 | 8.9 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | J. Dreyer. |
| Bradford, Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.97 | 761.2 | 30.00 | 762.0 | 82.0 | 27.8 | ..... | NE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 30.51 | 774.9 | 50.0 | 10.0 | ..... | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | H. Todd. [H. C. |
| Cardington | ..... | ..... | 30.55 | 776.0 | 49.4 | 9.7 | ..... | N | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | John McLaren. |
| Chatham, School M. E. | 30.43 | 772.9 | 30.57 | 776.5 | 46.2 | 7.9 | ..... | N | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | Lt. W. G. Morris, R. E. |
| Dartmoor | 29.10 | 739.1 | 30.64 | 778.2 | 40.0 | 4.4 | ..... | NE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | Fine | Alexander Watt. |
| Donaghadee | 30.55 | 776.0 | 30.58 | 776.7 | 48 | 8.9 | ..... | W | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | J. Mac Gowan. |
| Dover | 30.50 | 774.7 | 30.53 | 775.4 | 42 | 5.6 | ..... | WSW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | Gloomy | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 30.56 | 776.2 | 47.7 | 8.7 | ..... | N | 4.2 | 1.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Thomas Mackereth. |
| Falmouth, Observatory | 30.44 | 773.2 | 30.68 | 779.3 | 43.6 | 6.4 | ..... | NNE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | Foggy | The Staff. |
| Fort Napier, (Natal) | 27.68 | 703.1 | 29.88 | 758.9 | 80.6 | 27.1 | ..... | NE | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.65 | 753.1 | 29.88 | 758.9 | 87 | 30.6 | ..... | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's College | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.88 | 758.9 | 29.93 | 760.2 | 63.2 | 11.8 | ..... | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Corpl. C. Aitken, A.H.C. |
| Glasgow, Observatory | 30.30 | 769.6 | 30.51 | 774.9 | 45.1 | 7.3 | ..... | SW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Drizzling | D. G. Maclean. |
| Great Yarmouth | 30.48 | 774.2 | 30.49 | 774.4 | 41 | 5 0 | ..... | SSW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Misty | G. T. Watson. |
| Greenwich, Royal Obs'y | 30.35 | 770.9 | 30.52 | 775.2 | 46.3 | 7.9 | ..... | N | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Thin clouds | The Staff, for G. B. Airy. |
| Guernsey | 30.38 | 771.6 | 30.61 | 777.5 | 41.5 | 5.3 | ..... | NNW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 30.16 | 766.1 | 47 | 8.3 | ..... | N | ..... | ..... | 2 | ..... | 8c | ..... | ..... | 0 | 0 | Overcast | M. P. Moyle. |
| Holyhead | 30.56 | 776.2 | 30.61 | 777.5 | 49 | 9.4 | ..... | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Tilston. |
| Jersey | 30.35 | 770.9 | 30.66 | 778.7 | 41.6 | 5.3 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | J. Fisher. |
| Kew, Observatory | ..... | ..... | 30.54 | 775.7 | 46.9 | 8.3 | ..... | NW | 12 | 5.4 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Threatening | The Staff. |
| Kingstown | 30.63 | 778.0 | 30.65 | 778.5 | 49 | 9.4 | ..... | WNW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | George Mitchell. |
| Leicester, Museum | ..... | ..... | 30.56 | 776.2 | 47.0 | 8.3 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.81 | 757.2 | 29.89 | 759.2 | 57.6 | 14.2 | ..... | E | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast | Sgt. Fred. Travis, A. H. |
| Nairn | 30.28 | 769.1 | 30.39 | 771.9 | 55 | 12.8 | ..... | WSW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Clear | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 30.00 | 762.0 | 66.8 | 18.8 | ..... | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | C. S. Duncombe. |
| Nottingham, Observatory | 30.36 | 771.1 | 30.56 | 776.2 | 48.9 | 9.4 | ..... | NW | ..... | ..... | 1 | ..... | 10k | ..... | N | 0 | 0 | Overcast | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 30.04 | 763.0 | 30.58 | 776.7 | 44.1 | 6.7 | ..... | NW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.56 | 776.2 | 47 | 8.3 | ..... | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Mr. Lucas. |
| Plymouth | 30.58 | 776.7 | 30.65 | 778.5 | 43.5 | 6.4 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Merrifield. |
| Roche's Point | 30.64 | 778.2 | 30.69 | 779.5 | 49 | 9.4 | ..... | SW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | ⅗ clouded | W. Kennedy. |
| Saint Ann's Head | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | John C. Walker. |
| Sandwick Manse, (Orkneys | ..... | ..... | 30.32 | 770.1 | 47 | 8.3 | ..... | W | 27 | 12.1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Rev. C. Clouston, L.L. D. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 30.11 | 764.8 | 45.0 | 7.2 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | Sergt. W. H. Lyne. |
| Sheffield | 30.26 | 768.6 | 30.54 | 775.7 | 51.1 | 10.6 | ..... | WSW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 0 | 0 | Overcast | W. F. Cooper. |
| Silloth Rectory | 30.50 | 774.7 | 30.53 | 775.4 | 46.5 | 8 1 | 83 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 30.16 | 766.1 | 30.56 | 776.2 | 45.0 | 7.2 | ..... | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Rev. S. J. Perry. |
| Stonorway, Lews C., (Hebr.) | ..... | ..... | 30.36 | 771.1 | 54 | 12.2 | ..... | W | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded | John Sutherland. |
| Stratfield Turgiss | 30.31 | 769.9 | 30.56 | 776.2 | 48.3 | 9.1 | ..... | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Rev. C. H. Griffith, F.M.S. |
| Thurso | ..... | ..... | 30.32 | 770.1 | 49 | 9.4 | ..... | WSW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 30.68 | 779.3 | 49 | 9 4 | ..... | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 30.71 | 780.0 | 51.1 | 10.6 | ..... | WSW | 11 | 4.9 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | Misty | The Staff. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.22 | 767.6 | 64.0 | 17.8 | 76 | S | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0.02 | 0.5 | ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.78 | 756.4 | 29.97 | 761 2 | 84.2 | 29.0 | 60 | ESE | 12.5 | 5.6 | ..... | 0 | 2 | ..... | ..... | 0.10 | 2.5 | Fine | C. Meldrum. |
| Melbourne, Observatory | 30 26 | 768.6 | 30.35 | 770.9 | 51.6 | 10.9 | 76 | SE | 9 | 4.0 | ..... | ..... | 0 | ..... | ..... | 0.07 | 1.8 | Fine | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1, 400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m.

| MARINE SERIES. VESSELS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Algeria, N. 48° 28', W. 48 27' | ..... | ..... | 29.97 | 761.2 | 37.0 | 2.8 | ..... | NW | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 10* | NW | D. clouds | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. C. Prehn. [R. |
| S. S. Peruvian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | OBSERVER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.20 | 665.5 | ..... | ..... | 71.1 | 21.8 | 84 | NE | ..... | ..... | 1 | 2ck | 6ck | ..... | ..... | 0.4 | 10. | Storm | Federico Maison. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.09 | 764.3 | 30.14 | 765.5 | 41.2 | 5.1 | 71 | NW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... |
| Fanöe | 30.23 | 767.7 | 30.24 | 768.2 | 41.8 | 5.5 | 88 | WNW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.43 | 747.6 | 29.48 | 748.7 | 12.6 | —10.8 | 86 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | 29.61 | 752.1 | 29.65 | 753.2 | 44.1 | 6.7 | 100 | S | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | ..... |
| Thorshavn, (Faröe) | 30.14 | 765.6 | 30.18 | 766.5 | 43.3 | 6.3 | 81 | SW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 30.00 | 762.1 | 30.17 | 766.4 | 41.7 | 5.4 | 78 | NW | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 30.10 | 764.6 | 30.05 | 778.6 | 44.6 | 7 | 67 | NE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Collignon, Director. |
| Amiens, Normal School | 30.43 | 772.9 | 30.54 | 775.8 | 43.2 | 6.2 | 58 | WNW | ..... | ..... | 2 | ..... | 5 | ..... | NW | 0 | 0 | Cloudy | Bonvarne, Director. |
| Avignon, Normal School | 30.18 | 766.6 | 30.26 | 768.6 | 45.0 | 7.2 | 29 | N | ..... | ..... | 8 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Mr. Giraud, Director |
| Bar-sur-Seine | 29.92 | 759.9 | 30.51 | 775.0 | 39.4 | 4.1 | 41 | NE | ..... | ..... | 2 | ..... | 8km | ..... | NE | 0 | 0 | Very cloudy | C. Saillard. |
| Beaumette Obs'y (Angers) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Albert Cheux. |
| Beauvais | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Besançon | 29.59 | 751.6 | 30.52 | 775.3 | 40.8 | 4.9 | 44 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | NNW | 0 | 0 | Covered | Normal School. |
| Bourg-en-Bresse | 29.52 | 749.8 | 30.44 | 773.1 | 38.3 | 2.4 | ..... | E | ..... | ..... | 3 | ..... | 2 | ..... | NE | 0 | 0 | Slightly cl'dy | Normal School. |
| Bourges, Normal School | 29.52 | 749.8 | 30.44 | 773.1 | 37.4 | 3 | 97 | N | ..... | ..... | 6 | ..... | 10ck | ..... | N | 0 | 0 | Covered | Normal School. |
| Brest, Naval Observatory | 29.94 | 760.4 | 30.51 | 774.9 | 45.0 | 7.2 | 71 | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | A. Wagner, Director. |
| Carcassonne, Normal School | 30.34 | 770.7 | 30.56 | 776.2 | 42.6 | 5.9 | 66 | NE | ..... | ..... | 1 | ..... | 10 | ..... | NE | 0 | 0 | Misty | The Staff. |
| Caen | 29.91 | 759.8 | 30.34 | 770.6 | 48.6 | 9.2 | 66 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Vateau, Director. |
| Chartres, Normal School | 30.53 | 775.5 | 30.61 | 777.5 | 42.8 | 6 | 91 | N | ..... | ..... | 2 | ..... | 5 | ..... | N | 0 | 0 | Cloudy | Normal School. |
| Châlons-sur-Marne, N. Sch'l | 29.93 | 760.1 | 30.52 | 775.2 | 41.0 | 5 | 90 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Lequin, Director. |
| Clermont-Fd., Puy de D.Obs. | 30.18 | 766.5 | 30.51 | 775.0 | 38.3 | 3.5 | 54 | NW | ..... | ..... | 3 | ..... | 5ck | ..... | NW | 0 | 0 | Cloudy | T. Leloup, Director. |
| Commercy, Normal School | 29.04 | 737.5 | 30.46 | 773.7 | 37.8 | 3.2 | 47 | N | ..... | ..... | 2 | ..... | 2 | ..... | NE | 0 | 0 | Slightly cl'dy | Alluard, Director. |
| Commune de Gréasque* | 29.57 | 751.0 | 30.50 | 774.6 | 35.2 | 1.8 | 71 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | N | 0 | 0 | Covered | Dr. Goulet, Director. |
| Grenoble | 29.06 | 738.2 | 30.21 | 767.2 | 46.2 | 7.9 | 44 | SW | ..... | ..... | 2 | ..... | 2 | ..... | SW | 0 | 0 | ¼ covered | M. Kina. |
| La Roche-sur-Yon, N. School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| Le Mans, Normal School | 30.36 | 771.2 | 30.59 | 777.0 | 41.7 | 5.4 | 54 | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Mouillot, Director. |
| Lons-Le-Saulnier, N.School | 30.25 | 768.4 | 30.58 | 776.7 | 40.1 | 4.5 | 49 | NE | ..... | ..... | 6 | ..... | 2 | ..... | NE | 0 | 0 | Slightly cl'dy | Poirrier, Director. |
| Lorient, Naval Observatory | 29.43 | 747.6 | 30.39 | 771.8 | 36.7 | 2.6 | 63 | NE | ..... | ..... | 6 | ..... | 5 | ..... | NE | 0 | 0 | Cloudy | Voudez, Director. |
| Mâcon, Normal School | 30.55 | 776.0 | 30.65 | 778.5 | 42.4 | 5.8 | 67 | NE | ..... | ..... | 3 | ..... | 8 | ..... | NE | 0 | 0 | ¾ covered | T. Carré, Director. |
| Metz | 29.73 | 755.1 | 30.42 | 772.7 | 35.1 | 1.7 | 93 | NE | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | M. Marchal, Director. |
| Mirecourt | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. A. Schuster, Dir. |
| Nismes, Normal School | 29.34 | 745.1 | 30.44 | 773.2 | 34.7 | 1.5 | 81 | NE | ..... | ..... | 2 | ..... | 1 | ..... | SW | 0 | 0 | Clear | Normal School. |
| Orleans, Normal School | 30.07 | 763.8 | 30.28 | 769.1 | 45.7 | 7.6 | 40 | N | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Boyer, Director. |
| Paris, Observatory | 30.11 | 764.8 | 30.50 | 774.6 | 38.5 | 3.6 | 100 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Bernard, Director. |
| Privas | 30.31 | 769.8 | 30.50 | 775.3 | 38.1 | 3.4 | 51 | NE | ..... | ..... | 1 | ..... | 7 | ..... | NE | 0 | 0 | Very cloudy | National Observatory. |
| Puy de Dome (Summit) | 29.23 | 742.5 | 30.34 | 770.6 | 43.7 | 6.5 | 42 | N | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Normal School |
| Rochefort, Naval Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Alluard, Director. |
| Rouen, Normal School | 30.54 | 775.7 | 30.57 | 776.5 | 45.5 | 7.5 | 55 | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Lt. Decante, Director. |
| Saint Malo (Port) | 30.51 | 774.9 | 30.60 | 777.1 | 41.9 | 5.5 | 64 | NW | ..... | ..... | 2 | ..... | 8 | ..... | N | 0 | 0 | Very cloudy | F. Lucard, Director. |
| Tarbes, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. H. Hercouet. |
| Villefranche | 29.177 | 740.9? | 30.28? | 769.0? | 46.4 | 8 | 86 | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | T. Hugues, Director. |
| SUB-SERIES. | 29.66 | 753.4 | 30.43 | 773.0 | 40.1 | 4.5 | 64 | NNW | ..... | ..... | 2 | ..... | 2 | ..... | N | 0 | 0 | Slightly cl'dy | Vilot, Director |
| Fort de France, Martinique | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Lyons | 29.84 | 757.8 | 29.86 | 758.5 | 79.2 | 26.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchési |
| Marseilles, Observatory | ..... | ..... | 30.41 | 772.4 | 40.3 | 4.6 | ..... | ..... | ..... | ..... | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | M. Jeys. |
| Mont-Louis | ..... | ..... | 30.16 | 766.0 | 45.7 | 7.6 | 28 | NW | ..... | ..... | 2–3 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Nice | 24.93 | 633.1 | 30.24 | 768.1 | 27.8 | — 2.6 | 21 | NNE | 20.5 | 9.17 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Mr. Falguère. |
| Paris, Montsouris Obs'y | 30.11 | 764.7 | 30.19 | 766.7 | 51.1 | 10.6 | 38 | SE | ..... | ..... | 3 | ..... | 1 | ..... | E | 0 | 0 | Clear | Dr. A. Niepce. |
| Perpignan | 30.26 | 768.6 | 30.54 | 775.6 | 38.3 | 3.5 | 54 | NNE | ..... | ..... | 3 | ..... | 8 | ..... | N | 0 | 0 | ..... | Marié Davy, Director. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | 30.33 | 770.4 | 46.5 | 7.5 | 37 | NW | 28.0 | 12.50 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Plantade,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Saint Maur, (near Paris) | 22.52 | 571.9 | ..... | ..... | 20.8 | — 6.2 | ..... | NE | ..... | ..... | 4–6 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Gen'l de Nansouty |
| Toulouse, Observatory | 30.38 | 771.7 | 30.55 | 775.9 | 39.7 | 4.3 | 45 | N | ..... | ..... | 1 | ..... | 8 | ..... | N | 0 | 0 | ..... | E. Renou. |
| Tours | 29.72 | 755.0 | 30.46 | 773.6 | 39.4 | 4.1 | 38 | NNW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | Inap. | Inap. | ..... | The Staff. |
| Versailles, (near Paris) | 30.35 | 771.0 | 30.55 | 776.0 | 40.3 | 4.6 | 52 | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear.. | C. Marquet. |
| Zi-Ka-Wei, (near Shanghai) | ..... | ..... | 30.54 | 775.7 | 41.7 | 5.4 | 39 | NE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.003 | 0.07 | Cloudy | Dr. A. Bérigny. |
| ..... | 30.41 | 772.3 | 30.43 | 772.9 | 39.9 | 4.4 | 70 | NE | 7.2 | 3.2 | ..... | ..... | 2ks | ..... | ..... | 0 | 0 | Clear | Mare Dechevrens, S. J. |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 30.07 | 763.8 | 30.25 | 768.3 | 36.0 | 2.2 | 80 | S | | | 1 | | 10 | | | 0.060 | 1.52 | | Prof. Arndt. |
| Breslau | 29.76 | 756.0 | 30.30 | 769.6 | 32.7 | 0.4 | 80 | S | | | 2 | | 0 | | | 0.181 | 3.32 | | Royal University Obs'y |
| Carlsruhe | 29.95 | 760.6 | 30.40 | 772.2 | 30.6 | — 0.8 | 96 | SW | | | 2 | | 10 | | | 0.358 | 9.1 | Heavy snow | Albert Senz. |
| Cassel | 29.78 | 756.4 | 30.39 | 772.0 | 36.3 | 2.4 | 86 | NW | | | 3 | | 10 | NW | | 0.032 | 0.82 | | Dr. H. Möhl. |
| Crefeld | 30.21 | 767.2 | 30.37 | 771.4 | 39.4 | 4.1 | 90 | NW | | | 4 | | 10 | | | | | Raining | Director Lose. |
| Emden | 30.35 | 771.0 | 30.39 | 771.9 | 44.6 | 7.0 | 71 | N | | | 3 | | 5 | | | 0.035 | 0.9 | | Prof. Prestel. |
| Frankfort on the Main | 30.02 | 762.5 | 30.41 | 772.4 | 33.8 | 1 | 82 | SW | | | 1 | | 10 | | | Inap. | Inap. | Snowing | Physical Society. |
| Friedrichshafen | 29.94 | 760.1 | 30.47 | 773.8 | 31.3 | — 0.4 | 89 | SW | | | 2 | | 10 | | | 0.420 | 10.9 | | M. Wilhelm. |
| Hamburg | 30.19 | 766.8 | 30.26 | 768.7 | 42.3 | 5.7 | 71 | NNE | | | 3 | | 10ks | | | 0 | 0 | Cloudy | Captain F. Hegemann. |
| Kiel | 30.19 | 766.8 | 30.26 | 768.7 | 42.3 | 5.7 | 71 | NW | | | 2 | | 10 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 30.22 | 767.6 | 30.24 | 768.0 | 46.4 | 8.0 | 40 | W | | | | | | | | 0.007 | 0.19 | Snowing | Prof. E. Luther. |
| Köslin | 30.11 | 764.8 | 30.19 | 766.8 | 31.1 | — 0.5 | 68 | SW | | | 2 | | 4 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | | | 30.17 | 766.2 | 33.8 | 1.0 | | NW | | | 1 | | 10 | WNW | | | | Snowing | Prof. Bruhns. |
| Memel, Naval School | 29.84 | 758.0 | 30.28 | 769.2 | 35.1 | 1.7 | 88 | SW | | | 4 | | 8cs;ks | | | | | | Reinbrech von Skalweit. |
| Neufahrwasser | 30.13 | 765.2 | 30.17 | 766.4 | 34.5 | 1.4 | 66 | SSW | | | 3 | | 4 | WSW | | 0 | 0 | | A. Lothes. |
| Posen | 30.19 | 766.8 | 30.21 | 767.2 | 33.6 | 0.9 | 75 | WSW | | | 6–7 | | 10 | | | 0.002 | 0.06 | Cloudy | Dr. Magener. |
| Strassburg Obs., (in Alsace | 30.03 | 762.7 | 30.33 | 770.4 | 34.7 | 1.5 | 73 | NW | | | 3 | | 10 | WNW | | | | Snowing | Dr. Schur. |
| Stuttgart | 29.91 | 759.6 | 30.49 | 774.5 | 33.3 | 0.7 | 71 | W | | | 1 | | 10 | | | 0.335 | 8.5 | Snowing | Prof. Schoder. |
| Treves, (Trier) | 29.39 | 746.6 | 30.39 | 771.9 | 31.6 | — 0.2 | 76 | W | | | 5 | | 10 | | | 0.030 | 0.77 | Foggy | Prof. Flesch. |
| Weissenburg, (Bavaria) | 29.80 | 757.0 | 30.33 | 770.4 | 37.0 | 2.8 | 64 | W | | | | | 10 | | | 0.039 | 1.0 | Snowing | Dr. Von Bebber. |
| Wustrow, Naval School | 28.75 | 730.3 | 30.36 | 771.2 | 27.9 | — 2.3 | 94 | W | 2 | 1 | | | 10 | | | 0.180 | 4.57 | Covered | E. F. Schütz. |
| | 30.22 | 767.6 | 30.26 | 768.6 | 37.8 | 3.2 | 85 | NNW | | | 2 | | 10 | | | | | | |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Königsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.67 | 753.5 | 30.06 | 763.5 | 55.8 | 13.2 | | NW | | | 0.5 | | | | | | | ⅛ clear | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.92 | 759.9 | 29.97 | 761.2 | 83.0 | 28.3 | 44 | SW | 14.07 | 6.32 | | | 0 | | | 0 | 0 | Misty | |
| Deesa | 29.46 | 748.4 | 29.94 | 760.4 | 87.5 | 30.8 | 23 | N | | | | | 0 | | | 0 | 0 | Misty | |
| Bombay | 29.86 | 758.3 | 29.89 | 759.3 | 80.5 | 26.9 | 77 | NW | 14.0 | 6.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.83 | 706.9 | 29.79 | 756.7 | 89.7 | 32.1 | 26 | N | | | | | 0 | | | 0 | 0 | Dust-whirl | |
| Lahore | 29.29 | 743.9 | 30.05 | 763.2 | 73.8 | 23.2 | 39 | N | 2.6 | 1.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.36 | 695.0 | 29.86 | 758.3 | 86.2 | 30.1 | 52 | W | 15.0 | 6.7 | | | 1 | | | 0 | 0 | D. clouds | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 29.09 | 738.8 | 30.01 | 762.2 | 72.8 | 22.7 | 45 | NW | 2.3 | 1.0 | | | | | | 0 | 0 | | |
| Agra | 29.40 | 746.7 | 29.97 | 761.2 | 80.2 | 26.8 | 43 | E | | | | | | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.79 | 731.2 | 29.80 | 757.0 | 95.5 | 35.3 | 18 | W | 2.6 | 1.2 | | | 3 | | | 0 | 0 | D. clouds | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.55 | 750.6 | 29.93 | 760.1 | 78.3 | 25.7 | 58 | NE | 2.9 | 1.3 | | | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.60 | 751.7 | 29.91 | 759.6 | 82.3 | 27.9 | 55 | Calm | 3.4 | 1.5 | | | 0 | | | 0.25 | 6.3 | Blue sky | |
| Patna | 29.76 | 755.8 | 29.94 | 760.5 | 82.3 | 27.9 | 54 | E | 3.3 | 1.5 | | | 2 | E | E | 0.07 | 1.8 | | |
| Hazaribagh | 27.90 | 708.8 | 29.95 | 760.8 | 70.8 | 21.6 | 62 | ENE | 8.4 | 3.8 | | | 6 | | | 0.29 | 7.4 | Thunder-storm | |
| Cuttack | 29.81 | 757.1 | 29.89 | 759.1 | 85.5 | 29.7 | 64 | SSW | 4.8 | 2.2 | | | 8 | | | 0 | 0 | D. clouds | |
| Calcutta (Alipore) | 29.96 | 761.0 | 29.98 | 761.6 | 83.6 | 28.7 | 54 | NE | 9.0 | 4.0 | | | 10 | | NW | 0 | 0 | Overcast | |
| Goalpara | 29.51 | 749.5 | 29.90 | 759.6 | 75.8 | 24.3 | 67 | Calm | 1.5 | 0.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.85 | 758.2 | 29.94 | 760.5 | 80.1 | 26.7 | 78 | WSW | 5.3 | 2.4 | | | 6 | | | 0 | 0 | D. clouds | |
| Sibsagar | 29.66 | 753.2 | 30.00 | 762.0 | 69.7 | 20.9 | 75 | ENE | 3.1 | 1.4 | | | 10 | | | 0.14 | 3.6 | D. clouds | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.61 | 724.2 | 29.87 | 758.6 | 85.5 | 29.7 | 35 | NE | 5.0 | 2.2 | | | 1 | | E | 0 | 0 | D. clouds | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.74 | 755.5 | 30.17 | 766.2 | 41.0 | 5.0 | 52 | E | 2.5 | 1.1 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 30.09 | 764.3 | 30.21 | 767.2 | 39.6 | 4.2 | 18 | N | 6.3 | 2.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 30.00 | 762.0 | 30.20 | 767.0 | 43.3 | 6.3 | 25 | SE | 3.8 | 1.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.82 | 732.0 | 30.16 | 766.1 | 42.4 | 5.8 | 33 | SW | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.69 | 754.1 | 30.23 | 767.8 | 44.6 | 7.0 | ..... | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.30 | 744.3 | 30.23 | 767.8 | 42 6 | 5.9 | 38 | SSE | 3.1 | 1.4 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 28.24 | 717.4 | 30.19 | 766.9 | 35.4 | 1.9 | 32 | NW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.96 | 761.0 | 30.19 | 766.8 | 46.6 | 8.1 | 11 | ENE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 30.03 | 762.7 | 30.20 | 767.1 | 48.6 | 9.2 | 12 | NW | 6.9 | 3.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.84 | 757 8 | 30.17 | 766.2 | 41.9 | 5.5 | 41 | ESE | ..... | ..... | 6 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.89 | 759.2 | 30.15 | 765.9 | 40.1 | 4.5 | 22 | NE | ..... | ..... | 6 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Cav. F Meucci. |
| Leghorn | 30.08 | 764.1 | 30.17 | 766.3 | 42.3 | 5.7 | 18 | ENE | 15.4 | 6.9 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 30.16 | 766.1 | 30.21 | 767.4 | 38.7 | 3.7 | 65 | N | 24.8 | 11.1 | ..... | ..... | 5 | NE | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.56 | 725.4 | 30.17 | 766.2 | 33.4 | 0.8 | ..... | NNE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 30.01 | 762.2 | 30.12 | 765.1 | 44.2 | 6.8 | 25 | NNE | ..... | ..... | 6 | ..... | 4 | NE | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.83 | 757.6 | 30.01 | 762 2 | 43.2 | 6.2 | 50 | N | 11.2 | 5.0 | ..... | ..... | 10 | ..... | ..... | 0.276 | 7.0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U | 29.79 | 756.7 | 30.00 | 761.9 | 46.4 | 8.0 | 54 | NE | ..... | ..... | 4 | ..... | 10 | SSW | ..... | 0.008 | 0.2 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 47.8 | 8.8 | 83 | W | 6.3 | 2.8 | ..... | ..... | 10 | W | ..... | 0.339 | 8.6 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.79 | 756.7 | 29.99 | 761.7 | 52.9 | 11.6 | 51 | NW | ..... | ..... | 2 | ..... | 4 | NW | ..... | 0.035 | 0.9 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.10 | 739.1 | 30.00 | 762.1 | 44.4 | 6.9 | 75 | SW | 5.6 | 2.5 | ..... | ..... | 10 | ..... | ..... | 0.283 | 7.2 | ..... | Prof. F. D. Conti. |
| Palermo | 29.65 | 753.1 | 29.91 | 759.7 | 51.3 | 10.7 | 54 | NW | 6.9 | 3.1 | ..... | ..... | 9 | ..... | ..... | 0.039 | 1.0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.77 | 756.1 | 29.84 | 758.0 | 54.9 | 12.7 | 92 | NNE | ..... | ..... | 6 | ..... | 10 | NE | ..... | 0.504 | 12.8 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.46 | 748.2 | 30.01 | 762.3 | 42.8 | 6.0 | 54 | W | 4.3 | 1.9 | ..... | ..... | 8 | N | ..... | 0 | 0 | ..... | Prof. F. Brioschi |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 879.6 m., or 1,945.8 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 29.96 | 761.0 | 30.03 | 762.7 | 34.0 | 1.1 | 47 | NW | 10.7 | 4.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | The Observatory. |
| Tokei (Yeddo) University | 29.92 | 760.0 | 30.02 | 762.6 | 33.5 | 0.8 | 71 | NNW | 15 | 6.7 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear..... | Prof. P. V. Veeder. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | 25.11 | 637.9 | 29.91 | 759.7 | 63.5 | 17.5 | 58 | W | 0.9 | 0.4 | ..... | 4c | 0 | N | ..... | 0 | 0 | ¾ cloudy..... | L. Castillo, A. E. |
| Guadalajara | 25.12 | 638.0 | 30.17 | 766.4 | 48.6 | 9.2 | 64 | SW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Blue sky..... | Prof. L. Perez. |
| Guanajuato | 23.73 | 602.9 | 30.01 | 762.4 | 53.6 | 12.0 | 65 | E | ..... | ..... | ..... | 1 | 0 | SW | ..... | 0 | 0 | Hazy ..... | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 51.8 | 11.0 | 80 | S | 1.8 | 0.8 | ..... | 2cs | 1n | W | SW | 0 | 0 | Clear. ..... | Prof. M. Leal. |
| Mexico | 23.16 | 588.3 | 30.30 | 769.6 | 46.2 | 7.9 | 89 | Calm | 0 | 0 | ..... | 0 | 10pk | ..... | ..... | 0 | 0 | Covered ..... | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 49 8 | 9.9 | 74 | W | 0.0 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear... | M. V. de Leon, M. E. |
| Puebla | 23.38 | 593.9 | 30.14 | 765.5 | 46.8 | 8.2 | 78 | NNW | 5.1 | 2.3 | ..... | 1c | 4n | ..... | WSW | 0 | 0 | ⅛ cloudy ..... | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 30.11 | 764.9 | 30.13 | 765.2 | 71.6 | 22.0 | 73 | N | 10.9 | 8.9 | ..... | 5c | 5k | E | NNE | 0 | 0 | Dark..... | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 30.13 | 765.2 | 30.15 | 765.9 | 74.3 | 23.5 | 64 | N | 15.0 | 6.7 | ..... | 0 | 98k | ..... | SW | Inap. | Inap. | Very cloudy | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 44.6 | 7.0 | 88 | WSW | 1.8 | 0.8 | ..... | 0 | 6k | ..... | W | 0 | 0 | ⅛ cloudy..... | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Spina. [M. M. D. D. |
| Morelia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Tena, F. L. Param. |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 818 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,024.4 m., or 6,813.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft. San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Groningen | 30.50 | 774.7 | 30.50 | 774 7 | 43.5 | 6.4 | ..... | NW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... |
| Helder | 30.30 | 769.6 | 30.35 | 771.0 | ..... | ..... | ..... | N | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.039 | 1.0 | ..... | ..... |
| Hellevoetsluis | 30.42 | 772.6 | 30.42 | 772 6 | 42.8 | 6.0 | ..... | NW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.016 | 0.4 | ..... | ..... |
| Utrecht | 30.47 | 773 9 | 30.47 | 773.9 | 43.2 | 6.2 | 77 | NW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | 30.39 | 771.9 | 30.44 | 773.1 | 42.4 | 5.8 | 74 | NW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | H. v d Brink. |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS | Barometer: Corrected for instrumental error and temperature. Inches. | Barometer: Corrected for instrumental error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.16 | 766.1 | 30.22 | 767.5 | 39.9 | 4.4 | 97 | SSE | 6.9 | 3.1 | | | 8 | | | 0.417 | 10.6 | | |
| Brönö | 29.81 | 757.2 | 29.85 | 758.2 | 40.6 | 4.8 | 81 | WSW | 9 | 4 | | | 10 | | | 0.339 | 8.6 | Raining | |
| Christiania | 29.93 | 760.1 | 30.08 | 763.9 | 49.3 | 9.6 | 41 | SSW | 0 | 0 | | | 4 | | | 0 | 0 | | |
| Tromsö | 29.45 | 748.0 | 29.49 | 749.1 | 37.4 | 3.0 | 66 | SW | 11 | 5 | | | 10 | | | 0.276 | 7.0 | | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the cooperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.23 | 767.8 | 30.42 | 772.7 | 59.9 | 15.5 | 76 | ESE | 4.9 | 2.2 | | | 2 | | | 0.079 | 2.0 | | Dr. J. A. Sampaio. |
| Campo Major | 29.14 | 740.2 | 30.19 | 766.8 | 50.9 | 10.5 | 17 | NNE | 26.6 | 11.9 | | | 0 | | | 0 | 0 | | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.08 | 763.9 | 30.16 | 766.1 | 67.3 | 19.6 | 39 | SW | 5.6 | 2.5 | | | 0 | | | 0 | 0 | | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.86 | 758.4 | 30.23 | 767.7 | 51.6 | 10.9 | 22 | NE | 31.1 | 13.9 | | | 0 | | | 0 | 0 | | The Staff. |
| Ponta Delgada, (Azores) | 30.35 | 771.0 | 30.44 | 773.2 | 60.8 | 16.0 | 66 | ESE | 1.8 | 0.8 | | | 10 | | | 0 | 0 | | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m

| Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell: Height scale 0–9 | Sea or swell: Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | | | | | | | | | | | | | | | | | | R. A. T. Pinha, Com'd. |
| D. Fernando | | | | | | | | | | | | | | | | | | A. M. de Sande, Com'd. |
| India | | | | | | | | | | | | | | | | | | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.73 | 755.1 | 29.74 | 755.3 | 85.8 | 29.9 | | E | | | 1 | | 5 | | E | 1 | | Blue sky | J. F. R. R. Bastos, Com'd't. A. J. de Mattos, Com'd't. |
| Quanza | | | | | | | | | | | | | | | | | | |
| Sado, Dakar, Sennegambia | 30.08* | 764.0* | 30.09* | 764.3* | 68.9 | 20.5 | | NNE | | | 6 | | 8 | | NNE | 4 | NNE | Gloomy | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.76 | 755.9 | 29.77 | 756.1 | | | | W | | | 2 | | 6 | | W | 1 | | Blue sky | F. Texeira da Silva, Com'd't. F. J. Ferreina dos Annas, Com'd't. |
| Tejo | | | | | | | | | | | | | | | | | | |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.85 | 758.1 | 30.30 | 769.6 | 27.3 | — 2.6 | 60 | SSW | 2 | 1 | | | 5k | | | | Snowing | Astronomical Obs. |
| Wilna | 29.77 | 756.1 | 30.21 | 767.4 | 27.3 | — 2.6 | 75 | WSW | 2 | 1 | | | 10 | | | | | Astronomical Obs. |
| Dorpat | 29.73 | 755.2 | 29.99 | 761.7 | 28.6 | — 1.9 | 90 | WSW | 9 | 4 | | | 10n | | | | | Prof. Dr. Welhrauch. |
| St. Petersburg | 29.85 | 758.2 | 29.87 | 758.6 | 23.7 | — 4.6 | 84 | WNW | 11 | 5 | | | 10n | | | | | Central Physical Obs. |
| Kuopio | 29.43 | 747.5 | 29.76 | 756.0 | 32.2 | 0.1 | 100 | Calm | 0 | 0 | | | 10 | | | | | Ch. Forsten. |
| Kieff | 29.56 | 750.8 | 30.23 | 767.8 | 29.3 | — 1.5 | 56 | NW | 11 | 5 | | | 8k;ks | | | | | Physical Cabinet. |
| Nikolaiev | 30.26 | 768.6 | 30.33 | 770.4 | 38.3 | 3.5 | 52 | WSW | 4 | 2 | | | 5k | | | | | Kurdakof. |
| Kertch | 30.34 | 770.5 | 30.35 | 771.0 | 42.8 | 6.0 | 69 | NNE | 9 | 4 | | | 3 | | | | | Lagorio. |
| Moscow | 29.20 | 741.7 | 29.78 | 756.4 | 22.6 | — 5.2 | 85 | SSE | 9 | 4 | | | 10s | | | | Snowing | Meteorological Obs. |
| Lugan | 30.00 | 762.1 | 30.22 | 767.5 | 32.9 | 0.5 | 51 | W | 13 | 6 | | | 6k | | | | | Meteorological Obs. |
| Archangel | 29.70 | 754.4 | 29.72 | 754.9 | 24.4 | — 4.2 | 81 | NE | 4 | 2 | | | 10 | | | | | Ogorodnikof. |
| Tiflis | 28.70 | 729.0 | 30.11 | 764.7 | 62.6 | 17.0 | 47 | SE | 13 | 6 | | | 6cs | | | | Light clouds | Physical Observatory |
| Astrakhan | 30.36 | 771.1 | 30.28 | 769.0 | 43.9 | 6.6 | 54 | NNW | 2 | 1 | | | 10n | | | | | Sebastianof. |
| Kasan | 29.64 | 752.9 | 29.93 | 760.1 | 27.9 | — 2.3 | 63 | S | 9 | 4 | | | 7 | | | | | Physical Cabinet. |
| Orenburg | | | | | | | | | | | | | | | | | | Tschernischef. |
| Ekaterinburg | 29.08 | 738.7 | 30.06 | 763.5 | 36.0 | 2.2 | 59 | SE | 7 | 3 | | | 6c | | | | Light clouds | Meteorological Obs |
| Nukuss | 29.90 | 759.5 | 30.13 | 765.3 | 67.8 | 19.9 | 80 | ESE | 11 | 5 | | | 5k | | | | | |
| Kasaly | | | | | | | | | | | | | | | | | | Bobrof. |
| Tashkend | 28.63 | 727.3 | 30.34 | 770.7 | 59.7 | 15.4 | 26 | NNW | 2 | 1 | | | 0 | | | | | Michelson. |
| Barnaul | 30.06 | 763.5 | 30.62 | 777.8 | 24.1 | — 4.4 | 86 | SW | 0 | 0 | | | 8 | | | | Light clouds | Meteorological Obs. |
| Yeniseisk | 29.85 | 758.1 | 30.19 | 766.8 | 26.1 | — 3.3 | 94 | WSW | 9 | 4 | | | 10 | | | | Snowing | Marks. |
| Irkutsk | | | | | | | | | | | | | | | | | | Usolzef. |
| Krotkowo* | 29.58 | 751.2 | 30.07 | 763.8 | 27.9 | — 2.3 | 54 | SW | 18 | 8 | | | 9k | | | | | Cand. Fatjanow. |
| Peking, (China) | 30.06 | 763.5 | 30.20 | 767.1 | 50.2 | 10.1 | 31 | SW | 4 | 2 | | | 0 | | | | | Physical Observatory. |
| Nertchinsk | 27.66 | 702.6 | 29.81 | 757.1 | 24.8 | — 4.0 | 58 | Calm | 0 | 0 | | | 9 | | | | | Meteorological Obs. |
| Vladivostock | | | | | | | | | | | | | | | | | | |
| Nikolaievsk, on the Amoor | | | | | 12.7 | —10.7 | 90 | Calm | 0 | 0 | | | 10n | | | | | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | | | 30.09 | 764.3 | 48.4 | 9.1 | 32 | NE | 6.0 | 2.69 | | 0 | 0 | | | 0 | 0 | Clear | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.48 | 774.2 | 30.54 | 775.7 | 46.8 | 8.2 | 60 | N | 3.1 | 1.39 | | 3 | 2 | NE | | 0 | 0 | Cloudy | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.33 | 694.1 | | | 36.0 | 2.2 | 93 | NE | 13.8 | 6.19 | | 0 | 0 | | | 0 | 0 | Clear | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.93 | 709.3 | 30.20 | 767.1 | 50.0 | 10.0 | 18 | NE | 23.9 | 10.67 | | 0 | 0 | | | 0 | 0 | Clear. | The Staff. |
| Murcia, Met. Obs'y | 29.98 | 761.4 | 30.13 | 765.3 | 52.7 | 11.5 | 57 | NE | 5.8 | 2.58 | | 5 | 5 | W | | 0 | 0 | Covered | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.47 | 748.6 | 30.39 | 771.9 | 50.9 | 10.5 | 70 | NE | 34.8 | 15.56 | | 1 | 0 | NE | | 0 | 0 | Clear | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.82 | 757.5 | 29.89 | 759.2 | 70.2 | 21.2 | 92 | SE | 8.7 | 3.9 | | 7ck | 1s | WSW | | 2.890 | 73.4 | Fair | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 29.92 | 759.8 | 30.02 | 762.4 | 47.8 | 8.8 | 63 | NE | 22.3 | 9.9 | | 0 | 10 | | E | 0.309 | 7.8 | Light rain | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.89 | 759.1 | 29.98 | 761.4 | 79.9 | 26.6 | 89 | SE | 2.2 | 1.00 | | 2cs | 2cs | SE | SE | 0 | 0 | Clear | Leonardo de Tejeda, Chief of Engineers. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft. The barometer readings at Barcelona are published as given.

## SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-10. | Clouds. Amount. Up'er 0-10. | Clouds. Amount. Low'r 0-10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.75 | 755.7 | 29.79 | 756.7 | 29.8 | — 1.2 | ..... | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.78 | 756.4 | 29.83 | 757.7 | 44.6 | 7.0 | 63 | NW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.85 | 758.3 | 29.91 | 759.6 | 48.0 | 8.9 | 54 | WNW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0.004 | 0.1 | ..... | |
| Stockholm | 29.76 | 756.0 | 29.94 | 760.5 | 43.9 | 6.6 | 65 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.00 | 761.7 | 30.05 | 763.2 | 37.8 | 3.2 | 87 | WSW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0.094 | 2.4 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.89 | 759.1 | 29.96 | 761.0 | 41.2 | 5.1 | 82 | NW | 7.2 | 3.2 | ..... | ..... | 10 | ..... | N | 0 | 0 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.89 | 733.9 | 30.39 | 771.8 | 33.4 | 0.8 | 80 | NNE | ..... | ..... | 7 | ..... | 1 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| Zurich | 28.73 | 729.8 | 30.45 | 773.4 | 31.3 | — 0.4 | 47 | W | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.169 | 4.8 | Cloudy | The Observatory. |
| ..... | | | | | | | | | | | | | | | | | | | |
| ..... | | | | | | | | | | | | | | | | | | | |
| ..... | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +0.8 mm.; Thermometer, —7.1 cent.; Relative Humidity, +19 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.17 | 766.2 | 43.9 | 6.6 | 79 | ENE | 13 | 6.0 | ..... | ..... | 10 | ..... | E | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanidès. |
| Valona | ..... | ..... | 29.89 | 759.3 | 46.2 | 7.9 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | A. Bertrand. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria.) Lee Obs'y | 29.80 | 756.9 | 29.91 | 759.8 | 66.4 | 19.1 | 85 | N | ..... | ..... | 1 | ..... | 7c | ..... | ..... | 0 | 0 | D. clouds | Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds; and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.66 | 753 1 | 29.96 | 761.0 | 33 | 0.6 | ..... | Calm | 0 | 0 | ..... | ..... | 8s | ..... | SW | 0 | 0 | Cloudy | W. R. Bigg. |
| *Chatham, N B | 29.88 | 758.9 | 29.94 | 760.5 | 32 | 0.0 | 84 | SW | 2 | 0.9 | ..... | 2k | 8ks | W | W | Inap. | Inap. | Cloudy | G. A. Blair. |
| Charlottetown, P. E. Island | 29.92 | 760.0 | 29.96 | 761.0 | 31 | — 0.6 | 89 | SW | 8 | 3.6 | ..... | 0 | 5ks | ..... | SW | 0 | 0 | Fair | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.73 | 755.1 | 29.92 | 760.0 | 35.8 | 2.1 | 89 | NE | ..... | ..... | 1 | 0 | 4s | ..... | ..... | 0 | 0 | Fair | James Smith, M. A |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. A. Johnson. |
| Esquimault, B. C | 29.80 | 756.9 | 29.85 | 758.2 | 44.8 | 7.1 | 96 | N | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | W. H. Bevis. |
| *Father Point, Quebec | ..... | ..... | 29.99 | 761.7 | 32 | 0.0 | 95 | W | 5 | 2.2 | ..... | 5k | 5s | NW | NW | 0.01 | 0.3 | Cloudy | J. McWilliams. |
| Fredericton, N. B | 29.90 | 761.0 | 30.03 | 762.7 | 33.0 | 0.6 | 85 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | Prof. Harrison. |
| *Fort Garry Manitoba | 29.45 | 748.0 | 30.33 | 770.4 | 24 | — 4 | 87 | S | 14 | 6.3 | ..... | 5ck | 2ks | S | S | 0 | 0 | Fair | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.74 | 730.0 | 29.80 | 758.4 | 38 | 3.3 | 100 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Grant. |
| *Halifax, N. S | 29.92 | 760.0 | 30.06 | 763.5 | 32 | 0.0 | 85 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | F. Allison, M. A. |
| Hamilton, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.74 | 755.4 | 29.76 | 755.9 | 27 | — 2.8 | 75 | NW | ..... | ..... | 3 | ..... | 3ck | ..... | ..... | 0 | 0 | Overcast | E. Weedon. |
| *Kingston, Ontario | 29.57 | 751.1 | 29.92 | 760.0 | 36 | 2.2 | 78 | NE | 3 | 1.3 | ..... | 8c | 0 | Calm | ..... | 0 | 0 | Fair | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.93 | 760.2 | 29.97 | 761.2 | 32 | 0.0 | ..... | SW | 5 | 2.2 | ..... | 7k | 0 | SW | ..... | 0 | 0 | Cloudy | C. H. Rigby. |
| *Montreal, Quebec | 29.74 | 755.4 | 29.96 | 761.0 | 38 | 3.3 | 68 | S | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.21 | 741.9 | 29.92 | 760.0 | 38 | 3.3 | 95 | N | 4 | 1.8 | ..... | 2ck | 2ks | E | E | 0.12 | 3.0 | Fair | Rev. R. Mosley. |
| Peterboro, Ontario | 29.13 | 739.9 | 29.90 | 759.4 | 35.7 | 2.1 | 98 | Calm | ..... | ..... | ..... | 0 | 8ks | ..... | ..... | 0 | 0 | Hazy | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.13 | 739.9 | 29.83 | 757.7 | 39 | 3.9 | 97 | NE | 4 | 1.8 | ..... | ..... | 10n | ..... | NE | 0.15 | 3.8 | Threatening | H. Morgan. |
| Port Hastings, N. S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Peter Grant. |
| Port Stanley, Ontario | 29.19 | 741.4 | 29.84 | 757.9 | 39 | 3.9 | 93 | NW | 4 | 1.8 | ..... | ..... | 10n | ..... | E | 0.27 | 6.9 | Light rain | M. Payne. |
| *Quebec, Quebec | 29.66 | 753.4 | 30.00 | 762.0 | 32 | 0.0 | 90 | Calm | ..... | ..... | 0 | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.48 | 748.8 | 29.95 | 760.7 | 36 | 3.3 | 67 | N | 10 | 4.5 | ..... | ..... | 5s | ..... | N | 0 | 0 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 29.98 | 761.5 | 30.03 | 762.7 | 34 | 1.1 | 80 | W | 2 | 0.9 | ..... | 5k | 2ks | NW | ..... | 0 | 0 | Cloudy | Dr. Gove. |
| St. John, N. B | 29.87 | 758.7 | 30.04 | 763.0 | 32 | 0.0 | 89 | SW | 3 | 1.3 | ..... | ..... | 8ks | ..... | ..... | 0 | 0 | Cloudy | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.16 | 740.7 | 29.88 | 758.9 | 41 | 5.0 | 91 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | Calm | Inap. | Inap. | Cloudy | K. Stewart. |
| Stayner, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. J. Cole. |
| Stratford, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.04 | 1.0 | ..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 28.58 | 725.9 | 29.88 | 758.9 | 40.0 | 4.4 | 92 | NE | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0.216 | 5.48 | Cloudy | T. C. Hill. |
| *Toronto, Ontario | 29.97 | 761.2 | 30.00 | 762.0 | 31 | — 0.6 | 90 | SW | 6 | 2.7 | ..... | 5ck | 0 | NW | ..... | 0 | 0 | Fair | Magnetic Observatory. |
| Windsor, N. S | 29.47 | 748.5 | 29.86 | 758.4 | 39 | 3.9 | 92 | NE | 9 | 4.0 | ..... | ..... | 10ks | ..... | E | 0.17 | 4.3 | Cloudy | Prof. John E. Oram. |
| Woodstock, Ontario | 29.94 | 760.5 | 30.03 | 762.7 | 35.0 | 1.7 | 95 | SW | 8 | 3.6 | ..... | 4cs | 4ks | ..... | ..... | 0 | 0 | Fair | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 29.0 | — 1.7 | ..... | W | ..... | ..... | ..... | 5 | 5s | ..... | ..... | 0.02 | 0.5 | Fair | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.70 | 754.4 | 29.93 | 760.2 | 41 | 5.0 | 57 | S | 3 | 1.3 | ..... | 2c | 2s | SW | SW | 0 | 0 | Fair | |
| Alpena, Michigan | 29.30 | 744.2 | 29.96 | 761.0 | 35 | 1.7 | 100 | NE | 17 | 7.6 | ..... | ..... | Fog | ..... | Calm | 0.13 | 3.3 | Light rain | |
| Atlantic City, New Jersey | 29.79 | 756.7 | 29.81 | 757.2 | 44 | 6.7 | 100 | E | 27 | 12.1 | ..... | ..... | 10n | ..... | E | 0.45 | 11.4 | Light rain | |
| Augusta, Georgia | 29.75 | 755.6 | 29.93 | 760.2 | 51 | 10.6 | 72 | Calm | 0 | 0 | ..... | 2c | Fog | SW | Calm | 0 | 0 | Fair | |
| Baltimore, Maryland | 29.76 | 755.9 | 29.81 | 757.2 | 46 | 7.8 | 84 | N | 5 | 2.2 | ..... | 2cs | 2ks | SW | NE | 0.09 | 2.3 | Fair | |
| Barnegat, New Jersey | 29.82 | 757.4 | 29.84 | 757.9 | 43 | 6.1 | 91 | SE | 32 | 14.3 | ..... | ..... | 10n | ..... | Calm | 0.19 | 4.8 | Light rain | |
| Bismarck, Dakota | 28.24 | 719.8 | 30.20 | 767.1 | 35 | 1.7 | 80 | SE | 4 | 1.8 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Boise City, Idaho | 27.06 | 687.3 | 29.94 | 760.5 | 45 | 7.2 | 84 | NE | 1 | 0.4 | ..... | 5k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Boston, Massachusetts | 29.88 | 758.9 | 30.04 | 763.0 | 35 | 1.7 | 80 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Brackettville, Texas | 28.96 | 735.6 | 29.99 | 761.7 | 57 | 13.9 | 87 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 29.25 | 742.9 | 30.30 | 769.6 | — 2.2 | | 88 | E | 11 | 4.9 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Brownsville, Texas | 30.10 | 764.5 | 30.17 | 766.3 | 56 | 13.3 | 93 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 29.09 | 738.9 | 29.80 | 756.9 | 38 | 3.3 | 100 | S | 1 | 0.4 | ..... | ..... | 10n | ..... | SW | 0.30 | 7.6 | Light rain | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 50 | 10.0 | 58 | SW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.71 | 754.6 | 29.97 | 761.2 | 41 | 5.0 | 57 | SE | 6 | 2.7 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Cairo, Illinois | 29.76 | 755.9 | 30.16 | 766.1 | 48 | 8.9 | 63 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Grant, Arizona | 25.14 | 638.5 | 29.94 | 760.5 | 59 | 15.0 | 16 | S | ..... | ..... | 3 | ..... | 10n | ..... | S | 0.01 | 0.3 | Cloudy | |
| Camp Verde, Arizona | 26.69 | 677.9 | 30.18 | 766.6 | 44 | 6.7 | 45 | NW | ..... | ..... | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Campo, California | 27.25 | 692.1 | 29.82 | 757.4 | 37 | 2.8 | 90 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 29.86 | 758.4 | 29.87 | 758.7 | 59 | 15.0 | 94 | SW | 18 | 8.0 | ..... | 2k | 5s | SW | SW | 0 | 0 | Fair | |
| Cape Henry, Virginia | 29.75 | 755 6 | 29.78 | 756.4 | 57 | 13.9 | 81 | S | 13 | 5.8 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Cape Lookout, N. Carolina | 29.84 | 757.9 | 29.86 | 758.4 | 62 | 16.7 | 88 | SW | 21 | 9.4 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Hazy | |
| Cape May, New Jersey | 29.76 | 755.9 | 29.79 | 756.7 | 48 | 8.9 | 85 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | S | 0.48 | 12.2 | Threatening | |
| Charleston, South Carolina | 29.90 | 759.4 | 29.95 | 761.0 | 58 | 14.4 | 76 | SW | 3 | 1.3 | ..... | 8c;cs | Haze | SW | Calm | 0 | 0 | Fair | |
| Cheyenne, Wyoming | 24.11 | 612.4 | 30.05 | 763.3 | 30 | — 1.1 | 78 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.32 | 744.7 | 30.03 | 762.7 | 37 | 2.8 | 81 | N | 16 | 7.2 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Cincinnati Ohio | 29.27 | 743.4 | 29.92 | 760.0 | 45 | 7 2 | 68 | NW | 9 | 4.0 | ..... | ..... | 10ks | ..... | NW | Inap. | Inap. | Cloudy | |
| Cleveland, Ohio | 29.14 | 740.1 | 29.87 | 758.7 | 38 | 3.3 | 100 | W | 5 | 2.2 | ..... | ..... | 10n | ..... | Calm | 0.17 | 4.3 | Light rain | |
| Concho, Texas | 28.20 | 716.3 | 29.90 | 759.4 | 50 | 10.0 | 37 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.65 | 753.1 | 30.12 | 765.0 | 56 | 13.3 | 63 | N | 1 | 0.4 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Hazy | |
| Davenport, Iowa | 29.51 | 649.5 | 30.18 | 766.6 | 36 | 2.2 | 71 | N | 8 | 3.6 | ..... | 8k | 0 | N | ..... | 0 | 0 | Cloudy | |
| Deadwood, Dakota | 25.45 | 646.4 | ..... | ..... | 30 | — 1.1 | 78 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Denison, Texas | 29.36 | 745.7 | 30.17 | 766.3 | 52 | 11.1 | 60 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denver, Colorado | 24.85 | 631.2 | 30.07 | 763.8 | 37 | 2.8 | 63 | S | 4 | 1.8 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Detroit, Michigan | 29.16 | 740.7 | 29.84 | 757.9 | 39 | 3.9 | 82 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.11 | 2.8 | Cloudy | |
| Dodge City, Kansas | 27.57 | 700.3 | 29.93 | 760.2 | 39 | 3.9 | 64 | E | 6 | 2.7 | ..... | 2c | 2s | W | Calm | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.46 | 748.3 | 30.18 | 766.6 | 36 | 2.2 | 61 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Duluth, Minnesota | 29.81 | 752.1 | 30.33 | 770.4 | 26 | — 3.3 | 75 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eagle Pass, Texas | 29.36 | 745.7 | 30.12 | 765.0 | 54 | 12.2 | 87 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 29.97 | 761.2 | 30.04 | 763.0 | 37 | 2.8 | 75 | SW | 6 | 2.7 | ..... | 5k | 5s;hz | N | Calm | 0 | 0 | Cloudy | |
| Erie, Pennsylvania | 29.09 | 738.9 | 29.81 | 757.2 | 42 | 5.6 | 91 | SW | 2 | 0.9 | ..... | ..... | 10s | ..... | ..... | 0.22 | 5.6 | Cloudy | |
| Escanaba, Michigan | 29.46 | 748.3 | 30.14 | 765.5 | 31 | — 0.6 | 79 | N | 30 | 13.4 | ..... | ..... | 10s | ..... | N | 0.03 | 0.8 | Cloudy | |
| Florence, Arizona | 28.25 | 717.5 | 29.85 | 758.2 | 55 | 12.8 | 45 | Calm | ..... | ..... | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Fort Bayard, New Mexico | 24.16 | 613.6 | 30.16 | 766.1 | 47 | 8.3 | 48 | S | 2 | 0.9 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25 57 | 649.5 | ..... | ..... | 40 | 4.4 | 48 | Calm | 0 | 0 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Fort Gibson, Indian Ter | 29.83 | 752.6 | 30.19 | 766.8 | 42 | 5.6 | 66 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.85 | 732.8 | 30.15 | 765.8 | 47 | 8.3 | 48 | Calm | 0 | 0 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Fort St. Michael, Alaska | 29.64 | 752.8 | 29.68 | 753.9 | — 2 | —18.9 | 100 | SW | 5 | 2.2 | ..... | 0 | 5k | ..... | N | 0 | 0 | Fair | |
| Fort Sill, Indian Territory | 28.96 | 735 6 | 30.10 | 764.5 | 48 | 8.9 | 56 | N | 4 | 1.8 | ..... | 0 | 5s | ..... | W | 0 | 0 | Fair | |
| Galveston, Texas | 30.07 | 763.8 | 30.11 | 764.8 | 63 | 17.2 | 94 | W | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.32 | 744.7 | 29.98 | 761.5 | 39 | 3.9 | 82 | NE | 16 | 7.2 | ..... | ..... | 10s | ..... | ..... | 0.33 | 8.4 | Threatening | |
| Indianapolis, Indiana | 29.19 | 741.4 | 29 98 | 761.5 | 43 | 6.1 | 75 | NW | 9 | 4.0 | ..... | ..... | 10s | ..... | NW | Inap. | Inap. | Cloudy | |
| Indianola, Texas | 30.12 | 765.0 | 30.14 | 765.5 | 61 | 16.1 | 94 | W | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0.27 | 6.9 | Foggy | |
| Jacksboro, Texas | 29.01 | 736.8 | 30.14 | 765.5 | 56 | 13.3 | 46 | SE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 29.98 | 761.5 | 30.00 | 762.0 | 61 | 16.1 | 77 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Keokuk, Iowa | 29.51 | 749.5 | 30.15 | 765.8 | 38 | 3.3 | 72 | N | 8 | 3.6 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Key West, Florida | 29.85 | 758.2 | 29.88 | 758.9 | 68 | 20.0 | 84 | SE | 26 | 11.6 | ..... | 2kd | 8s | SE | W | 0.79 | 20.1 | Threatening | |
| Kittyhawk, North Carolina | 29.78 | 756.4 | 29.80 | 756.9 | 60 | 15.6 | 88 | SW | 11 | 4.9 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Knoxville, Tennessee | 29.02 | 737.1 | 30.04 | 763.0 | 45 | 7.2 | 92 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Crosse, Wisconsin | 29.43 | 747.5 | 30.20 | 767.1 | 34 | 1.1 | 70 | N | 13 | 5.8 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| La Mesilla, New Mexico | 26.14 | 663.9 | 30.29 | 769.4 | 38 | 3.3 | 63 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.70 | 754.4 | 30.05 | 763.3 | 60 | 15.6 | 88 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0.20 | 5.1 | Foggy | |
| Leavenworth, Kansas | 29.37 | 746.0 | 30.26 | 768.6 | 36 | 2.2 | 71 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.46 | 748.3 | 29.79 | 756.7 | 56 | 13.3 | 87 | NE | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.02 | 0.5 | Light rain | |
| Louisville, Kentucky | 29.44 | 747.8 | 30.00 | 762.0 | 45 | 7.2 | 61 | W | 8 | 3.6 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Lynchburg, Virginia | 29.17 | 740.9 | 29.84 | 757.9 | 52 | 11.1 | 41 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.46 | 748.3 | 30.19 | 766.8 | 31 | — 0.6 | 89 | NW | 12 | 5.4 | ..... | ..... | 10ks | ..... | NE | 0.78 | 19.8 | Cloudy | |
| Mason, Texas | 28.48 | 723.4 | 30.26 | 768.6 | 53 | 11.7 | 73 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.82 | 757.4 | 30.15 | 765.8 | 52 | 11.1 | 53 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.37 | 746.0 | 30.08 | 764.0 | 34 | 1.1 | 79 | NE | 17 | 7.6 | ..... | ..... | 10s | ..... | ..... | 0.02 | 0.5 | Cloudy | |
| Mobile, Alabama | 30.01 | 762.2 | 30.06 | 763.5 | 54.5 | 12.5 | 87 | N | 4 | 1.8 | ..... | 5c | Haze | W | Calm | 0 | 0 | Fair | |
| Montgomery, Alabama | 29.80 | 756.9 | 30.04 | 763.0 | 52 | 11.1 | 82 | NW | 3 | 1.3 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Morgantown, West Virginia | 28.79 | 731.3 | 29.85 | 758.2 | 43 | 6.1 | 83 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | SW | 0.09 | 2.3 | Threatening | |
| Mt. Washington, N. H. | 23.65 | 600.7 | 30.01 | 762.2 | 25 | — 3.9 | 63 | SE | 18 | 8.0 | ..... | 10s | 0 | SE | ..... | 0 | 0 | Cloudy | |
| Nashville, Tennessee | 29.55 | 750.6 | 30.10 | 764.5 | 44 | 6.7 | 68 | W | 4 | 1.8 | ..... | 0 | 8s | ..... | NW | 0 | 0 | Fair | |
| New Haven, Connecticut | 29.86 | 758.4 | 29.98 | 761.5 | 37 | 2.8 | 81 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| New London, Connecticut | 29.96 | 761.0 | 30.00 | 762.0 | 38 | 3.3 | 91 | NE | 4 | 1.8 | ..... | 0 | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| New Orleans, Louisiana | 29.99 | 761.7 | 30.05 | 763.3 | 61 | 16.1 | 88 | NW | 6 | 2.7 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Fair | |
| Newport, Rhode Island | 29.95 | 760.7 | 30.00 | 762.0 | 40 | 4.4 | 82 | E | 4 | 1.8 | ..... | ..... | 10ks | ..... | SE | 0 | 0 | Cloudy | |
| New York, New York | 29.75 | 755.6 | 29.93 | 760.2 | 40 | 4.4 | 100 | NE | 14 | 6.3 | ..... | ..... | 10n | ..... | E | 0.23 | 5.8 | Light rain | |
| Norfolk, Virginia | 29.77 | 756.1 | 29.83 | 757.7 | 56 | 13.3 | 100 | SW | 10 | 4.5 | ..... | ..... | 10n | ..... | Calm | 0.01 | 0.3 | Light rain | |
| North Platte, Nebraska | 27.30 | 693.4 | 30.00 | 762.0 | 31 | — 0.6 | 84 | E | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 29.76 | 755.9 | 29.80 | 756.9 | 41 | 5.0 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Dense fog | |
| Omaha, Nebraska | 29.13 | 739.9 | 30.26 | 768.6 | 33 | 0.6 | 79 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Oswego, New York | 29.55 | 750.6 | 29.87 | 758.7 | 45 | 7.2 | 68 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Pembina, Dakota | 29.45 | 748.0 | 30.32 | 770.1 | 26 | — 3.3 | 82 | SE | 9 | 4.0 | ..... | 2k | 5s | NW | Calm | 0 | 0 | Fair | |
| Philadelphia, Pennsylvania | 29.78 | 756.4 | 29.83 | 757.7 | 43 | 6.1 | 91 | E | 18 | 8.0 | ..... | ..... | 10n | ..... | SE | 0.64 | 16.3 | Light rain | |
| Phœnix, Arizona | 28.67 | 728.2 | 30.18 | 774.2 | 52 | 11.1 | 54 | E | ..... | ..... | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Pike's Peak, Colorado | 17.54 | 453.1 | 30.04 | 763.0 | 14 | —10.0 | 61 | NW | 27 | 12.1 | ..... | 8c | 0 | NW | ..... | 0 | 0 | Fair | |
| Pioche, Nevada | 23.95 | 608.3 | 29.72 | 754.9 | 43 | 6.1 | 43 | S | 4 | 1.8 | ..... | 8c | 2s | Calm | Calm | 0 | 0 | Cloudy | |
| Pittsburg, Pennsylvania | 29.01 | 736.8 | 29.82 | 757.4 | 43 | 6.1 | 83 | W | 7 | 3.1 | ..... | ..... | 10n | ..... | W | 0.26 | 6.6 | Light rain | |
| Port Huron, Michigan | 29.18 | 741.2 | 29.85 | 758.2 | 40 | 4.4 | 91 | N | 6 | 2.7 | ..... | ..... | 10ks | ..... | N | 0.08 | 2.0 | Cloudy | |
| Portland, Maine | 29.99 | 761.7 | 30.04 | 763.0 | 35 | 1.7 | 90 | SW | 5 | 2.2 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Portland, Oregon | 29.70 | 754.4 | 29.80 | 756.9 | 49 | 9.4 | 93 | NW | 8 | 3.6 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Prescott, Arizona | 24.71 | 627.6 | 30.07 | 763.8 | 36 | 2.2 | 53 | Calm | ..... | ..... | ..... | 8c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Punta Rassa, Florida | 29.96 | 761.0 | 29.98 | 761.5 | 63 | 17.2 | 83 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | SE | 0.14 | 3.6 | Cloudy | |
| Red Bluff, California | 29.41 | 747.0 | 29.76 | 755.9 | 52 | 11.1 | 86 | Calm | 0 | 0 | ..... | 2c | 1s | Calm | Calm | 0 | 0 | Fair | |
| Rochester, New York | 29.18 | 741.2 | 29.80 | 756.9 | 40 | 4.4 | 91 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | SE | 0.05 | 1.3 | Cloudy | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roseburg, Oregon | 29.29 | 741.7 | 29.76 | 755.9 | 48.5 | 9.2 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0.17 | 4.3 | Foggy | |
| Sacramento, California | 29.66 | 753.4 | 29.74 | 755.4 | 58 | 14.4 | 91 | Calm | 0 | 0 | ..... | 1c | 2s | SW | SW | 0 | 0 | Fair | |
| St. Louis, Missouri | 29.56 | 750.8 | 30.15 | 765.8 | 40 | 4.4 | 73 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Marks, Florida | 30.01 | 762.2 | 30.02 | 762.5 | 54 | 12.2 | 93 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| St. Paul, Minnesota | 29.30 | 746.5 | 30.26 | 768.6 | 31 | — 0.6 | 68 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.57 | 649.5 | 29.90 | 759.4 | 49 | 9.4 | 51 | SE | 1 | 0.4 | ..... | 2c | 2k | Calm | Calm | 0 | 0 | Fair | |
| San Antonio, Texas | 29.44 | 747.8 | 30.02 | 762.5 | 56 | 13.3 | 81 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| San Diego, California | 29.78 | 756.4 | 29.85 | 758.2 | 55 | 12.8 | 93 | E | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 29.18 | 741.2 | 29.86 | 758.4 | 42 | 5.6 | 83 | NW | 16 | 7.2 | ..... | ..... | 10s | ..... | W | 0.15 | 3.8 | Cloudy | |
| Sandy Hook, New Jersey | 29.88 | 758.9 | 29.90 | 759.4 | 42 | 5.6 | 91 | E | 21 | 9.4 | ..... | ..... | 10n | ..... | E | 0.36 | 9.1 | Light rain | |
| San Francisco, California | 29.71 | 754.6 | 29.77 | 756.1 | 53 | 11.7 | 93 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Santa Fé, New Mexico | 23.36 | 593.3 | 29.90 | 759.4 | 33 | 0.1 | 28 | E | 4 | 1.8 | ..... | 8es | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Savannah, Georgia | 29.87 | 758.7 | 29.96 | 761.0 | 60 | 15.6 | 65 | W | 4 | 1.8 | ..... | 5es | 2s;sm | W | Calm | 0 | 0 | Smoky | |
| Shreveport, Louisiana | 29.92 | 760.0 | 30.14 | 765.5 | 59 | 15.0 | 48 | NE | 5 | 2.2 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Hazy | |
| Smithville, North Carolina | 29.86 | 758.4 | 29.90 | 759.4 | 60 | 15.6 | 88 | SW | 12 | 5.4 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Springfield, Massachusetts | 29.81 | 757.2 | 29.94 | 760.5 | 38 | 3.3 | 72 | NE | 3 | 1.3 | ..... | ..... | 10ks | ..... | W | 0 | 0 | Cloudy | |
| Stockton, Texas | 27.08 | 687.8 | 30.08 | 764.0 | 46 | 7.8 | 33 | S | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass. | 30.01 | 762.2 | 30.06 | 763.5 | 39 | 3.9 | 82 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Toledo, Ohio, | 29.17 | 740.9 | 29.85 | 758.2 | 43 | 6.1 | 75 | NW | 4 | 1.8 | ..... | ..... | 10n | ..... | NW | 0.03 | 0.8 | Light rain | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 48 | 8.9 | 42 | Calm | ..... | ..... | ..... | 8k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Tybee Island, Georgia | 29.93 | 760.2 | 29.96 | 761.0 | 57 | 13.9 | 81 | W | 4 | 1.8 | ..... | 5c | Sm'e | W | Calm | 0 | 0 | Fair | |
| Umatilla, Oregon | 29.56 | 750.8 | ..... | ..... | 44 | 6.7 | 84 | SE | 4 | 1.8 | ..... | 0 | 2s | ..... | S | 0.23 | 5.8 | Clear | |
| Vicksburg, Mississippi | 29.88 | 758.9 | 30.14 | 765.5 | 59 | 15.0 | 82 | NE | 4 | 1.8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Hazy | |
| Virginia City, Montana | 24.25 | 615.9 | 29.73 | 755.1 | 40 | 4.4 | 48 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Visalia, California | 29.38 | 746.2 | 29.75 | 755.6 | 53 | 11.7 | 93 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Washington, D. C. | 29.72 | 754.9 | 29.84 | 757.9 | 46 | 7.8 | 92 | NW | 7 | 3.1 | ..... | 2ck | 2ks | SW | N | 0.05 | 1.3 | Clearing | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 40 | 4.4 | 56 | SW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 29.80 | 756.9 | 29.88 | 758.9 | 59 | 15.0 | 76 | SW | 12 | 5.4 | ..... | Haze | Haze | ..... | ..... | 0 | 0 | Hazy | |
| Winnemucca, Nevada | 25.50 | 647.7 | 29.86 | 758.4 | 32 | 0.0 | 79 | NE | 5 | 2.2 | ..... | 0 | 8s | ..... | Calm | 0 | 0 | Cloudy | |
| Wood's Holl, Mass. | 29.97 | 761.2 | 30.02 | 762.5 | 42 | 5.6 | 83 | SE | 6 | 2.7 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear | |
| Yankton, Dakota | 29.00 | 736.6 | 30.37 | 771.4 | 27 | — 2.8 | 82 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Yuma, Arizona | 29.60 | 751.8 | 29.76 | 755.9 | 60 | 15.6 | 44 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 29.85 | 758.2 | 29.91 | 759.7 | — 5.0 | —20.6 | 82 | N | 8 | 3.6 | ..... | 2c | 3s | NW | ..... | Inap. | Inap. | Cloudy | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 29.84 | 757.9 | 29.86 | 758.4 | 74 | 23.3 | 81 | SE | 1.2 | 0.5 | ..... | 8ck | 4n | SW | NW | 2.12 | 53.8 | Clearing | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.03 | 762.7 | 30.04 | 763.0 | 78 | 25.6 | 86 | Calm | 0 | 0 | ..... | 5c | 2s | SE | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.85 | 758.2 | 29.93 | 760.2 | 80.5 | 26.9 | ..... | E | 15 | 6.7 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | ..... | ..... | 30.01 | 762.2 | 77 | 25.0 | 95 | E | ..... | ..... | 3 | ..... | 10n | ..... | ..... | 2.190 | 55.63 | Heavy rain | C. J. Hering. |
| Batavia, Dutch Guiana, S. A. | 30.08 | 764.0 | 30.09 | 764.2 | 77.9 | 25.5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1.30 | 33. | Raining | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.28 | 640.8 | ..... | ..... | 69.5 | 20.8 | 85 | SW | ..... | ..... | 1 | ..... | 10s;0 | ..... | ..... | 0.44 | 11.2 | ..... | Thomas Herran |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medillin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 519 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,692 ft., or 821.6 m.; Concho, 1,780 ft., or 538.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,645 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.86 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.73 | 755.1 | 56 | 13.3 | 53 | 11.7 | 100 | W | 4 | 1.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Dense fog.... | |
| Navy Yard, Pensacola, Fla. | 30.16 | 766.1 | 57 | 13.9 | 59 | 15.0 | 88 | W | 1 | 0.4 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Navy Yard, Portsmouth, N.H. | 30.07 | 763.8 | 56 | 13.3 | 36 | 2.2 | 80 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy ..... | |
| Naval Hospital, Yokohama, Japan | 29.92* | 760.0* | 45 | 7.2 | 35 | 1.7 | 49 | NNW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Adams, Panama | 29.90 | 759.4 | 83 | 28.3 | 83 | 28.3 | 83 | NW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Alliance, Piraeus, Greece | 30.09‡ | 764.3‡ | ..... | ..... | 56 | 13.3 | 69 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Cloudy..... | |
| Ashuelot, Shanghai, China | 30.46* | 773.7* | 54 | 12.2 | 42 | 5.6 | 74 | NE | ..... | ..... | 1 | ..... | 1 | ..... | Calm | ..... | ..... | ..... | ..... | D. clouds.... | |
| Canonicus, New Orleans, La. | 30.04 | 763.0 | 47 | 8.3 | 61 | 16.1 | 94 | NNW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Colorado, New York, N. Y. | 29.90‡ | 759.4‡ | ..... | ..... | 40 | 4.4 | 91 | ESE | 6 | 2.7 | ..... | ..... | 10 | ..... | ESE | 0.24 | 6.1 | ..... | ..... | Raining..... | |
| Constitution, N. 46° 44′ W. 26° 46′ | 30.47‡ | 773.9‡ | ..... | ..... | 54 | 12.2 | 93 | S | ..... | ..... | 3 | ..... | 10 | ..... | SSE | ..... | ..... | Smooth | SSE | Overcast..... | |
| Despatch, Sulina, Bulgaria | 30.45 | 773.4 | 80 | 26.7 | 38 | 3.3 | 72 | ENE | ..... | ..... | 3 | ..... | 5 | ..... | NE | ..... | ..... | Smooth | ..... | Fair..... | |
| Enterprise, New Orleans, La. | 30.07‡ | 763.8‡ | ..... | ..... | 63 | 17.2 | 89 | NNW | ..... | ..... | 1 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Fair ..... | |
| Franklin, Norfolk, Va. | 29.79‡ | 756.7‡ | ..... | ..... | 57 | 13.9 | 81 | SSE | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | D clouds.... | |
| Gettysburg Valetta, Malta | 29.87‡ | 758.7‡ | ..... | ..... | 54 | 12.2 | ?? | E | ..... | ..... | 1 | ..... | 10 | ..... | Calm | Blank | Blank | ..... | ..... | Cloudy..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.16 | 766.1 | 74 | 23.3 | 73 | 22.8 | 67 | NE | ..... | ..... | 2 | ..... | 2 | ..... | NE | ..... | ..... | ..... | ..... | Clear ..... | |
| Marion, Smyrna, Turkey | 30.05 | 763.3 | 58 | 14.4 | 57 | 13.9 | 69 | WSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Smooth | SW | Cloudy..... | |
| Michigan, Erie, Pa. | 29.35 | 745.5 | 77 | 25.0 | 40 | 4.4 | 82 | W | ..... | ..... | 2 | ..... | 10 | ..... | W | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monongahela. Hong-Kong, China. | 30.28* | 769.1* | 60 | 15.6 | 60 | 15.6 | 82 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | Very light | Very light | ..... | ..... | Drizzling.... | |
| New Hampshire, Port Royal, S. C. | 30.11 | 764.8 | 63 | 17.2 | 61 | 16.1 | 66 | W | 7 | 3.1 | ..... | ..... | 8 | ..... | WSW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Omaha, N. 2° 50′, W. 33° 37′ | 30.08* | 764.0* | 84 | 28.9 | 82.5 | 28.1 | 81 | ENE | 3 | 1.3 | ..... | ..... | 2 | ..... | E | 0.84 | 21.3 | Mod'ate | NE | Bright..... | |
| Onward, Callao, Peru | 29.98† | 761.5† | ..... | ..... | 75 | 23.9 | 86 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, Vera Cruz, Mexico | 30.16‡ | 766.1‡ | ..... | ..... | 73 | 22.8 | 81 | NNW | ..... | ..... | 6 | ..... | 8 | ..... | NNW | ..... | ..... | Long | S | Threatening | |
| Palos, Shanghai, China | 30.48* | 774.2* | 60 | 15.6 | 41 | 5.0 | 74 | NNE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Pensacola, Honolulu, H. I. | 30.23 | 767.8 | 71 | 21.7 | 69 | 20.6 | 75 | NE | 13 | 5.8 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Plymouth. Norfolk, Va. | 29.84‡ | 757.9‡ | ..... | ..... | 57 | 13.9 | 87 | WSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Rainy ..... | |
| Powhatan, Havana, Cuba, W. I. | 29.93‡ | 760.2‡ | ..... | ..... | 72 | 22.2 | 95 | SE | 3.6 | 1.6 | ..... | ..... | 8 | ..... | SW | 0 | 0 | Smooth | ..... | Pleasant.... | |
| Ranger. Amoy, China | 30.42* | 772.7* | ..... | ..... | 58 | 14.4 | 58 | NE | ..... | ..... | 3 | ..... | 10 | ..... | N | ..... | ..... | ..... | ..... | D. clouds.... | |
| Rio Bravo, Brownsville, Texas | ..... | ..... | ..... | ..... | 56 | 13.3 | 100 | WNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Foggy ..... | |
| Santee, Annapolis, Md. | 29.86* | 758.4* | 60 | 15.6 | 45 | 7.2 | 92 | N | ..... | ..... | 1 | ..... | 7 | ..... | SW | 0.18 | 3.3 | ..... | ..... | Cloudy..... | |
| Saratoga, Washington, D. C. | 29.80* | 756.9* | ..... | ..... | 48 | 8.9 | 100 | N | ..... | ..... | 1 | ..... | 9 | ..... | Calm | Slight | Slight | ..... | ..... | Overcast.... | |
| St. Louis, League Island, Pa | 29.83 | 757.7 | 63 | 17.2 | 47 | 8.3 | ?? | NE | 14 | 6.3 | ..... | ..... | 10 | ..... | Calm | 0.7 | 18. | ..... | ..... | Rain & fog.. | |
| Supply, N. 50° 23′ W. 12° 01″ | 30.82 | 782.8 | 56 | 13.3 | 51 | 10.6 | 65 | S | ..... | ..... | 1 | ..... | 10 | ..... | NE | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Swatara, Savanilla, New Grenada | 29.94* | 760.5* | ..... | ..... | 82 | 27.8 | 87 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | |
| Tennessee, N. 5° 25′ 6″, E. 100° 19′ 45″ | 29.94* | 760.5* | 88 | 31.1 | 88 | 31.1 | 69 | W | 1 | 0.4 | ..... | ..... | 5 | ..... | E | 0 | 0 | Smooth | ..... | Hazy..... | |
| Trenton, Piraeus, Greece | 30.10‡ | 764.5‡ | ..... | ..... | 58 | 14.4 | 64 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0 | 0 | Smooth | ..... | Cloudy..... | |
| Tuscarora, N. 22° 45′ W. 110° 50′ | 29.96 | 761.0 | 71 | 21.7 | 70 | 21.1 | 85 | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |
| Vandalia, N. 57° 50′, E. 15° 58′ | 29.91‡ | 759.7‡ | ..... | ..... | 51 | 10.6 | 93 | NNE | ..... | ..... | 3 | ..... | 10 | ..... | NE | ..... | ..... | Mod'ate | NE | Squally ..... | |
| Wabash, Boston, Mass. | 30 03‡ | 762.7‡ | ..... | ..... | 43 | 6.1 | 67 | SSE | 4 | 1.8 | ..... | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Cloudy..... | |
| Wyoming, N. 48° 20′ W. 70° 38′ | 30.06* | 763.5* | ..... | ..... | 43 | 6.1 | 83 | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Smooth | ..... | D. clouds.... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | Character. | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, Hong-Kong, China | | | | | 56 | 13.3 | | ENE | | | 6 | | 10 | | NNE | | | Overcast | Capt. Maury. |
| S. S. Colima, N. 11° 56′, W. 91° 14′ | | | 29.87† | 758.7† | 84 | 28.9 | 87 | NNE | | | 2 | | 6 | | W | Easy mod'ate | NNW | Misty | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. †Aneroid.

**WHITE STAR LINE MARINE SERIES.**

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. S. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | |
| S. S. Celtic, N. 47° 22′, W. 38° 15′ | | | 29.87† | 758.7† | 53 | 11.7 | 93 | WNW | | | 6 | | 10 | WNW | | Strong son. | WSW | Misty | Capt. W. H. Thompson |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Aneroid.

**OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.**

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic | | | | | | | | | | | | | | | | | | | |
| S. S. Gaelic | | | | | | | | | | | | | | | | | | | |
| S. S. Oceanic, N. 34° 00′, E. 140° 00′ | | | 29.97† | 761.2† | 48 | 8.9 | ?? | NW | | | 5 | | k | | NW | Smooth | | Showery | Capt. John Metcalf. |
| | | | | | | | | | | | | | | | | | | | Capt. W. H. Kidley |
| | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid

**NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.**

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undutsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | Character | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois, N. 51° 40′, W. 8° 28′ | | | 30.76* | 781.3* | 49 | 9.4 | 93 | S | | | 2 | | 10 | | E | Smooth | | D. clouds | Captain Shackelford. |
| S. S. Indiana, N. 41° 01′ 45″, W. 57° 39′ 30″ | | | 30.16† | 766.1† | 43 | 6.1 | 100 | NNE | | | 3 | | 6 | | E | Light | NE | Partly cl'dy | Captain Sargent. |
| S. S. Ohio, N. 49° 00′, W. 31° 50′ | | | 30.04 | 763.0 | 54.5 | 12.5 | 90 | SSE | | | 6 | | 10 | | SSE | Rough | S | Light fog | Captain Morrison. |
| S. S. Pennsylvania, N. 40° 17′, W. 69° 39′ | | | 30.06 | 763.5 | 40 | 4.4 | 82 | S | | | 3 | | 2 | | S | Light | S | Clear | Captain Harris. |

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid †Aneroid; unreliable, corrected for elevation, instrumental error not known.

## RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland, N. 47° 22′, W. 26° 23′ | | | 30.47* | 773.9* | | | | SSE | 14 | 6.3 | | | 10 | | SE | Mod'ate | E | Cloudy | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |

*Aneroid; regulated to standard at Antwerp.

## ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Scandinavian | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

## MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller Crisfield, Md. | | | 29.73 | 755.1 | 56 | 13.3 | 75 | WSW | 10 | 4.5 | | | 8ks | | W | | | Cloudy | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.76 | 755.9 | —25 | —31.7 | 89* | WNW | 3 | 1.3 | | 8cs | 2ks | Calm | W | | | Cloudy | O. T. Sherman. |

Note.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Determined by use of hair hygrometer.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg$^{d}$.) Chief Signal Officer. U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 18, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

## ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | | | 30.17 | 766.4 | 59.9 | 15.5 | | NE | | | 6 | | 2 | | | | | | |
| Nemours | | | 30.20 | 767.0 | 51.8 | 11.0 | 58 | E | | | 3 | | 9 | | | 0.071 | 1.8 | Covered | Michel. |
| Algiers | | | 30.20 | 767.0 | 54.3 | 12.4 | 57 | ENE | | | 3 | | 7 | | | 0.067 | 1.7 | Very cloudy | Towillere. |
| La Calle | | | 30.18 | 766.5 | 50.0 | 10.0 | 69 | NE | | | 6 | | 6 | | | 0.04 | 1. | Cloudy | Boulangeot. |
| Tunis | | | 30.18 | 766.6 | 48.2 | 9.0 | 46 | NW | | | 6 | | 3 | | | 0.028 | 0.7 | Pretty fair. | Jaoques. |
| Sfax | | | 30.16 | 766.0 | 73.4 | 23.0 | | N | | | 6 | | 8 | | | 0 | 0 | Very cloudy | Gau. |
| Saida | | | 30.11 | 764.7 | 39.6 | 4.2 | 80 | NNE | | | 3 | | 5 | | | 0.677 | 17.2 | Cloudy | Herbin. |
| Tebessa | | | 30.12 | 765.1 | | | | N | | | 3 | | 4 | | | 0 | 0 | Cloudy | Bourgeois. |
| Geriville | | | 30.09 | 764.3 | 50.7 | 10.4 | 84 | SSE | | | 8 | | 8 | | | 0 | 0 | Very cloudy | Lemaillot. |
| Laghouat | | | 30.13 | 765.4 | 45.7 | 7.6 | 77 | ENE | | | 6 | | 8 | | | 0.39 | 10. | Very cloudy | Guyot. |
| Biskra | | | 30.17 | 766.4 | 66.7 | 19.3 | 79 | NNE | | | 1 | | 2 | | | 0 | 0 | Fair | Chanvaux. |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

## AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.48 | 748.7 | 30.05 | 763.2 | 37.4 | 3.0 | 57 | NE | | | 6 | | 3 | | | 0 | 0 | | Prof. Ivan Stosir |
| Cracow, I. R. Observatory | 29.31 | 744.4 | 30.11 | 764.8 | 31.6 | — 0.2 | 89 | NE | | | 1 | | 0 | | | 0 | 0 | | Dr. Wierzbiski. |
| Eperies | 29.10 | 739.1 | 30.02 | 762.5 | 32.4 | 0.2 | 60 | N | | | 3 | | 5cs | | | 0 | 0 | | Julius Mikolik. |
| Gratz | 28.78 | 730.9 | 30.07 | 763.8 | 36.5 | 2.5 | 73 | ENE | | | 3 | | 3 | | | 0.065 | 1.65 | | Andreas Rospini. |
| Hermannstadt | 28.38 | 720.9 | 29.86 | 758.5 | 32.7 | 0.4 | 85 | ESE | | | 1 | | 10 | | | 0.059 | 1.50 | Snowing | Prof. Reissenberg |
| Kremsmünster | 28.68 | 728.5 | 30.12 | 765.1 | 33.4 | 0.8 | 92 | W | | | 1 | | 10 | | | 0.532 | 13.5 | | Prof. C. Wagner |
| Lemberg | 29.01 | 736.8 | 30.04 | 763.0 | 32.0 | 0.0 | 89 | SE | | | 1 | | 8 | | | 0 | 0 | | Dr. T. Stanecki. |
| Pola | 29.93 | 760.1 | 30.04 | 763.0 | 41.9 | 5.5 | 28 | NNW | | | 3 | | 10s | | | 0 | 0 | | I.R.Hydrographic Office |
| Szathmar | | | | | | | | | | | | | | | | | | | Johann Tamas, S. J. |
| Szegedin | | | | | | | | | | | | | | | | | | | Karl Stancel. |
| Trieste | 29.63 | 752.5 | 29.92 | 759.9 | 32.5 | 1.3 | 83 | N | | | 2 | | 10 | | | 0 | 0 | | P. Busin. |
| Vienna | 30.00 | 761.9 | 30.10 | 764.5 | 39.9 | 4.4 | 56 | E | | | 1 | | 7 | | | 0 | 0 | | I. R. Central Met. Obs'y. |
| | 29.35 | 745.5 | 30.10 | 764.5 | 34.0 | 1.1 | 62 | NW | | | 1 | | 2 | | | 0 | 0 | | |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

## BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.74 | 730.1 | 30.30 | 769.7 | 39.6 | 4.2 | 74 | WSW | | | 0 | | 10 | | | 0.071 | 1.8 | | Prof. M. Passau. |
| Brussels | 30.04 | 762.9 | 30.24 | 768.2 | 42.6 | 5.9 | 94 | W | | | 1 | | 10 | | WSW | 0.453 | 11.5 | Raining | Royal Observatory. |
| Furnes | 30.26 | 768.6 | 30.28 | 769.0 | 48.2 | 9.0 | 95 | WNW | | | 2 | | 10 | | | 0.122 | 3.1 | Light fog | M. E. de Cae. |
| Maeseyck | 30.09 | 764.2 | 30.21 | 767.4 | 40.6 | 4.8 | 95 | WSW | | | 2 | | 1 | | | 0.311 | 7.9 | Raining | M. Pierrot. |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 ? set. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. (1—10. | Clouds. Amount. Up'er (1—10. | Clouds. Amount. Low'r (1—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.05 | 763.3 | 30.15 | 765.8 | 53.2 | 11.8 | ..... | WNW | 36 | 16.1 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | Overcast..... | W. Boswell. |
| Ardrossan | 30.31 | 769.9 | 30.33 | 770.4 | 49 | 9.4 | ..... | WNW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | Overcast..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.46 | 773.7 | 50.2 | 10.1 | ..... | NW | 12 | 5.4 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | S. Call, for Dr. Robinson. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.34 | 770.6 | 48.0 | 8.9 | ..... | W | 34 | 15.2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 30.52 | 775.2 | 56.8 | 13.8 | ..... | NW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds..... | J. Dreyer. |
| Bradford, Yorkshire | 29.85 | 758.2 | 30.24 | 768.1 | 53.0 | 11.7 | ..... | W | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0 | 0 | Blue sky..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.97 | 761.2 | 30.00 | 762.0 | 84.5 | 29.2 | ..... | NE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 30.25 | 768.3 | 54.0 | 12.2 | ..... | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | H. Todd. [H.C. |
| Cardington | ..... | ..... | 30.29 | 769.4 | 54.0 | 12.2 | ..... | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John McLaren. |
| Chatham, School M. E. | 30.16 | 766.1 | 30.29 | 769.4 | 51.2 | 10.7 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Lt. W. G. Morris, R. E. |
| Dartmoor | 29.00 | 736.6 | 30.52 | 775.2 | 43.0 | 6.1 | ..... | NE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | Gloomy..... | Alexander Watt. |
| Donaghadee | 30.37 | 771.4 | 30.40 | 772.1 | 51 | 10.6 | ..... | NW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 30.25 | 768.3 | 30.28 | 769.1 | 52 | 11.1 | ..... | NW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | Gloomy..... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 30.31 | 769.9 | 49.2 | 9.6 | ..... | N | 7.2 | 3.2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Squally..... | Thomas Mackereth. |
| Falmouth, Observatory | 30.29 | 769.4 | 30.52 | 775.2 | 52.3 | 11.3 | ..... | NW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy ..... | The Staff. |
| Fort Napier, (Natal) | 27.52 | 699 0 | 29.73 | 755.1 | 75.8 | 24.3 | ..... | E | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.65 | 753.1 | 29.88 | 758.9 | 87 | 30.6 | ..... | NW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's College | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.19 | 766.8 | 30.25 | 768.3 | 57.2 | 14.0 | ..... | E | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Corpl. C. Aitken, A.H.C. |
| Glasgow, Observatory | 30.08 | 764.0 | 30.28 | 769.1 | 50.4 | 10.2 | ..... | WSW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy..... | D. G. Maclean. |
| Great Yarmouth | 30.21 | 767.3 | 30.21 | 767.3 | 49 | 9.4 | ..... | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Foggy ..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 30.12 | 765.0 | 30.30 | 769.6 | 52.0 | 11.1 | ..... | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | The Staff, for G. B. Airy. |
| Guernsey | 30.20 | 767.1 | 30.42 | 772.7 | 52 | 11.1 | ..... | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 30.45 | 773.4 | 54 | 12.2 | ..... | NW | ..... | ..... | 3 | ..... | 4c | ..... | ..... | 0 | 0 | Fine..... | M. P. Moyle. |
| Holyhead | 30.36 | 771.1 | 30.41 | 772.4 | 50 | 10.0 | ..... | NW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | John Tilston. |
| Jersey | 30.17 | 766.3 | 30.47 | 773.9 | 50.5 | 10.3 | ..... | NW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | Blank | Blank | Gloomy..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 30.33 | 770.4 | 50.6 | 10.3 | ..... | WNW | 15 | 6.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | The Staff. |
| Kingstown | 30.44 | 773.2 | 30.47 | 773.9 | 52 | 11.1 | ..... | NNW | ..... | ..... | 5 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 30.29 | 769.4 | 53.0 | 11.7 | ..... | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.97 | 761.2 | 30.04 | 763.0 | 53.0 | 11.7 | ..... | NW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Sgt. Fred. Travis, A. H. |
| Nairn | 30.12 | 765.0 | 30.21 | 767.3 | 53 | 11.7 | ..... | W | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | ¾ clouded.. | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 29.86 | 758.4 | 72.5 | 22.5 | ..... | W | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 30.05 | 764.0 | 30.28 | 769.1 | 55.1 | 12.8 | ..... | WNW | ..... | ..... | 6 | ..... | 3ck | ..... | N | 0 | 0 | D. clouds..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.78 | 756.4 | 30.31 | 769.9 | 51.2 | 10.7 | ..... | NW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.32 | 770.1 | 53 | 11.7 | ..... | WNW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Mr. Lucas. |
| Plymouth | 30.39 | 771.9 | 30.47 | 773.9 | 55.5 | 13.1 | ..... | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Merrifield. |
| Roche's Point | 30.51 | 774.9 | 30.55 | 776.0 | 51 | 10.6 | ..... | NW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Cloudy ..... | W. Kennedy. |
| Saint Ann's Head | 30.32 | 770.1 | 30.48 | 774.2 | 50 | 10.0 | ..... | NW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | John C. Walker. |
| Sandwick Manse, (Orkneys.) | ..... | ..... | 30.13 | 765.3 | 48 | 8.9 | ..... | NW | 29 | 13.0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling..... | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.57 | 751.1 | 48.8 | 9.3 | ..... | E | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Showery..... | Sergt. W. H. Lyne. |
| Sheffield | 30.00 | 762.0 | 30.28 | 769.1 | 56.3 | 13.5 | ..... | WNW | ..... | ..... | 5 | ..... | 7 | ..... | ..... | 0 | 0 | Overcast..... | W. F. Cooper. |
| Siloth Rectory | 30.26 | 768.6 | 30.29 | 769.4 | 59.7 | 15.4 | 64 | SW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | D. clouds..... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.90 | 759.4 | 30.30 | 769.6 | 49.7 | 9.8 | ..... | W | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. S. J. Perry. |
| Stonorway, Lews C., (Hebr.) | ..... | ..... | 30.20 | 767.1 | 50 | 10.0 | ..... | W | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded... | John Sutherland. |
| Stratfield Turgiss | 30.14 | 765.5 | 30.36 | 771.1 | 52.7 | 11.5 | ..... | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Squally..... | Rev. C. H. Griffith, F.M.S |
| Thurso | ..... | ..... | 30.14 | 765.5 | 48 | 8.9 | ..... | WNW | ..... | ..... | 5 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 30.50 | 774.7 | 55 | 12.8 | ..... | NW | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.. | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 30.55 | 776.0 | 51.4 | 10.8 | ..... | NW | 12 | 5.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | The Staff. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.04 | 763.0 | 65.0 | 18.3 | 77 | NW | ..... | ..... | 3 | ..... | 5k | ..... | ..... | 0 | 0 | ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.79 | 756.7 | 29.98 | 761.4 | 84.5 | 29.2 | 64 | ESE | 16.0 | 7.2 | ..... | 1 | 2 | ..... | ESE | 0 | 0 | Fine; squally | C. Meldrum. |
| Melbourne, Observatory | 30.15 | 765.8 | 30.24 | 768.1 | 56.0 | 13.3 | 70 | SE | 8 | 3.6 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Dull ..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1, 400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m.

| MARINE SERIES. VESSELS. | Sea or swell: Height scale 0—9 | Sea or swell: Direction from— | Weather. | Observer. |
|---|---|---|---|---|
| S. S. Algeria, N. 46° 54', W. 41° 46' | 5* | NW | D. clouds..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | Capt. C. C. Prehn. [R. |
| S. S. Peruvian | ..... | ..... | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire | ..... | ..... | ..... | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING Co 220 DEVONSHIRE ST BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | OBSERVER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.22 | 666.0 | | | 71.2 | 21.8 | 84 | NE | | | 3 | 2d | 6n | E | E | Inap. | Inap. | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.71 | 754.7 | 29.76 | 755.9 | 44.4 | 6.9 | 81 | NW | | | 2 | | 10 | | | | | | |
| Fanöe | 29.81 | 757.2 | 29.83 | 757.7 | 41.9 | 5.5 | 97 | W | | | 4 | | 10 | | | | | Raining | |
| Godthaab, (Greenland) | 29.65 | 753.2 | 29.70 | 754.3 | 12.9 | —10.6 | | WSW | | | 6 | | 10 | | | | | Snowing | |
| Stykkisholm, (Iceland) | 29.75 | 755.6 | 29.79 | 756.7 | 44.1 | 6.7 | 98 | S | | | 6 | | 10 | | | | | Raining | |
| Thorshavn, (Faröe) | 30.03 | 762.7 | 30.07 | 763.6 | 48.9 | 9.4 | 83 | W | | | 2 | | 10 | | | | | | |
| Vestervig | 29.55 | 750.6 | 29.72 | 754.9 | 42.4 | 5.8 | 100 | W | | | 6 | | 10 | | | | | Foggy | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.03 | 760.3 | 30.48 | 774.3 | 44.6 | 7 | 81 | N | | | 4 | | 8 | | | 0 | 0 | Very cloudy | Collignon, Director. |
| Amiens, Normal School | 30.21 | 767.4 | 30.33 | 770.3 | 50.7 | 10.4 | 80 | WNW | | | 2 | | 5 | | W | 0 | 0 | Cloudy | Bonvarne, Director. |
| Avignon, Normal School | 30.12 | 765.0 | 30.20 | 767.0 | 46.0 | 7.8 | 42 | N | | | 8 | | 10 | | N | 0 | 0 | Lightly cov'd | Mr. Giraud, Director |
| Bar-sur-Seine | 29.77 | 756.2 | 30.35 | 771.0 | 38.7 | 3.7 | 82 | SSW | | | 1 | | 10 | | | 0 | 0 | Covered | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 51.1 | 10.6 | 60 | NW | | | 1 | | 10 | | NW | 0 | 0 | Covered | Normal School. |
| Besançon | 29.47 | 748.5 | 30.41 | 772.3 | 37.0 | 2.8 | | S | | | 2 | | 8 | | SW | 0 | 0 | Very cloudy | Normal School. |
| Bourg-en-Bresse | 29.51 | 749.5 | 30.43 | 772.9 | 38.1 | 3.4 | 97 | N | | | 1 | | 10n | | N | 0 | 0 | Covered | Normal School. |
| Bourges, Normal School | 29.83 | 757.6 | 30.39 | 772.0 | 48.2 | 9 | 89 | SW | | | 1 | | 5 | | S | 0 | 0 | Cloudy | A. Wagner, Director. |
| Brest, Naval Observatory | 30.23 | 767.7 | 30.44 | 773.2 | 49.8 | 9.9 | 79 | NNW | | | 2 | | 10 | | NNW | 0 | 0 | Misty | The Staff. |
| Carcassonne, Normal School | 30.01 | 762.2 | 30.44 | 773.1 | 47.3 | 8.5 | 63 | W | | | 4 | | 2 | | NW | 0 | 0 | Slightly cl'dy | Vateau, Director. |
| Caen | 30.50 | 774.6 | 30.57 | 776.5 | 50.0 | 11.1 | 71 | NW | | | 6 | | 5 | | N | 0.024 | 0.6 | Cloudy | Normal School. |
| Chartres, Normal School | 29.71 | 754.7 | 30.29 | 769.8 | 52.7 | 11.5 | 80 | NNW | | | 4 | | 10 | | | 0.059 | 1.5 | Covered | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 30.00 | 761.9 | 30.33 | 770.3 | 42.8 | 6.0 | 85 | Calm | | | 0 | | 10n | | | 0 | 0 | Covered | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs. | 28.90 | 736.3 | 30.40 | 772.1 | 40.3 | 4.6 | 47 | N | | | 2 | | 10 | | N | 0 | 0 | Covered | Alluard, Director. |
| Commercy, Normal School | 29.42 | 747.2 | 30.33 | 770.4 | 40.6 | 4.8 | 69 | NW | | | 2 | | 10 | | NW | 0 | 0 | Covered | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.97 | 735.7 | 30.11 | 764.8 | 52.7 | 11.5 | 34 | W | | | 2 | | 5 | | W | 0 | 0 | ½ covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 30.26 | 768.6 | 30.44 | 773.2 | 45.7 | 7.6 | 76 | NW | | | 2 | | 10 | | | 0 | 0 | Covered | Mouillot, Director. |
| Le Mans, Normal School | 30.12 | 765.0 | 30.44 | 773.1 | 47.5 | 8.6 | 67 | NE | | | 4 | | 2 | | NE | 0 | 0 | Slightly cl'dy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.37 | 746.1 | 30.32 | 770.2 | 37.9 | 3.3 | 87 | W | | | 2 | | 10 | | W | 0.031 | 0.80 | Snowing | Voudez, Director. |
| Lorient, Naval Observatory | 30.40 | 772.2 | 30.50 | 774.7 | 52.2 | 11.2 | 75 | NW | | | 3 | | 8 | | NW | 0 | 0 | ¾ covered | T. Carré, Director. |
| Mâcon, Normal School | 29.68 | 753.8 | 30.39 | 771.9 | 38.8 | 3.8 | 67 | N | | | 2 | | 5 | | | 0.102 | 2.6 | Cloudy | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | 29.26 | 743.3 | 30.35 | 770.9 | 39.6 | 4.2 | 77 | NNE | | | 2 | | 10 | | SSW | 0 | 0 | Covered | Normal School. |
| Nismes, Normal School | 29.98 | 761.6 | 30.15 | 765.9 | 49.3 | 9.6 | 25 | N | | | 8 | | 2 | | N | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Orleans, Normal School | 29.99 | 761.8 | 30.38 | 771.7 | 49.3 | 9.6 | 56 | NW | | | 1 | | 8 | | NW | 0 | 0 | Very cloudy | Bernard, Director. |
| Paris, Observatory | 30.10 | 764.4 | 30.34 | 770.6 | 49.6 | 9.8 | 61 | WNW | | | 1 | | 10 | | NW | 0 | 0 | Misty | National Observatory. |
| Privas | 29.21 | 741.8 | 30.31 | 769.9 | 42.8 | 6 | 87 | N | | | 6 | | 5 | | S | 0 | 0 | Cloudy | Normal School |
| Puy de Dome (Summit) | | | | | | | | | | | | | | | | | | | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.46 | 773.6 | 30.49 | 774.4 | 47.3 | 8.5 | 83 | W | | | 1 | | | | W | 0 | 0 | Misty | Lt. Decante, Director. |
| Rouen, Normal School | 30.28 | 769.0 | 30.36 | 771.2 | 51.4 | 10.8 | 73 | NW | | | 2 | | 5 | | NW | 0 | 0 | Cloudy | F. Lucard, Director. |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | M. H. Hercouet. |
| Tarbes, Normal School | 29.37 | 745.9 | 30.48 | 774.2 | 47.3 | 8.5 | 67 | WSW | | | 2 | | 0 | | | 0 | 0 | Clear | T. Hugues, Director. |
| Villefranche | 29.66 | 753.4 | 30.41 | 772.3 | 41.9 | 5.5 | 92 | NNW | | | 2 | | 10 | | NE | 0 | 0 | Covered | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.83 | 757.6 | 29.85 | 758.3 | 80.6 | 27 | | | | | | | | | | 0 | 0 | | L'Abbé Marchési |
| Lyons | | | 30.39 | 771.8 | 41.0 | 5.0 | | | | | | | 9 | | | 0.08 | 2. | | M. Jeys. |
| Marseilles, Observatory | | | 30.08 | 764.0 | 52.7 | 11.5 | 42 | NW | | | 2-3 | | 4 | | | 0 | 0 | Cloudy | The Staff. |
| Mont-Louis | 24.98 | 634.4 | 30.29 | 769.4 | 32.4 | 0.2 | 43 | N | 14.9 | 6.66 | | | 1 | | NNE | 0 | 0 | | Mr. Falguère. |
| Nice | 29.99 | 761.8 | 30.07 | 763.8 | 54.1 | 12.3 | 42 | S | | | 2 | | 1 | | WSW | 0 | 0 | Clear | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 30.05 | 763.3 | 30.33 | 770.3 | 49.6 | 9.8 | 64 | NW | | | 3 | | 9 | | NW | 0 | 0 | | Marié Davy, Director |
| Perpignan | | | 30.29 | 769.4 | 50.2 | 10.1 | 33 | NW | 29.8 | 13.33 | | | 0 | | | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.59 | 573.8 | | | 20.8 | — 6.2 | | NW | | | 2 | | 0 | | | 0 | 0 | Clear | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 30.17 | 766.3 | 30.34 | 770.5 | 49.6 | 9.8 | 66 | NW | | | 1 | | 10 | | NW | 0.035 | 0.9 | Covered | E. Renou. |
| Toulouse, Observatory | 29.74 | 755.5 | 30.48 | 774.1 | 41.9 | 5.5 | 49 | NW | | | 4 | | 9 | | | 0 | 0 | | The Staff. |
| Tours | 30.20 | 767.0 | 30.39 | 772.0 | 47.8 | 8.8 | 73 | NNW | | | 1 | | 10 | | N | 0 | 0 | | C. Marquet. |
| Versailles, (near Paris) | | | 30.32 | 770.0 | 50.7 | 10.4 | 62 | NW | | | 1 | | 9 | | | 0 | 0 | Vapory | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.26 | 768.6 | 30.28 | 769.2 | 39.7 | 4.3 | 87 | SE | 8.3 | 3.7 | | | 0 | | | 0 | 0 | Clear | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 29.82 | 757.4 | 30.00 | 762.0 | 41.2 | 5.1 | 90 | SW | | | 1 | | 10 | | | 0.067 | 1.70 | Raining | Prof. Arndt. |
| Breslau | 29.52 | 749.8 | 30.05 | 763.3 | 34.5 | 1.4 | 72 | SSE | | | 3 | | 10 | N | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.82 | 757.4 | 30.27 | 768.8 | 37.6 | 3.1 | 83 | SW | | | 2 | | 10 | | | 0.185 | 4.7 | | Albert Senz. |
| Cassel | 29.56 | 750.7 | 30.17 | 766.2 | 40.3 | 4.6 | 87 | SE | | | 1 | | 10 | NW | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 30.01 | 762.2 | 30.17 | 766.3 | 40.6 | 4.8 | 92 | W | | | 2 | | 10 | | | 0.12 | 3. | Raining | Director Lose. |
| Emden | 30.07 | 763.8 | 30.11 | 764.7 | 42.3 | 5.7 | 98 | W | | | 3 | | 10 | | | 0 | 0 | | Prof. Prestel. |
| Frankfort on the Main | 29.88 | 759.0 | 30.26 | 768.6 | 43.0 | 6.1 | 67 | W | | | 1 | | 10 | | | 0.091 | 2.3 | Raining | Physical Society. |
| Friedrichshafen | 28.81 | 731.7 | 30.31 | 769.9 | 36.0 | 2.2 | 89 | WSW | | | 6 | | 10 | W | | 0.177 | 4.5 | | M. Wilhelm. |
| Hamburg | 29.91 | 759.6 | 29.98 | 761.4 | 43.2 | 6.2 | 91 | WNW | | | 4 | | 10 | | | 0.067 | 1.7 | Light rain | Captain F. Hegemann. |
| Kiel | 29.97 | 761.2 | 29.98 | 761.6 | 44.6 | 7.0 | 89 | W | | | 4 | | 10 | | | 0.040 | 1.02 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.81 | 757.2 | 29.89 | 759.2 | 33.8 | 1.0 | 83 | SW | | | | | | | | 0.004 | 0.11 | Snowing | Prof. E. Luther. |
| Köslin | | | 29.88 | 758.9 | 35.2 | 1.8 | | SW | | | 4 | | 8 | | | 0.134 | 3.4 | | H. Müller. |
| Leipsic, Observatory | 29.67 | 753.5 | 30.11 | 764.7 | 36.0 | 2.2 | 100 | SW | | | 3 | | 10 | | | 0.256 | 6.5 | Rain & fog | Prof. Bruhns. |
| Memel, Naval School | 29.82 | 757.3 | 29.86 | 758.5 | 34.7 | 1.5 | 93 | SW | | | 7 | | 10n | | | | | Snowing | Reinbrech von Skalweit. |
| Neufahrwasser | 29.91 | 759.6 | 29.92 | 760.0 | 37.4 | 3.0 | 79 | SW | | | 3 | | 10 | | | 0.008 | 0.2 | | A. Lothes. |
| Posen | 29.78 | 756.4 | 30.08 | 764.0 | 36.7 | 2.6 | 81 | SW | | | 3–4 | | 10 | | | 0 | 0 | Cloudy | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.76 | 756.0 | 30.34 | 770.6 | 37.2 | 2.9 | 89 | SW | | | 1 | | 10 | | | 0.391 | 9.93 | Raining | Dr. Schur. |
| Stuttgart | 29.26 | 743.1 | 30.24 | 768.0 | 38.3 | 3.5 | 72 | W | | | 1 | | 10 | | | 0.110 | 2.8 | Raining | Prof. Schoder. |
| Treves, (Trier) | 29.64 | 752.9 | 30.17 | 766.2 | 45.1 | 7.3 | 53 | W | | | 5 | | 10 | | | 0.146 | 3.70 | Foggy | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.63 | 727.3 | 30.21 | 767.2 | 35.8 | 2.1 | 91 | WNW | 2 | 1 | | | 10 | | | 0.386 | 9.8 | Foggy | Dr. Von Bebber. |
| Wustrow, Naval School | 29.90 | 759.4 | 29.95 | 760.7 | 39.4 | 4.1 | 98 | WSW | | | 1 | | 10 | | | 0 | 0 | Covered | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Orefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.19 | 741.3 | 29.58 | 751.2 | 61.2 | 16.2 | | SW | | | 3.0 | | | | | | | ⅛ clear | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.89 | 759.2 | 29.94 | 760.5 | 84.2 | 29.0 | 32 | WSW | 20.0? | 8.9? | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.43 | 747.6 | 29.90 | 759.5 | 90.0 | 32.2 | 13 | NNE | | | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.82 | 757.5 | 29.86 | 758.4 | 82.6 | 28.1 | 69 | NW | 15.0 | 6.7 | | | 0 | | | 0 | 0 | Misty | |
| Poona | 27.81 | 706.3 | 29.76 | 756.0 | 89.9 | 33.2 | 27 | NNE | | | | | 1 | | | 0 | 0 | Dust-whirl | |
| Lahore | 29.22 | 742.2 | 29.97 | 761.3 | 76.9 | 24.9 | 30 | NW | 3.0 | 1.3 | | | 2 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.34 | 694.5 | 29.84 | 757.9 | 85.4 | 29.7 | 53 | W | 12.0 | 5.4 | | | 2 | | | 0 | 0 | D. clouds | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 29.02 | 737.0 | 29.93 | 760.2 | 73.8 | 23.2 | 41 | NW | 2.0 | 0.9 | | | | | | 0 | 0 | | |
| Agra | 29.36 | 745.8 | 29.93 | 760.1 | 81.7 | 27.6 | 21 | NE | | | | | | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.75 | 730.2 | 29.76 | 755.9 | 96.5 | 35.8 | 18 | W | 2.8 | 1.2 | | | 5 | | E | 0 | 0 | D. clouds | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.53 | 750.1 | 29.91 | 759.6 | 80.3 | 26.8 | 52 | NW | 5.0 | 2.2 | | | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.56 | 750.7 | 29.87 | 758.6 | 83.5 | 28.6 | 47 | Calm | 2.1 | 0.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.64 | 752.7 | 29.82 | 757.3 | 84.6 | 29.2 | 31 | W | 1.2 | 0.5 | | | 2 | W | W | 0 | 0 | | |
| Hazaribagh | 27.82 | 706.6 | 29.84 | 758.0 | 74.8 | 23.8 | 66 | ESE | 8.2 | 3.7 | | | 10 | | | | | Thunder-storm | |
| Cuttack | 29.79 | 756.6 | 29.87 | 758.6 | 84.5 | 29.2 | 64 | S | 5.8 | 2.6 | | | 10 | | | 0 | 0 | Overcast | |
| Calcutta (Alipore) | 29.83 | 757.6 | 29.85 | 758.2 | 81.6 | 27.6 | 69 | SW | 7.0 | 3.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.42 | 747.3 | 29.81 | 757.2 | 78.6 | 25.9 | 58 | SSW | 1.2 | 0.5 | | | 1 | | W | 0 | 0 | D. clouds | |
| Chittagong | 29.90 | 759.6 | 30.00 | 761.9 | 79.9 | 26.6 | 78 | WSW | 3.7 | 1.6 | | | 4 | | | 0 | 0 | Misty | |
| Sibsagar | 29.53 | 750.1 | 29.87 | 758.8 | 71.8 | 22.1 | 81 | ESE | 2.0 | 0.9 | | | 8 | W | W | 0 | 0 | D. clouds | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.51 | 724.1 | 29.86 | 758.4 | 87.0 | 30.6 | 32 | NW | 4.5 | 2.0 | | | | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.63 | 752.5 | 30.05 | 763.2 | 40.5 | 4.7 | 28 | SW | 0.7 | 0.3 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 29.93 | 760.2 | 30.04 | 763.1 | 42.3 | 5.7 | 28 | SW | 2.5 | 1.1 | ..... | ..... | 1 | N | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.84 | 757.9 | 30.04 | 762.9 | 43.0 | 6.1 | 35 | SE | 1.8 | 0.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.67 | 728.2 | 30.01 | 762.3 | 46.0 | 7.8 | 23 | SW | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.51 | 749.6 | 30.05 | 763.2 | 49.8 | 9.9 | ..... | ENE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.11 | 739.3 | 30.03 | 762.8 | 50.9 | 10.5 | 24 | SSE | 3 1 | 1.4 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 28.98 | 713.1 | 30.02 | 762.6 | 49.8 | 9.9 | 19 | E | ..... | ..... | 1 | ..... | 1 | N | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.83 | 757.6 | 30.06 | 763.4 | 51.1 | 10.6 | 27 | SW | ..... | ..... | 6 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.89 | 759.3 | 30.07 | 763.7 | 52.3 | 11.3 | 34 | SW | 4.3 | 1.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.73 | 755.2 | 30.06 | 763.5 | 49.1 | 9.5 | 30 | NW | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.79 | 756.7 | 30.06 | 763.4 | 45.5 | 7.5 | 25 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 30.01 | 762 2 | 30.10 | 764.4 | 45.7 | 7.6 | 51 | W | 1.6 | 0.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 30.05 | 763.3 | 30.10 | 764.6 | 40.1 | 4.5 | 66 | NNW | 6.3 | 2.8 | ..... | ..... | 1 | NNW | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.48 | 723.4 | 30.09 | 764.3 | 37.0 | 2.8 | 54 | N | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.96 | 761.0 | 30.08 | 763.9 | 50.4 | 10.2 | 38 | NNW | ..... | ..... | 4 | ..... | 2 | NW | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.88 | 759.0 | 30.07 | 763.6 | 44.6 | 7.0 | 44 | N | 18.1 | 8.1 | ..... | ..... | 0 | ..... | ..... | 0.024 | 0.6 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U. | 29.81 | 757.2 | 30.02 | 762.4 | 45.3 | 7.4 | 19 | NNE | ..... | ..... | 6 | ..... | 4 | N | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 38.8 | 3.8 | 80 | WNW | 24.8 | 11.1 | ..... | ..... | 8 | N | ..... | 0.287 | 7.3 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.95 | 760.8 | 30.15 | 765.8 | 50.4 | 10.2 | 48 | NW | ..... | ..... | 2 | ..... | 1 | N | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.01 | 736.9 | 29.92 | 759.9 | 43.5 | 6.4 | 72 | SW | 9.4 | 4.2 | ..... | ..... | 10 | ..... | ..... | 0.827 | 21.0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.74 | 755.8 | 30.00 | 761.9 | 46.2 | 7.9 | 35 | WNW | 20.6 | 9.2 | ..... | ..... | 9 | WNW | ..... | 0.087 | 2.2 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.81 | 757.2 | 29.89 | 759.1 | 50.7 | 10.4 | 46 | WNW | ..... | ..... | 6 | ..... | 5 | WNW | ..... | 0.165 | 4.2 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.45 | 748.1 | 30.01 | 762.2 | 41.9 | 5.5 | 23 | NE | 11.2 | 5.0 | ..... | ..... | 5 | E | ..... | 0 | 0 | ..... | Prof. F. Brioschi |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.1 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 30.11 | 764.8 | 30.18 | 766.6 | 41.3 | 5.2 | 81 | SE | 3.5 | 1.6 | ..... | 5ck | 0 | ..... | ..... | 0 | 0 | Fair | The Observatory. |
| Tokei (Yeddo) University | 30.07 | 763.8 | 30.17 | 766 3 | 44 | 6.7 | 76 | SSE | 3.5 | 1.6 | ..... | 1cs | ..... | W | ..... | 0 | 0 | Fair | Prof. P. V. Veeder. |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | 25.13 | 638.3 | 29.92 | 760.0 | 63.5 | 17.5 | 62 | N | 0.9 | 0.4 | ..... | 5ck | 5ck | N | ..... | 0 | 0 | Covered | L. Castillo, A. E. |
| Guadalajara | 25.06 | 636.6 | 30.12 | 765.0 | 45.5 | 7.5 | 61 | SW | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Blue sky | Prof. L. Perez. |
| Guanajuato | 23.69 | 601.9 | 29.96 | 761.1 | 55.4 | 13.0 | 67 | E | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 54.5 | 12.5 | 90 | Calm | 0 | 0 | ..... | 1cs | 0 | SW | ..... | 0 | 0 | Clear | Prof. M. Leal. |
| Mexico | 23.11 | 586.9 | 30.24 | 768.1 | 49.1 | 9.5 | 77 | Calm | 0 | 0 | ..... | 0 | 2s | ..... | ..... | 0 | 0 | Clear | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Puebla | ..... | ..... | ..... | ..... | 49.3 | 9.6 | 74 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | M. V. de Leon, M. E. |
| Toluca | 23.36 | 593.2 | 30.11 | 764.8 | 47.3 | 8.5 | 94 | ENE | 1.8 | 0.8 | ..... | 5kn | 8sn | WSW | WSW | 0 | 0 | Covered | Prof. B. Gonzales. |
| Tlacotalpam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| San Luis Potosi | 30.08 | 763.9 | 30.09 | 764.2 | 66.2 | 19.0 | 81 | S | 0.9 | 0.4 | ..... | 3c | 0 | SW | ..... | Inap. | Inap. | Clear | Prof. F. R. Bayly. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Zacatecas | 30.10 | 764.6 | 30.13 | 765.3 | 69.8 | 21.0 | 77 | Calm | 0 | 0 | ..... | 2c | 3s | ..... | ..... | 0 | 0 | ¾ cloudy | Prof. J. Rossell. |
| Puebla, (Catholic Institute) | ..... | ..... | ..... | ..... | 48.2 | 9.0 | 88 | SW | 0.9 | 0.4 | ..... | 5kc | 0 | SW | ..... | 0 | 0 | ¾ cloudy | J. A. Bonilla, M. E. |
| Morelia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Spina. [M. M. D. D. |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Tena, F. L. Param. |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,284.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,135 m., or 7,003.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.25 | 768.4 | 30.25 | 768.4 | 44.6 | 7.0 | ..... | W | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.031 | 0.8 | ..... | |
| Groningen | 30.02 | 762.6 | 30.08 | 764.0 | 43.7 | 6.5 | ..... | NW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.091 | 2.3 | ..... | |
| Helder | 30.12 | 765.0 | 30.12 | 765.0 | 43.3 | 6.3 | ..... | WSW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0.169 | 4.3 | ..... | |
| Hellevoetsluis | 30.23 | 767.7 | 30.23 | 767.7 | 43.9 | 6.6 | 99 | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 30.15 | 765.7 | 30.19 | 766.9 | 45.3 | 7.4 | 94 | WNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.339 | 8.6 | Dull | H. v d Brink. |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer: Corrected for instru.n'tal error and temperature. Inches. | Barometer: Corrected for instru.n'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.72 | 754.8 | 29.77 | 756.2 | 41.0 | 5.0 | 100 | NNW | 22.6 | 10.1 | ..... | ..... | 8 | ..... | ..... | 0.169 | 4.3 | ..... | |
| Brönö | 29.47 | 748.5 | 29.51 | 749.5 | 37.0 | 2.8 | 75 | SW | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | |
| Christiania | 29.44 | 747.7 | 29.58 | 751.4 | 43.5 | 6.4 | 69 | W | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light rain... | |
| Tromsö | 29.35 | 745.5 | 29.39 | 746.6 | 30.2 | — 1.0 | 88 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0.512 | 13.0 | Snowing..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.18 | 766.6 | 30.37 | 771.5 | 60.1 | 15.6 | 85 | SSW | 4.3 | 1.9 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.31 | 744.4 | 30.34 | 770.7 | 54.5 | 12.5 | 28 | NE | 7.4 | 3.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.26 | 768.5 | 30.34 | 770.7 | 64.0 | 17.8 | 40 | SW | 8.1 | 3.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.98 | 761.5 | 30.35 | 770.8 | 56.1 | 13.4 | 28 | ENE | 9.8 | 4.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.37 | 771.4 | 30.46 | 773.6 | 60.8 | 16.0 | 66 | SSE | 19.9 | 8.9 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell: Height scale 0–9 | Sea or swell: Direction from— | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.75 | 755.6 | 29.75 | 755.7 | 86.0 | 30.0 | ..... | ENE | ..... | ..... | 3 | ..... | 4 | ..... | ENE | 1 | ..... | Blue sky..... | J. P. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Sado, Dakar, Sennegambia | 30.14* | 765.5* | 30.15* | 765.8* | 68.9 | 20.5 | ..... | NE | ..... | ..... | 3 | ..... | 7 | ..... | NE | 3 | ENE | D. clouds..... | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.77 | 756.1 | 29.77 | 756.2 | ..... | ..... | ..... | W | ..... | ..... | 2 | ..... | 6 | ..... | W | 1 | ..... | Blue sky..... | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreina, dos Amas, Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.62 | 752.3 | 30.06 | 763.5 | 32.4 | 0.2 | 67 | SSW | 11 | 5 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.52 | 749.7 | 29.95 | 760.8 | 30.7 | — 0.7 | 79 | SW | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | Astronomical Obs. |
| Dorpat | 29.40 | 746.8 | 29.65 | 753.1 | 35.2 | 1.8 | 100 | WSW | 7 | 3 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.51 | 749.6 | 29.53 | 750.0 | 34.5 | 1.4 | 89 | SW | 16 | 7 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing..... | Central Physical Obs. |
| Kuopio | 29.08 | 738.6 | 29.40 | 746.8 | 37.4 | 3.0 | 69 | NW | 2 | 1 | ..... | ..... | 0 | ..... | ..... | Blank | Blank | ..... | Ch. Forsten. |
| Kieff | 29.42 | 747.2 | 30.09 | 764.2 | 32.7 | 0.4 | 54 | WNW | 2 | 1 | ..... | ..... | 2cics | ..... | ..... | ..... | ..... | Light clouds | Physical Cabinet. |
| Nikolaiev | 29.94 | 760.4 | 30.01 | 762.2 | 36.5 | 2.5 | 52 | ENE | 18 | 8 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.98 | 761.6 | 30.00 | 762.1 | 38.7 | 3.7 | 80 | NNE | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.30 | 744.1 | 29.88 | 758.9 | 28.8 | — 1.8 | 76 | S | 13 | 6 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.90 | 759.5 | 30.11 | 764.9 | 34.2 | 1.2 | 55 | ENE | 4 | 2 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Archangel | 29.36 | 745.8 | 29.38 | 746.3 | 28.0 | — 2.2 | 87 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.69 | 728.7 | 30.10 | 764.5 | 60.3 | 15.7 | 47 | E | 9 | 4 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.32 | 770.0 | 30.23 | 767.9 | 45.9 | 7.7 | 56 | SSE | 9 | 4 | ..... | ..... | 8s | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Kasan | 29.52 | 749.7 | 29.80 | 757.0 | 24.4 | — 4.2 | 87 | SW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.92 | 734.5 | 29.91 | 759.6 | 26.8 | — 2.9 | 59 | SW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.85 | 758.3 | 30.08 | 764.1 | 64.6 | 18.1 | 74 | W | 13 | 6 | ..... | ..... | 2s | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.59 | 726.2 | 30.28 | 769.2 | 63.3 | 17.4 | 27 | Calm | 0 | 0 | ..... | ..... | 7k | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.96 | 761.0 | 30.52 | 775.2 | 26.4 | — 3.1 | 65 | W | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.91 | 759.7 | 30.25 | 768.4 | 26.6 | — 3.0 | 72 | NW | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Krotkowo* | 29.48 | 748.7 | 29.98 | 761.4 | 26.4 | — 3.1 | 61 | SW | 16 | 7 | ..... | ..... | 9k | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Peking, (China) | 29.76 | 755.9 | 29.90 | 759.5 | 56.8 | 13.8 | 23 | S | 13 | 6 | ..... | ..... | 4ks | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.50 | 698.6 | 29.66 | 753.3 | 20.1 | — 6.6 | 76 | SW | 4 | 2 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 10.9 | —11.7 | 89 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47', E. 48° 34'.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | ..... | ..... | 30.12 | 765.0 | 51.4 | 10.8 | 50 | SW | 3.2 | 1.45 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.48 | 774.1 | 30.54 | 775.6 | 49.8 | 9.9 | 66 | SE | 1.5 | 0.69 | ..... | 2 | 3 | NE | ..... | 0 | 0 | Cloudy..... | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.39 | 695.6 | ..... | ..... | 36.1 | 2.3 | 94 | NE | 13.8 | 6.19 | ..... | 0 | 8 | ..... | ..... | 0 | 0 | Cloudy..... | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 28.03 | 712.0 | 30.30 | 769.6 | 53.2 | 11.8 | 34 | NE | 13.4 | 6.00 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | The Staff. |
| Murcia, Met. Obs'y | 30.13 | 765.2 | 30.28 | 769.1 | 57.6 | 14.2 | 44 | NE | 3.6 | 1.61 | ..... | 3 | 4 | WNW | ..... | 0 | 0 | Cloudy..... | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.46 | 748.2 | 30.37 | 771.4 | 53.1 | 11.7 | 50 | NE | 15.5 | 6.94 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.85 | 758.2 | 29.92 | 759.9 | 71.2 | 21.8 | 74 | N | 16.8 | 7.5 | ..... | ..... | 10n | ..... | N | 0.484 | 12.3 | Very cloudy | Benito Vines, S. J. |
| San Fernando, Naval Obs'y | 30.19 | 766.9 | 30.30 | 769.5 | 58.6 | 14.8 | 46 | E | 11.9 | 5.3 | ..... | 0 | 7 | ..... | E | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.86 | 758.5 | 29.95 | 760.8 | 79.9 | 26.6 | 88 | SE | 3.4 | 1.51 | ..... | 2cs | 1k | SE | SE | 0 | 0 | Clear..... | Leonardo de Tejeda, Chief of Engineers. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft. The barometer readings at Barcelona are published as given.

## SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-10. | Clouds. Amount. Up'er 0-10. | Clouds. Amount. Low'r 0-10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.41 | 746.9 | 29.45 | 747.9 | 33.4 | 0.8 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.48 | 748.7 | 29.53 | 750.0 | 41.4 | 5.2 | 90 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.47 | 748.6 | 29.52 | 749.9 | 39.6 | 4.2 | 58 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.37 | 746 1 | 29.55 | 750.6 | 46.0 | 7.8 | 67 | Calm | ..... | ..... | 0 | ..... | 7 | ..... | ..... | 0.063 | 1.6 | ..... | |
| Wisby | 29.63 | 752.5 | 29.60 | 751.8 | 42.8 | 6.0 | 85 | WSW | ..... | ..... | 6 | ..... | 8 | ..... | ..... | 0.055 | 1.4 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.48 | 748.7 | 29.55 | 750.6 | 44.2 | 6.8 | 66 | SSW | 8.9 | 4.0 | ..... | ..... | 10 | ..... | ..... | 0.080 | 2.02 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.86 | 733.0 | 30.34 | 770.5 | 37.8 | 3.2 | 71 | NNE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | Covered..... | The Observatory. |
| Zurich | 28.62 | 726.9 | 30.32 | 770.0 | 36.7 | 2.6 | 81 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.161 | 4.1 | Snowing..... | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +6.4 mm.; Thermometer, —4.8 cent.; Relative Humidity, +10 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.63 | 752.6 | 47.1 | 8.4 | 90 | ENE | 9 | 4.0 | ..... | ..... | 10 | ..... | SW | 0.218 | 6.3 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stéfanidès. |
| Valona | ..... | ..... | 29.74 | 755.5 | 40.6 | 4.8 | ..... | NW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 1.10 | 28. | Raining..... | A. Bertrand. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.81 | 757.2 | 29.93 | 760.2 | 70.2 | 21.2 | 82 | SW | ..... | ..... | 1 | ..... | 10cs | ..... | ..... | 0 | 0 | Overcast..... | Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.79 | 756.7 | 30.11 | 764.8 | 36 | 2.2 | ..... | NE | 3 | 1.3 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy..... | W. R. Bigg. |
| *Chatham, N B | 30.22 | 767.6 | 30.29 | 769.4 | 25 | — 3.9 | 87 | NE | 7 | 3.1 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy ..... | G. A. Blair. |
| Charlottetown, P. E. Island | 30.23 | 767.8 | 30.27 | 768.8 | 29 | — 1.7 | 78 | E | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy ..... | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.87 | 758.7 | 30.07 | 763.8 | 34.6 | 1.4 | 88 | NE | ..... | ..... | 1 | 0 | 3s | ..... | ..... | 0 | 0 | Fair..... | James Smith, M. A. |
| Dalhousie, N. B | 30.32 | 770.1 | 30.36 | 771.1 | 21.8 | — 5.7 | 88 | E | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | Clear ..... | H. A. Johnson. |
| Esquimault, B. C | 29.57 | 751.1 | 29.62 | 752.3 | 48.8 | 9.3 | 100 | Calm | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.23 | 5.8 | Rainy..... | W. H. Bevis. |
| *Father Point, Quebec | ..... | ..... | 30.29 | 769.4 | 23 | — 5.0 | 82 | E | 17 | 7.6 | ..... | 2cs | 2s | Calm | Calm | 0 | 0 | Clear..... | J. McWilliams. |
| Fredericton, N. B | 30.16 | 766.1 | 30.23 | 767.8 | 31.9 | — 0.1 | 64 | NE | 14 | 6.3 | ..... | ..... | 10s | ..... | ..... | Inap | Inap. | Cloudy ..... | Prof. Harrison. |
| *Fort Garry Manitoba | 29.07 | 738.4 | 29.93 | 760.2 | 30 | — 1.1 | 98 | Calm | 0 | 0 | ..... | 0 | 2ks | ..... | W | 0 | 0 | Fair..... | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 29.06 | 738.1 | 30.21 | 767.3 | 30.2 | — 1.0 | 98 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | James Grant. |
| *Halifax, N. S | 30.02 | 762.5 | 30.16 | 766.1 | 33 | 0.6 | 98 | E | 18 | 5.8 | ..... | ..... | 10n | ..... | E | Inap. | Inap. | Light snow.. | F. Allison, M. A. |
| Hamilton, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | 30.33 | 770.4 | 30.36 | 771.1 | 29 | — 1.7 | 82 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast..... | E. Weedon. |
| *Kingston, Ontario | 29.74 | 755.4 | 30.08 | 764.0 | 38 | 3.3 | 76 | NE | 4 | 1.8 | ..... | 5ck | 2s | N | Calm | 0 | 0 | Fair ..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.32 | 770.1 | 30.36 | 771.1 | 30 | — 1.1 | ..... | SW | 6 | 2.7 | ..... | 8k | 0 | SW | ..... | 0 | 0 | Cloudy..... | C. H. Rigby. |
| *Montreal, Quebec | 29.86 | 758.4 | 30.07 | 763.8 | 35 | 1.7 | 80 | NE | 12 | 5.4 | ..... | 0 | 2ks | ..... | SE | 0.01 | 0.3 | Clear..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.47 | 748.5 | 30.20 | 767.1 | 29 | — 1.7 | 78 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | Rev. R. Mosley. |
| Peterboro, Ontario | 29.36 | 745.7 | 30.14 | 765.5 | 35 7 | 2.1 | 68 | NW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.44 | 747.8 | 30.16 | 766.1 | 34 | 1.1 | 89 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear ..... | H. Morgan. |
| Port Hastings, N. S | 30.25 | 768.3 | 30.30 | 769.6 | 28.9 | — 1.7 | ..... | E | 4 | 1.8 | ..... | ..... | ..... | ..... | ..... | 1.80 | 45.7 | Cloudy..... | Peter Grant. |
| Port Stanley, Ontario | 29.50 | 749.3 | 30.18 | 766.6 | 33 | 0.6 | 88 | NW | 18 | 5.8 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear ..... | M. Payne. |
| *Quebec, Quebec | 29.84 | 757.9 | 30.17 | 766.3 | 31 | — 0.6 | 79 | NE | ..... | ..... | 7 | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy ..... | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.70 | 754.4 | 30.19 | 766.8 | 29 | — 1.7 | 72 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | W. H. McIntyre. |
| St. Andrews, N. B | 30.02 | 762.5 | 30.07 | 763.8 | 32 | 0.0 | 96 | E | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | 0.02 | 0.5 | Heavy snow | Dr. Gove. |
| St. John, N. B | 29.99 | 761.7 | 30.16 | 766.1 | 33 | 0.6 | 89 | NE | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0.500 | 12.70 | Snowing..... | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.46 | 748.3 | 30.21 | 767.3 | 33 | 0.6 | 82 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | K. Stewart. |
| Stayner, Ontario | 29.39 | 746.5 | 30.21 | 767.3 | 33 | 0.6 | 81 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | R. J. Cole. |
| Stratford, Ontario | 28.85 | 732.8 | 30.20 | 767.1 | 30.2 | — 1.0 | 91 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.30 | 769.6 | 30.33 | 770.4 | 28 | — 2.2 | 90 | NE | 4 | 1.8 | ..... | 10cs | 0 | ..... | ..... | 0 | 0 | Cloudy..... | T. C. Hill. |
| *Toronto, Ontario | 29.76 | 755.9 | 30.16 | 766.1 | 37 | 2.8 | 76 | N | 14 | 6.3 | ..... | 2cs | 0 | NW | ..... | 0 | 0 | Clear ..... | Magnetic Observatory. |
| Windsor, N. S | 30.07 | 763.8 | 30.17 | 766.3 | 34.0 | 1.1 | 100 | E | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.25 | 6.3 | Snowing..... | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 28.0 | — 2.2 | ..... | E | ..... | ..... | ..... | 5k | 5s | ..... | ..... | 0 | 0 | Overcast..... | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,189ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the SECRETARY OF WAR.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Upper. 0–10 | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.66 | 753.4 | 29.89 | 759.2 | 38 | 3.3 | 72 | N | 20 | 8.9 | | | 10s | | N | 0.07 | 1.8 | Cloudy | |
| Alpena, Michigan | 29.54 | 750.3 | 30.22 | 767.6 | 31 | — 0.6 | 89 | NW | 4 | 1.8 | | | 10s | | NW | 0.04 | 1.0 | Cloudy | |
| Atlantic City, New Jersey | 29.82 | 757.4 | 29.84 | 757.9 | 40 | 4.4 | 82 | NW | 10 | 4.5 | | | 10s | | Calm | 0.06 | 1.5 | Cloudy | |
| Augusta, Georgia | 29.91 | 759.7 | 30.10 | 764.5 | 46 | 7.8 | 62 | N | 6 | 2.7 | | 2c | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Baltimore, Maryland | 29.99 | 759.4 | 29.94 | 760.5 | 44 | 6.7 | 68 | NW | 8 | 3.6 | | 2ck | 2ks | N | NW | 0.05 | 1.3 | Fair | |
| Barnegat, New Jersey | 29.81 | 757.2 | 29.82 | 757.4 | 40 | 4.4 | 82 | N | 16 | 7.2 | | | 10s | | N | 1.02 | 25.9 | Cloudy | |
| Bismarck, Dakota | 28.10 | 713.7 | 29.95 | 760.7 | 34 | 1.1 | 79 | NW | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Boise City, Idaho | 26.84 | 681.7 | 29.72 | 754.9 | 55 | 12.8 | 62 | S | 4 | 1.8 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Boston, Massachusetts | 29.58 | 751.3 | 29.73 | 755.1 | 34.5 | 1.4 | 95 | NE | 31 | 13.9 | | | 10n;fg | | NE | 1.99 | 50.5 | Light rain | |
| Brackettville, Texas | 28.86 | 733.0 | 29.89 | 759.2 | 60 | 15.6 | 70 | E | 2 | 0.9 | | 2c | 2s | SW | Calm | 0 | 0 | Fair | |
| Breckenridge, Minnesota | 28.94 | 735.1 | 29.96 | 761.0 | 34 | 1.1 | 90 | SE | 16 | 7.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Brownsville, Texas | 30.01 | 762.2 | 30.08 | 764.0 | 62 | 16.7 | 88 | SE | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Buffalo, New York | 29.40 | 746.7 | 30.12 | 765.0 | 36 | 2.2 | 90 | NW | 4 | 1.8 | | 0 | 0 | | | 0.19 | 4.8 | Clear | |
| Burkes, Arizona | | | | | 63 | 17.2 | 57 | S | | | | 8c;ck | 0 | S | | 0 | 0 | Fair | |
| Burlington, Vermont | 29.73 | 755.1 | 29.99 | 761.7 | 35 | 1.7 | 80 | N | 12 | 5.4 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Cairo, Illinois | 29.88 | 758.9 | 30.28 | 769.1 | 44 | 6.7 | 76 | N | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Camp Grant, Arizona | 25.02 | 635.5 | 29.82 | 757.4 | 60 | 15.6 | 15 | S | | | 3 | | 10n | | S | 0.04 | 1.0 | Cloudy | |
| Camp Verde, Arizona | 26.57 | 674.9 | 30.06 | 763.5 | 55 | 12.8 | 100 | E | | | | | 10ks | | E | 0.04 | 1.0 | Cloudy | |
| Campo, California | 27.19 | 690.6 | 29.76 | 755.9 | 48 | 8.9 | 100 | SW | 4 | 1.8 | | | 10s | | Calm | 0.06 | 1.5 | Cloudy | |
| Cape Hatteras, N. Carolina | 29.96 | 761 0 | 29.96 | 761.0 | 49 | 9.4 | 85 | NE | 2 | 0.9 | | 2k | 0 | N | | 0 | 0 | Fair | |
| Cape Henry, Virginia | 29.90 | 759.4 | 29.93 | 760.2 | 49 | 9.4 | 78 | NW | 28 | 12.5 | | 0 | 0 | | | 0.04 | 1.0 | Clear | |
| Cape Lookout, N. Carolina | 29.96 | 761.0 | 29.97 | 761.2 | 49 | 9.4 | 71 | N | 14 | 6.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Cape May, New Jersey | 29.85 | 758.2 | 29.88 | 758.9 | 43 | 6.1 | 75 | NW | 28 | 12.5 | | 10k | 0 | NW | | 0 | 0 | Cloudy | |
| Charleston, South Carolina | 29.99 | 761.7 | 30.06 | 763.5 | 51 | 10.6 | 53 | N | 10 | 4.5 | | 0 | Haze | | Calm | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 23.94 | 608.1 | 29.88 | 758.9 | 34 | 1.1 | 70 | NW | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Chicago, Illinois | 29.51 | 749.3 | 30.26 | 768.6 | 37 | 2 8 | 90 | N | 2 | 0.9 | | | Fog | | | 0.01 | 0.3 | Foggy | |
| Cincinnati, Ohio | 29.53 | 750.0 | 30.19 | 766.8 | 44 | 6.7 | 76 | N | 7 | 3.1 | | | 10s | | N | Inap. | Inap. | Cloudy | |
| Cleveland, Ohio | 29.47 | 748.5 | 30.22 | 767.6 | 35 | 1.7 | 75 | NW | 8 | 3.6 | | | 10s | | Calm | 0.05 | 1.3 | Cloudy | |
| Concho, Texas | 28.08 | 713.2 | 29.76 | 755.9 | 50 | 10.0 | 7 | SE | 1 | 0.4 | | 8k | 0 | SE | | 0 | 0 | Cloudy | |
| Corsicana, Texas | 29.61 | 752.1 | 30.08 | 764.0 | 54 | 12.2 | 67 | NE | 4 | 1.8 | | Haze | 0 | Calm | | 0 | 0 | Hazy | |
| Davenport, Iowa | 29.63 | 752.6 | 30.30 | 769.6 | 40 | 4.4 | 73 | SE | 4 | 1.8 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Deadwood, Dakota | 25.34 | 643.6 | | | 30 | — 1.1 | 89 | S | 1 | 0.4 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Denison, Texas | 29.31 | 744.5 | 30.12 | 765.0 | 54 | 12.2 | 49 | E | 4 | 1.8 | | | Haze | | | 0 | 0 | Hazy | |
| Denver, Colorado | 24.70 | 627.4 | 29.92 | 760.0 | 37 | 2.8 | 63 | S | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Detroit, Michigan | 29.52 | 749.8 | 30.22 | 767.6 | 32 | 0.0 | 89 | N | 5 | 2.2 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| Dodge City, Kansas | 27.41 | 696.2 | 29.72 | 754.9 | 44 | 6.7 | 60 | S | 18 | 8.0 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Dubuque, Iowa | 29.54 | 750.3 | 30.28 | 769.1 | 32 | 0.0 | 59 | NW | 1 | 0.4 | | 1k | Fog | Calm | W | 0 | 0 | Foggy | |
| Duluth, Minnesota | 29.43 | 747.5 | 30.13 | 765.3 | 32 | 0.0 | 79 | Calm | 0 | 0 | | 5k | 0 | Calm | | 0 | 0 | Fair | |
| Eagle Pass, Texas | 29.20 | 741.7 | 29.92 | 760.0 | 58 | 14.4 | 88 | SE | 4 | 1 8 | | | 8s | | Calm | 0 | 0 | Cloudy | |
| Eastport, Maine | 29.95 | 760.7 | 30.02 | 762.5 | 32 | 0.0 | 100 | NE | 48 | 21.5 | | | 10n | | | 0.05 | 1.3 | Heavy snow | |
| Erie, Pennsylvania | 29.40 | 746.7 | 30.14 | 765.5 | 40 | 4 4 | 91 | Calm | 0 | 0 | | 2k | 0 | NE | | 0.07 | 1.8 | Fair | |
| Escanaba, Michigan | 29.54 | 750.3 | 30.23 | 767.8 | 31 | — 0.6 | 79 | SW | 7 | 3.1 | | | 10s | | SW | Inap. | Inap. | Cloudy | |
| Florence, Arizona | 28.10 | 713.7 | 29.70 | 754.4 | 60 | 15.6 | 31 | SE | | | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Fort Bayard, New Mexico | 24.04 | 610.6 | 30.04 | 763.0 | 47 | 8.3 | 48 | SW | 5 | 2.2 | | 2k | 2s | | | 0.05 | 1.3 | Fair | |
| Fort Craig, New Mexico | 25.40 | 645.2 | | | 53 | 11.7 | 36 | SW | 1 | 0.4 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Fort Gibson, Indian Ter | 29.58 | 751 3 | 30.13 | 765.3 | 50 | 10.0 | 45 | E | 7 | 3.1 | | 5c | Sm'e | Calm | | Inap. | Inap. | Smoky | |
| Fort Griffin, Texas | 28.75 | 730.2 | 30.04 | 763.0 | 49 | 9.4 | 71 | Calm | 0 | 0 | | 8cs | 0 | Calm | | 0 | 0 | Cloudy | |
| Fort St. Michael, Alaska | 29.93 | 760.2 | 29.96 | 761.0 | — 4 | —20.0 | 100 | N | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Sill, Indian Territory | 28.83 | 732.3 | 29.95 | 760.7 | 49 | 9.4 | 57 | N | 2 | 0.9 | | 5cs | Haze | Calm | Calm | 0 | 0 | Fair | |
| Galveston, Texas | 30.04 | 763.0 | 30.08 | 764.0 | 66 | 18.9 | 73 | SE | 11 | 4.9 | | 1cs;ha. | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Grand Haven, Michigan | 29.58 | 751.3 | 30.26 | 768.6 | 40 | 4.4 | 82 | Calm | 0 | 0 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Indianapolis, Indiana | 29.44 | 747.8 | 30.26 | 768.6 | 39 | 3.9 | 82 | NW | 5 | 2.2 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Indianola, Texas | 30.04 | 763.0 | 30.07 | 763.8 | 65 | 18.3 | 84 | SW | 1 | 0.4 | | 8ck | 0 | NW | | 0 | 0 | Fair | |
| Jacksboro, Texas | 28.92 | 734.6 | 30.05 | 763.3 | 55 | 12.8 | 56 | SE | 5 | 2.2 | | 4c | 0 | W | | 0 | 0 | Fair | |
| Jacksonville, Florida | 29.96 | 761.0 | 29.99 | 761.7 | 53 | 11.7 | 54 | NW | 9 | 4.0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.61 | 752.1 | 30.25 | 768.8 | 38 | 3.3 | 63 | Calm | 0 | 0 | | 0 | 1s | | Calm | 0 | 0 | Clear | |
| Key West, Florida | 29.88 | 758.9 | 29.91 | 759.7 | 68 | 20.0 | 84 | N | 21 | 9.4 | | 10k | 0 | N | | 0.90 | 22.9 | Cloudy | |
| Kittyhawk, North Carolina | 29.94 | 760.5 | 29.97 | 761.2 | 46 | 7.8 | 84 | NW | 7 | 3.1 | | 0 | 0 | | | 0.01 | 0.3 | Clear | |
| Knoxville, Tennessee | 29.14 | 740.1 | 30.17 | 766.3 | 44 | 6.7 | 68 | N | 4 | 1.8 | | 8cs | 0 | NE | | 0 | 0 | Cloudy | |
| La Crosse, Wisconsin | 29.47 | 748.5 | 30.24 | 768.1 | 31 | — 0.6 | 79 | S | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 25.92 | 658.4 | 30.07 | 763.8 | 43 | 6.1 | 75 | Calm | 0 | 0 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Laredo, Texas | 29.55 | 750.6 | 29.89 | 759.2 | 61 | 16.1 | 82 | SE | 7 | 3.1 | | 5cs | 0 | Calm | | 0 | 0 | Fair | |
| Leavenworth, Kansas | 29.31 | 744.5 | 30.18 | 766.6 | 39 | 3.9 | 82 | SE | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Los Angeles, California | 29.47 | 748.5 | 29.80 | 756.9 | 55 | 12.8 | 87 | E | 1 | 0.4 | | | 10s | | Calm | 0.06 | 1.5 | Cloudy | |
| Louisville, Kentucky | 29.65 | 753.1 | 30.23 | 767.8 | 41 | 5.0 | 74 | N | 10 | 4.5 | | | 10s | | N | 0 | 0 | Cloudy | |
| Lynchburg, Virginia | 29.21 | 744.5 | 29.99 | 761.7 | 48 | 8.9 | 49 | N | 10 | 4.5 | | 0 | 2ks | | N | 0 | 0 | Clear | |
| Marquette, Michigan | 29.44 | 747.8 | 30.16 | 766.1 | 32 | 0.0 | 79 | SW | 4 | 1.8 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Mason, Texas | 28.38 | 720.8 | 30.13 | 765.3 | 56 | 13.3 | 69 | S | 4 | 1.8 | | 5cs | 0 | Calm | | 0 | 0 | Fair | |
| Memphis, Tennessee | 29.92 | 760.0 | 30.25 | 768.3 | 45 | 7.2 | 67 | NE | 4 | 1.8 | | 0 | Sm'e | | NE | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.56 | 750.8 | 30.28 | 769.1 | 35 | 1.7 | 80 | W | 1 | 0.4 | | | 10s | | | 0 | 0 | Cloudy | |
| Mobile, Alabama | 30.00 | 762.3 | 30.14 | 765.5 | 51 | 10.6 | 62 | N | 11 | 4.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Montgomery, Alabama | 29.91 | 759.7 | 30.15 | 765.8 | 46.5 | 8.1 | 65 | N | 2 | 0.9 | | 0 | Haze | | Calm | 0 | 0 | Clear | |
| Morgantown, West Virginia | 29.01 | 737.6 | 30.12 | 765.0 | 39 | 3.9 | 73 | N | 11 | 4.9 | | | 10s | | NW | 0.06 | 1.5 | Cloudy | |
| Mt. Washington, N. H. | 23.39 | 594.1 | 29.75 | 755.6 | 16 | — 8.9 | 100 | NE | 105 | 46.9 | | | 10n | | NE | 0.53 | 13.5 | Light snow | |
| Nashville, Tennessee | 29.67 | 753.6 | 30.22 | 767.6 | 42 | 5.6 | 74 | N | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| New Haven, Connecticut | 29.67 | 753.6 | 29.78 | 756.4 | 38 | 3.3 | 81 | N | 20 | 8.9 | | | 10s | | N | 1.00 | 25.4 | Cloudy | |
| New London, Connecticut | 29.66 | 753.4 | 29.71 | 754.6 | 34 | 1.1 | 90 | N | 12 | 5.4 | | | 10n | | Calm | 0.23 | 5.8 | Heavy snow | |
| New Orleans, Louisiana | 30.06 | 763.5 | 30.12 | 765.0 | 67 | 13.9 | 47 | NE | 9 | 4.0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Newport, Rhode Island | 29.62 | 752.3 | 29.67 | 753.6 | 36 | 2.2 | 100 | N | 11 | 4.9 | | | 10n | | N | 1.04 | 26.4 | Light rain | |
| New York, New York | 29.64 | 752.8 | 29.82 | 757.4 | 40 | 4.4 | 82 | NW | 14 | 6.3 | | | 10n;fg | | NW | 0.73 | 18.5 | Light rain | |
| Norfolk, Virginia | 29.90 | 759.4 | 29.96 | 761.0 | 48 | 8.9 | 70 | NW | 12 | 5.4 | | 0 | 2s | | Calm | Inap. | Inap. | Fair | |
| North Platte, Nebraska | 27.10 | 688.3 | 29.74 | 755.4 | 35 | 1.7 | 80 | E | 10 | 4.5 | | 0 | Sm'e | | Calm | 0 | 0 | Smoky | |
| Olympia, Washington Ter. | 29.82 | 732.3 | 29.66 | 753.4 | 49 | 9.4 | 93 | Calm | 0 | 0 | | | 10n | | Calm | 0.16 | 4.1 | Light rain | |
| Omaha, Nebraska | 29.02 | 737.1 | 30.13 | 765.3 | 39 | 3.9 | 73 | SE | 6 | 2.7 | | 2cs | 0 | Calm | | 0 | 0 | Clear | |
| Oswego, New York | 29.69 | 754.1 | 30.02 | 762.5 | 36 | 2.2 | 90 | NE | 16 | 7.2 | | | 10s | | | 0.07 | 1.8 | Cloudy | |
| Pembina, Dakota | 29.08 | 738.6 | 29.94 | 760.5 | 32.5 | 0.3 | 89 | SW | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Philadelphia, Pennsylvania | 29.83 | 757.7 | 29.88 | 758.9 | 41 | 5.0 | 73 | NW | 18 | 8.0 | | | 10s | | N | 0.09 | 2.3 | Cloudy | |
| Phœnix, Arizona | 28.59 | 726.2 | 30.35 | 770.9 | 60 | 15.6 | 94 | W | | | | | 10n | | W | Inap. | Inap. | Light rain | |
| Pike's Peak, Colorado | 17.75 | 450.8 | 29.96 | 761.0 | 14 | —10.0 | 46 | S | 12 | 5.4 | | 8c | 0 | S | | 0 | 0 | Fair | |
| Pioche, Nevada | 23.81 | 604.8 | 29.58 | 751.3 | 47 | 8.3 | 31 | SE | 7 | 3.1 | | | 10s | | S | 0 | 0 | Cloudy | |
| Pittsburg, Pennsylvania | 29.28 | 743.7 | 30.11 | 764.8 | 40 | 4.4 | 82 | N | 5 | 2.2 | | | 10s | | N | 0.09 | 2.3 | Cloudy | |
| Port Huron, Michigan | 29.52 | 749.8 | 30.20 | 767.1 | 34 | 1.1 | 90 | N | 9 | 4.0 | | 0 | 0 | | | 0.02 | 0.5 | Clear | |
| Portland, Maine | 29.80 | 756.9 | 29.85 | 758.2 | 35 | 1.7 | 90 | NE | 24 | 10.7 | | | 10n | | Calm | 0.30 | 7.6 | Light snow | |
| Portland, Oregon | 29.69 | 754.1 | 29.79 | 756.7 | 50 | 10.0 | 93 | S | 4 | 1.8 | | | 10n | | Calm | 0.14 | 3.6 | Light rain | |
| Prescott, Arizona | 24.57 | 624.1 | 29.93 | 760.2 | 47 | 8.3 | 62 | SE | | | | | 10s | | | 0 | 0 | Threatening | |
| Punta Rassa, Florida | 29.95 | 760.7 | 29.97 | 761.2 | 64 | 17.8 | 78 | N | 8 | 3.6 | | 0 | 0 | | | 0.22 | 8.1 | Clear | |
| Red Bluff, California | 29.42 | 747.3 | 29.77 | 756.1 | 54 | 12.2 | 87 | S | 6 | 2.7 | | 0 | 8ks | | Calm | Inap. | Inap. | Fair | |
| Rochester, New York | 29.44 | 747.8 | 30.06 | 763.5 | 40 | 4.4 | 82 | W | 10 | 4.5 | | 5k | 0 | NE | | 0.36 | 9.1 | Fair | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roseburg, Oregon | 29.19 | 741.4 | 29.76 | 755.9 | 47 | 8.3 | 96 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.48 | 12.2 | Cloudy..... | |
| Sacramento, California | 29.73 | 755.1 | 29.82 | 757.4 | 55.6 | 13.1 | 84 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy..... | |
| St. Louis, Missouri | 29.69 | 754.1 | 30.28 | 769.1 | 42 | 5.6 | 74 | E | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| St. Marks, Florida | 30.02 | 762.5 | 30.04 | 763.0 | 60 | 10.0 | 59 | N | 6 | 2.7 | ..... | 0 | Sm'o | ..... | ..... | 0 | 0 | Clear..... | |
| St. Paul, Minnesota | 29.28 | 743.7 | 30.14 | 765.5 | 32 | 0.0 | 79 | SE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.43 | 645.9 | 29.76 | 755.9 | 49 | 9.4 | 37 | SE | 10 | 4.5 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear..... | |
| San Antonio, Texas | 29.33 | 745.0 | 29.92 | 760.0 | 55 | 12.8 | 87 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair..... | |
| San Diego, California | 29.78 | 756.4 | 29.85 | 758.2 | 56 | 13.3 | 94 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.04 | 1.0 | Cloudy..... | |
| Sandusky, Ohio | 29.64 | 750.3 | 30.24 | 768.1 | 37 | 2.8 | 81 | N | 16 | 7.2 | ..... | ..... | 10ks | ..... | Calm | Inap. | Inap. | Cloudy..... | |
| Sandy Hook, New Jersey | 29.79 | 756.7 | 29.82 | 757.4 | 40 | 4.4 | 82 | N | 17 | 7.6 | ..... | ..... | 10ks | ..... | N | 0.46 | 11.7 | Cloudy..... | |
| San Francisco, California | 29.75 | 755.6 | 29.82 | 757.4 | 54 | 12.2 | 87 | Calm | 0 | 0 | ..... | 2k | 0 | SW | ..... | 0.06 | 1.5 | Fair..... | |
| Santa Fé, New Mexico | 23.19 | 589.0 | 29.73 | 755.1 | 45 | 7.2 | 39 | E | 12 | 5.4 | ..... | 8cs | 0 | Calm | ..... | 0 | 0 | Cloudy..... | |
| Savannah, Georgia | 29.95 | 760.7 | 30.04 | 763.0 | 60 | 10.0 | 58 | NE | 9 | 4.0 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear..... | |
| Shreveport, Louisiana | 29.95 | 760.7 | 30.17 | 766.3 | 54 | 12.2 | 55 | NE | 1 | 0.4 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Hazy..... | |
| Smithville, North Carolina | 29.98 | 761.5 | 30.01 | 762.2 | 46 | 7.8 | 69 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Springfield, Massachusetts | 29.62 | 752.3 | 29.75 | 755.6 | 38 | 3.3 | 72 | NE | 14 | 6.3 | ..... | ..... | 10ks | ..... | NE | 0.67 | 17.0 | Cloudy..... | |
| Stockton, Texas | 26.90 | 683.2 | 29.90 | 759.4 | 58 | 14.4 | 60 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Thatcher's Island, Mass | 29.66 | 753.4 | 29.71 | 754.6 | 36 | 2.2 | 100 | NE | 40 | 17.9 | ..... | ..... | 10n | ..... | NE | 2.13 | 54.1 | Light rain... | |
| Toledo, Ohio | 29.54 | 750.3 | 30.24 | 768.1 | 40 | 4.4 | 56 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear..... | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 56 | 13.3 | 34 | E | ..... | ..... | ..... | ..... | 10ks | ..... | SW | 0 | 0 | Cloudy..... | |
| Tybee Island, Georgia | 30.00 | 762.0 | 30.03 | 762.7 | 53 | 11.7 | 53 | N | 24 | 10.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Umatilla, Oregon | 29.34 | 745.2 | ..... | ..... | 46 | 7.8 | 92 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Vicksburg, Mississippi | 29.93 | 760.2 | 30.19 | 766.8 | 51 | 10.6 | 79 | Calm | 0 | 0 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear..... | |
| Virginia City, Montana | 24.12 | 612.6 | 29.60 | 751.8 | 40 | 4.4 | 48 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Visalia, California | 29.46 | 748.3 | 29.83 | 757.7 | 55 | 12.8 | 93 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.13 | 3.3 | Cloudy..... | |
| Washington, D. C. | 29.86 | 758.4 | 29.98 | 761.5 | 43 | 6.1 | 67 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear..... | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 36 | 2.2 | 61 | N | ..... | ..... | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair..... | |
| Wilmington, N. Carolina | 29.92 | 760.0 | 30.00 | 762.0 | 44 | 6.7 | 73 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Winnemucca, Nevada | 25.36 | 644.1 | 29.72 | 754.9 | 44 | 6.7 | 68 | S | 12 | 5.4 | ..... | 0 | 8s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Wood's Holl, Mass | 29.58 | 751.3 | 29.63 | 752.6 | 42 | 5.6 | 91 | NE | 6 | 2.7 | ..... | ..... | 10n;fg | ..... | Calm | 0.89 | 22.6 | Light rain... | |
| Yankton, Dakota | 28.79 | 731.3 | 30.11 | 764.8 | 39 | 3.9 | 55 | S | 8 | 3.6 | ..... | 1c | 0 | NW | ..... | 0 | 0 | Clear..... | |
| Yuma, Arizona | 29.57 | 751.1 | 29.74 | 755.4 | 61 | 16.1 | 66 | SW | 3 | 1.3 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 29.77 | 756.1 | 29.82 | 757.4 | 8.0 | —13.3 | 100 | NW | 5 | 2.2 | ..... | 2k | 7s | S | ..... | 0.03 | 0.8 | Cloudy..... | J. Fortescue, W. Wood |
| Havana, Cuba, W. I. | 29.88 | 758.9 | 29.90 | 759.4 | 72 | 22.2 | 71 | NW | 10.8 | 4.8 | ..... | ..... | 8n | ..... | N | 0.44 | 11.2 | Cloudy..... | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.02 | 762.5 | 30.03 | 762.7 | 82 | 27.8 | 91 | SE | 7 | 3.1 | ..... | 8c | 8s | SE | Calm | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.81 | 757.2 | 29.89 | 759.2 | 81 | 27.2 | ..... | SE | 20 | 8.9 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy..... | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | ..... | ..... | 30.01 | 762.2 | 81 | 27.2 | 87 | E | ..... | ..... | 2 | ..... | 8ks | ..... | ..... | 2.320 | 58.93 | Cloudy..... | O. J. Hering. |
| Batavia, Dutch Guiana, S. A. | 30.07 | 763.8 | 30.08 | 764.0 | 78.5 | 25.8 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1.398 | 35.50 | Raining..... | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.22 | 640.6 | ..... | ..... | 67.5 | 19.7 | 83 | Calm | ..... | ..... | 0 | ..... | 10s;ks | ..... | ..... | 0 | 0 | ..... | Thomas Herran |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Mukawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 metres; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,560 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 760 ft., or 538.4 m.; Dendwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,676 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,916.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,862.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.64 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.79 | 756.7 | 54 | 12.2 | 51 | 10.6 | 100 | WSW | 8 | 3.6 | ..... | ..... | 5 | ..... | W | 0.005 | 0.13 | ..... | ..... | Fair | |
| Navy Yard, Pensacola, Fla. | 30.17 | 766.3 | 54 | 12.2 | 54 | 12.2 | 87 | N | 1 | 0.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Navy Yard, Portsmouth, N. H | 29.80 | 756.9 | 52 | 11.1 | 34 | 1.1 | 90 | NE | 14 | 6.3 | ..... | ..... | 10 | ..... | ..... | 1.1 | 28. | ..... | ..... | Rain & snow | |
| Naval Hospital, Yokohama, Japan | 30.07* | 763.8* | 52 | 11.1 | 42 | 5.6 | 74 | Calm | ..... | ..... | 0 | ..... | 4k | ..... | SW | 0 | 0 | ..... | ..... | Clear | |
| Adams, Panama | 29.92 | 760.0 | 82 | 27.8 | 82 | 27.8 | 87 | NW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy | |
| Alliance, Piraeus, Greece | 29.60‡ | 751.8‡ | ..... | ..... | 63 | 17.2 | 78 | S | ..... | ..... | 0–1 | ..... | 2 | ..... | S | ..... | ..... | ..... | ..... | Pleasant | |
| Ashuelot, Shanghai, China | 30.34* | 770.6* | 54 | 12.2 | 41 | 5.0 | 91 | SE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Blue sky | |
| Canonicus, New Orleans, La | 30.04 | 763.0 | 44 | 6.7 | 56 | 13.3 | 75 | NE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Colorado, New York, N. Y. | 29.79‡ | 756.7‡ | ..... | ..... | 40 | 4.4 | 82 | NNW | 10 | 4.5 | ..... | ..... | 10 | ..... | NNW | 0.68 | 17.3 | ..... | ..... | Drizzling | |
| Constitution, N. 17° 46′ W. 23° 45′ | 30.54‡ | 775.7‡ | ..... | ..... | 54 | 12.2 | 80 | SSE | ..... | ..... | 5 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | SE | Overcast | |
| Despatch, Sulina, Bulgaria | 30.01 | 762.2 | 75 | 23.9 | 36 | 2.2 | 100 | E | ..... | ..... | 6 | ..... | 10 | ..... | E | ..... | ..... | Smooth | ..... | Snowing | |
| Enterprise, New Orleans, La | 30.14‡ | 765.5‡ | ..... | ..... | 60 | 15.6 | 65 | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Franklin, Norfolk, Va | 29.93‡ | 760.2‡ | ..... | ..... | 47 | 8.3 | 70 | NW | 4.8 | 2.1 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | D. clouds | |
| Gettysburg Valetta, Malta | 29.97‡ | 761.2‡ | ..... | ..... | 50 | 10.0 | ?? | WNW | ..... | ..... | 5 | ..... | 5 | ..... | NW | Blank | Blank | ..... | ..... | Cloudy | |
| Guard, Porto Grande, Cape Verde Islands | 30.20 | 767.1 | 73 | 22.8 | 72 | 22.2 | 62 | NE | ..... | ..... | 3 | ..... | 2 | ..... | NE | ..... | ..... | ..... | ..... | Clear | |
| Marion, Smyrna, Turkey | 29.65 | 753.1 | 62 | 16.7 | 66 | 18.9 | 45 | S | ..... | ..... | 6 | ..... | 5 | ..... | Calm | 0 | 0 | Smooth | S | Fair | |
| Michigan, Erie, Pa | 29.63 | 752.6 | 69 | 20.6 | 40 | 4.4 | 82 | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Monongahela, Hong-Kong, China | 30.19* | 766.8* | 60 | 15.6 | 60 | 15.6 | 82 | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | Very light | Very light | ..... | ..... | Overcast | |
| New Hampshire, Port Royal, S. C | 30.15 | 765.8 | 55 | 12.8 | 48 | 8.9 | 92 | N | 19 | 8.5 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Omaha, N. 4° 50′, W. 35° 42′ | 30.09* | 764.3* | 84 | 28.9 | 82.5 | 28.1 | 81 | ENE | 4 | 1.8 | ..... | ..... | 4 | ..... | E | 0 | 0 | Mod'ate | NE | ..... | |
| Onward, Callao, Peru | 30.00† | 762.0† | ..... | ..... | 74 | 23.3 | 90 | ESE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty | |
| Ossipee, Vera Cruz, Mexico | 30.14‡ | 765.5‡ | ..... | ..... | 69 | 20.6 | 95 | SW | ..... | ..... | 3 | ..... | 2 | ..... | E | ..... | ..... | ..... | ..... | Clear | |
| Palos, Shanghai, China | 30.36* | 771.1* | 58 | 14.4 | 42 | 5.6 | 83 | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Pensacola, Honolulu, H. I. | 30.16 | 766.1 | 71 | 21.7 | 68 | 20.0 | 90 | N | 1 | 0.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Plymouth, Norfolk, Va | 30.00‡ | 762.0‡ | ..... | ..... | 47 | 8.3 | 100 | NNW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Powhatan, Havana, Cuba, W. I. | 29.93‡ | 760.2‡ | ..... | ..... | 71 | 21.7 | 100 | N | 7.2 | 3.2 | ..... | ..... | 0? | ..... | ..... | 0 | 0 | Smooth | ..... | Overcast | |
| Ranger, Amoy, China | 30.34* | 770.6* | ..... | ..... | 56 | 13.3 | 57 | ENE | ..... | ..... | 3–4 | ..... | 0? | ..... | ..... | ..... | ..... | ..... | ..... | D. clouds? | |
| Rio Bravo, Brownsville, Texas | ..... | ..... | ..... | ..... | 61 | 16.1 | 100 | E | ..... | ..... | 2 | ..... | 2 | ..... | E | ..... | ..... | ..... | ..... | Clear | |
| Santee, Annapolis, Md | 30.00* | 762.0* | 56 | 13.3 | 43 | 6.1 | 67 | NW | ..... | ..... | 4 | ..... | 8 | ..... | N | 0.10 | 2.5 | ..... | ..... | Cloudy | |
| Saratoga, Washington, D. C | 29.83* | 757.7* | ..... | ..... | 46 | 7.8 | 100 | N | ..... | ..... | 1 | ..... | 9kn | ..... | ..... | 0 | 0 | ..... | ..... | Fair | |
| St. Louis, League Island, Pa | 29.84 | 757.9 | 62 | 16.7 | 42 | 5.6 | 83 | NW | 12 | 5.4 | ..... | ..... | 10 | ..... | NW | 0.14 | 3.6 | ..... | ..... | Cloudy | |
| Supply, N. 50° 08′ W. 10° | 30.70 | 779.8 | 59 | 15.0 | 54 | 12.2 | 74 | NW | ..... | ..... | 4 | ..... | 8 | ..... | NW | ..... | ..... | Smooth | ..... | Cloudy | |
| Swatara, Savanilla, New Grenada | 29.97* | 761.2* | ..... | ..... | 82 | 27.8 | 91 | NNW | ..... | ..... | 1 | ..... | 10 | ..... | N&E | ..... | ..... | ..... | ..... | Misty | |
| Tennessee, N. 5° 25′ 6″, E. 100° 19′ 45″ | 29.92* | 760.0* | 88 | 31.1 | 88 | 31.1 | 66 | W | 2 | 0.9 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | Smooth | ..... | Hazy | |
| Trenton, Piraeus, Greece | 29.61‡ | 752.1‡ | ..... | ..... | 65 | 18 3 | 73 | S | ..... | ..... | 2 | ..... | 2 | ..... | S | 0 | 0 | Smooth | ..... | Hazy | |
| Tuscarora, N. 24° 05,′ W. 110° 15′ | 29.96 | 761.0 | 70 | 21.1 | 70 | 21.1 | 75 | WNW | ..... | ..... | 5 | ..... | 2 | ..... | Calm | ..... | ..... | Mod'ate | NW | Fair | |
| Vandalia, N. 40° 10′, E. 14° 28′ | 29.96‡ | 761.0‡ | ..... | ..... | 47 | 8.3 | 41 | N | ..... | ..... | 6 | ..... | 5 | ..... | N | ..... | ..... | Rough | N | Clearing | |
| Wabash, Boston, Mass | 29.75‡ | 755.6‡ | ..... | ..... | 37 | 2.8 | 90 | NE | 24 | 10.7 | ..... | ..... | 10 | ..... | NE | 2.1 | 53. | ..... | ..... | Light rain | |
| Wyoming, N. 40° 09′ W. 69° 18′ | 29.85* | 758.2* | ..... | ..... | 44 | 6.7 | 92 | SW | ..... | ..... | 3–5 | ..... | 10 | ..... | SW | ..... | ..... | Rough | S&W | Squally | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the air. | | Relative humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | Character. | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |

### PACIFIC MAIL S. S. CO. MARINE SERIES.

Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, Hong-Kong, China | | | | | 69 | 16.0 | | E | | | 4 | | 10 | | | | | Overcast | Capt. Maury. |
| S. S. Colima, N. 9° 58', W. 87° 58' | | | 29.86† | 758.4† | 82 | 27.8 | 91 | E | | | 0–1 | | 4 | | SE | Small | SE | Lightning | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. †Aneroid.

### WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, New York, N. Y. | | | 29.85† | 758.2† | 42 | 5.6 | ?? | NNE | | | 3 | | 10 | | N | | | Cloudy | Capt. W. H. Thompson |
| S. S. Celtic, N. 45° 17,' W. 44° 37' | | | 30.38† | 771.6† | 48 | 8.9 | 100 | NW | | | 5 | | | WNW | | Mod'ate | W | D. clouds | Capt. B. Gleadell. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Aneroid.

### OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic | | | | | | | | | | | | | | | | | | | Capt. John Metcalf. |
| S. S. Gaelic, Yokohama, Japan | | | 30.07† | 763.8† | | | | W | | | 3 | | 8 | | Var. | | | D. clouds | Capt. W. H. Kidley |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid

### NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAME OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Upper | Lower | Upper. | Lower. | Character | Direction From— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, N. 41° 54′ 33″, W. 51° 07′ 30″ | | | 30.41† | 772.4† | 43 | 6.1 | ?? | SE | | | 1 | | 3 | | ESE | Light | ENE | Clear | Captain Sargent. |
| S. S. Ohio, N. 47° 06′, W. 38° 37′ | | | 30.04 | 763.0 | 49 | 9.4 | 85 | NNW | | | 5 | | 5 | | NNW | Rough | NNW | Fine | Captain Morrison. |
| S. S. Pennsylvania, N. 38° 46′, W. 75° 14′ | | | 29.86 | 758.4 | 44 | 6.7 | 92 | WNW | | | 4 | | 9 | | NW | Light | S | Cloudy | Captain Harris. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. †Aneroid; unreliable, corrected for elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland, N. 48° 29′, W. 20° 01′ | | | 30.62* | 777.7* | | | | SSE | 12 | 5.4 | | | 8 | | SSE | Mod'ate | ESE | Cloudy | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |

*Aneroid; regulated to standard at Antwerp.

**ALLAN LINE MARINE SERIES.**

Furnished by the coöperation of A. Schumacher, & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Scandinavian | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.)**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Crisfield, Md. | | | 29.84 | 757.9 | 48 | 8.9 | 70 | NNW | 17 | 7.6 | | | 8k? | | N | | | Clear? | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.63 | 752.6 | —25 | —31.7 | 88* | W | 2 | 0.9 | | 0 | 6s | | NE | | | Clearing | O. T. Sherman. |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Determined by use of hair hygrometer.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg$^{d}$.) Chief Signal Officer, U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 19, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.21 | 767.3 | 59.7 | 15.4 | ..... | NE | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Dr. Ollive. |
| Nemours | ..... | ..... | 30.26 | 768.7 | 58.5 | 14.7 | 67 | Calm | ..... | ..... | 0 | ..... | 7 | ..... | ..... | 0.224 | 5.7 | Very cloudy | Michel. |
| Algiers | ..... | ..... | 30.20 | 767.1 | 55.4 | 13.0 | 77 | NNE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Towillere. |
| La Calle | ..... | ..... | 30.13 | 765.4 | 56.5 | 13.6 | 64 | NW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Boulangeot. |
| Tunis | ..... | ..... | 30.14 | 765.6 | 60.1 | 15.6 | 42 | W | ..... | ..... | 5 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Jacques. |
| Sfax | ..... | ..... | 30.16 | 766.0 | 71.6 | 22.0 | ..... | NNE | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Gau. |
| Saida | ..... | ..... | 30.19 | 766.9 | 41.5 | 5.3 | 75 | NNE | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0.492 | 12.5 | Cloudy | Herbin. |
| Tebessa | ..... | ..... | 30.13 | 765.4 | ..... | ..... | ..... | NW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Bourgeois. |
| Geriville | ..... | ..... | 30.21 | 767.2 | 43.5 | 6.4 | 91 | N | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0.35 | 9. | Covered | Lemaillot. |
| Laghouat | ..... | ..... | 30.18 | 766.5 | 41.0 | 5.0 | 84 | E | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Guyot. |
| Biskra | ..... | ..... | 30.23 | 767.7 | 59.7 | 15.4 | 45 | NNE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.18 | 741.1 | 29.73 | 755.2 | 46.4 | 8.0 | 81 | SW | ..... | ..... | 7 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 28.85 | 732.9 | 29.63 | 752.7 | 40.6 | 4.8 | 65 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.055 | 1.4 | ..... | Dr. Wierzbiski. |
| Eperies | 28.73 | 729.7 | 29.62 | 752.3 | 40.8 | 4.9 | 87 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.48 | 723.4 | 29.74 | 755.3 | 48.4 | 9.1 | 59 | N | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.15 | 715.1 | 29.63 | 752.6 | 30.6 | — 0.8 | 92 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.051 | 1.30 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.46 | 722.8 | 29.84 | 758.0 | 35.6 | 2.0 | 93 | WNW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.433 | 11.0 | ..... | Prof. C. Wagner |
| Lemberg | 28.58 | 725.8 | 29.59 | 751.5 | 36.0 | 2.2 | 61 | S | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0.051 | 1.3 | ..... | Dr. T. Stanecki. |
| Pola | 29.73 | 755.1 | 29.84 | 758.0 | 48.4 | 9.1 | 52 | SSW | ..... | ..... | 1 | ..... | 6cs | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szatlmar | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Johann Tamas, S. J. |
| Szegedin | 28.41 | 747.1 | 29.70 | 754.4 | 41.7 | 5.4 | 69 | NW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Karl Stancel. |
| Trieste | 29.77 | 756.1 | 29.87 | 758.7 | 44.6 | 7.0 | 61 | NW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | F. Busin. |
| Vienna | 29.00 | 736.7 | 29.74 | 755.3 | 37.8 | 3.2 | 87 | W | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0 | 0 | Clear | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.465 | 11.8 | Raining | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.58 | 725.9 | 30.13 | 765.3 | 40.8 | 4.9 | 84 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.035 | 0.9 | ..... | Prof. M. Passau. |
| Brussels | 29.96 | 760.9 | 30.16 | 766.1 | 45.1 | 7.3 | 92 | WNW | ..... | ..... | 2 | ..... | 10 | ..... | NNW | 0.068 | 1.6 | ..... | Royal Observatory. |
| Furnes | 30.24 | 768.1 | 30.26 | 768.7 | 40.4 | 8.0 | 90 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.114 | 2.9 | ..... | M. E. de Cae. |
| Maeseyck | 29.98 | 761.5 | 30.11 | 764.7 | 45.9 | 7.7 | 87 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.047 | 1.2 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 ? feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 1—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.16 | 766.1 | 30.26 | 768.6 | 51.9 | 11.1 | ..... | WNW | 30 | 13.4 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | Blue sky..... | W. Boswell. |
| Ardrossan | 30.32 | 770.1 | 30.34 | 770.6 | 51 | 10.6 | ..... | WNW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.46 | 773.7 | 49.3 | 9.6 | ..... | NW | 6 | 2.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | S. Call, for Dr. Robinson. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.35 | 770.9 | 49.9 | 9.9 | ..... | WNW | 22 | 9.8 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 30.49 | 774.4 | 51.8 | 11.0 | ..... | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | J. Dreyer. |
| Bradford, Yorkshire | 29.90 | 759.4 | 30.30 | 769.6 | 53.5 | 11.9 | ..... | W | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Blue sky..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.96 | 761.0 | 29.99 | 761.7 | 85.0 | 29.4 | ..... | NE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 30.30 | 769.6 | 50.0 | 10.0 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | H. Todd. [H. C. |
| Cardington | ..... | ..... | 30.31 | 769.9 | 53.0 | 11.7 | ..... | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John McLaren. |
| Chatham, School M. E. | 30.16 | 766.1 | 30.29 | 769.4 | 49.7 | 9.8 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.87 | 733.3 | 30.38 | 771.6 | 46.0 | 7.8 | ..... | N | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | Gloomy..... | Alexander Watt. |
| Donaghadee | 30.37 | 771.4 | 30.40 | 772.1 | 52 | 11.1 | ..... | NNW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 30.25 | 768.3 | 30.28 | 769.1 | 49 | 9.4 | ..... | NNW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | Gloomy..... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 30.31 | 769.9 | 51.8 | 11.0 | ..... | NW | 1.6 | 0.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | Thomas Mackereth. |
| Falmouth, Observatory | 30.18 | 766.6 | 30.42 | 772.7 | 51.7 | 10.9 | ..... | NNW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff. |
| Fort Napier, (Natal) | 27.72 | 704.1 | 29.92 | 760.0 | 79.0 | 26.1 | ..... | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.66 | 753.4 | 29.90 | 759.4 | 93 | 33.9 | ..... | NE | ..... | ..... | 0 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's College | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.20 | 767.1 | 30.25 | 768.3 | 60.0 | 15.6 | ..... | W | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | Corpl. C. Aitken, A. H. C. |
| Glasgow, Observatory | 30.10 | 764.5 | 30.30 | 769.6 | 52.5 | 11.4 | ..... | WNW | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | D. G. Maclean. |
| Great Yarmouth | 30.23 | 767.8 | 30.24 | 768.1 | 47 | 8.3 | ..... | NNW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 30.13 | 765.3 | 30.30 | 769.6 | 50.7 | 10.4 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | The Staff, for G. B. Airy. |
| Guernsey | 30.13 | 765.3 | 30.35 | 770.9 | 50.5 | 10.3 | ..... | NNW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 30.42 | 772.7 | 54 | 12.2 | ..... | N | ..... | ..... | 2 | ..... | 2c | ..... | ..... | 0 | 0 | Fine..... | M. P. Moyle. |
| Holyhead | 30.35 | 770.9 | 30.40 | 772.1 | 50 | 10.0 | ..... | NNW | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | John Tilston. |
| Jersey | 30.09 | 764.3 | 30.39 | 771.9 | 50.2 | 10.1 | ..... | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 30.31 | 769.9 | 52.8 | 11.6 | ..... | NNW | 11 | 4.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Threatening | The Staff. |
| Kingstown | 30.40 | 772.1 | 30.43 | 772.9 | 50 | 10.0 | ..... | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 30.32 | 770.1 | 51.4 | 10.8 | ..... | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.99 | 761.7 | 30.05 | 763.3 | 67.0 | 13.9 | ..... | NE | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Sgt. Fred. Travis, A. H. |
| Nairn | 30.19 | 766.8 | 30.28 | 769.1 | 51 | 10.6 | ..... | W | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ⅜ clouded... | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 30.01 | 762.2 | 71.2 | 21.8 | ..... | N | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 30.13 | 765.3 | 30.32 | 770.1 | 53.1 | 11.7 | ..... | NNE | ..... | ..... | 1 | ..... | 10k | ..... | N | 0 | 0 | Overcast..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.79 | 756.7 | 30.32 | 770.1 | 51.5 | 10.8 | ..... | NNW | ..... | ..... | 3–4 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.32 | 770.1 | 52 | 11.1 | ..... | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Mr. Lucas. |
| Plymouth | 30.30 | 769.6 | 30.38 | 771.6 | 52.7 | 11.5 | ..... | N | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Merrifield. |
| Roche's Point | 30.44 | 773.2 | 30.49 | 774.4 | 52 | 11.1 | ..... | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | W. Kennedy. |
| Saint Ann's Head | 30.26 | 768.6 | 30.42 | 772.7 | 52 | 11.1 | ..... | NW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | John C. Walker. |
| Sandwick Manse, (Orkneys.) | ..... | ..... | 30.20 | 767.1 | 47.1 | 8.4 | ..... | W | 29 | 13.0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | Rev. C. Clouston, L.L. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.50 | 749.3 | 89.8 | 4.3 | ..... | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | Sergt. W. H. Lyne. |
| Sheffield | 30.03 | 762.7 | 30.32 | 770.1 | 54.4 | 12.4 | ..... | NW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0 | 0 | Overcast..... | W. F. Cooper. |
| Silloth Rectory | 30.28 | 769.1 | 30.31 | 769.9 | 62.4 | 16.9 | 55 | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.92 | 760.0 | 30.32 | 770.1 | 53.1 | 11.7 | ..... | NW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. S. J. Perry. |
| Stornoway, Lewis C., (Hebr.) | ..... | ..... | 30.26 | 768.6 | 51 | 10.6 | ..... | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Sutherland. |
| Stratfield Turgiss | 30.11 | 764.8 | 30.33 | 770.4 | 54.0 | 12.2 | ..... | NW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. C. H. Griffith, F.M.S |
| Thurso | ..... | ..... | 30.21 | 767.3 | 50 | 10.0 | ..... | WNW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 30.42 | 772.7 | 56 | 13.3 | ..... | N | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 30.52 | 775.2 | 53.4 | 11.9 | ..... | NNW | 4 | 1.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | The Staff. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.02 | 762.5 | 67.0 | 19.4 | 77 | W | ..... | ..... | 2 | ..... | 7k | ..... | ..... | 0 | 0 | ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.80 | 756.9 | 29.99 | 761.7 | 83.0 | 28.3 | 76 | E | 13.5 | 6.0 | ..... | 4 | 3 | ..... | ENE | 0.16 | 4.1 | Cloudy; fine | C. Meldrum. |
| Melbourne, Observatory | 30.14 | 765.5 | 30.23 | 767.8 | 58.6 | 14.8 | 75 | ESE | 3 | 1.3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Fine..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1, 400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m.

| MARINE SERIES. VESSELS. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Algeria, N. 48° 57', W. 34° 35' | ..... | ..... | 30.24 | 768.1 | 46.0 | 7.8 | ..... | NNW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 15* | NW;NE | Overcast..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. C. Frehn. [R. |
| S. S. Peruvian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.22 | 666.0 | ..... | ..... | 70.2 | 21.2 | 91 | SE | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0.14 | 3.6 | ..... | Federico Maison. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.73 | 755.2 | 29.78 | 756.4 | 40.1 | 4.5 | 67 | NNW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... |
| Faröe | 29.90 | 759.6 | 29.92 | 760.0 | 46.4 | 8.0 | 46 | N | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.72 | 755.0 | 29.77 | 756.1 | 19.6 | — 6.9 | ..... | S | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | ..... |
| Stykkisholm, (Iceland) | 29.69 | 754.1 | 29.73 | 755.2 | 40.1 | 4.5 | 90 | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | ..... |
| Thorshavn, (Faröe) | 29.98 | 761.6 | 30.02 | 762.5 | 47.7 | 8.7 | 98 | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | ..... |
| Vestervig | 29.78 | 756.4 | 29.95 | 760.7 | 43.2 | 6.2 | 85 | NNE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.89 | 759.3 | 30.45 | 773.3 | 44.6 | 7 | 86 | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.008 | 0.2 | Covered | Collignon, Director. |
| Amiens, Normal School | 30.14 | 765.6 | 30.25 | 768.4 | 54.0 | 12.2 | 86 | WNW | ..... | ..... | 2 | ..... | 8 | ..... | W | 0.087 | 2.2 | Very cloudy | Bonvarne, Director. |
| Avignon, Normal School | 29.97 | 761.3 | 30.05 | 763.3 | 49.3 | 9.6 | 61 | NNW | ..... | ..... | 6 | ..... | 5 | ..... | N | 0 | 0 | Cloudy | Mr. Giraud, Director |
| Bar-sur-Seine | 29.64 | 752.9 | 30.21 | 767.4 | 45.7 | 7.6 | 83 | NE | ..... | ..... | 1 | ..... | 10 | ..... | NE | 0.134 | 3.4 | Covered | C. Saillard. |
| Beaumette Obs'y (Angers) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Beauvais | ..... | ..... | ..... | ..... | 50.2 | 10.1 | 77 | NW | ..... | ..... | 2 | ..... | 10 | ..... | NNW | 0.04 | 1. | Covered | Albert Cheux. |
| Besançon | 29.28 | 743.7 | 30.20 | 767.1 | 43.5 | 6.4 | 97 | SSW | ..... | ..... | 2 | ..... | 8 | ..... | W | 0.335 | 8.5 | Very cloudy | Normal School. |
| Bourg-en-Bresse | 29.27 | 743.5 | 30.18 | 766.6 | 43.5 | 6.4 | 91 | N | ..... | ..... | 4 | ..... | 2ck | ..... | N | 0.16 | 4. | Slightly cov. | Normal School. |
| Bourges, Normal School | 29.68 | 753.9 | 30.24 | 768.2 | 48.2 | 9 | 89 | W | ..... | ..... | 4 | ..... | 5 | ..... | S | 0.24 | 6. | Cloudy | A. Wagner, Director. |
| Brest, Naval Observatory | 30.11 | 764.7 | 30.32 | 770.2 | 50.5 | 10.3 | 72 | NNW | ..... | ..... | 3 | ..... | 10 | ..... | N | 0 | 0 | Misty | The Staff. |
| Carcassonne, Normal School | 29.86 | 758.4 | 30.29 | 769.3 | 44.6 | 7 | 85 | W | ..... | ..... | 2 | ..... | 5 | ..... | NW | 0 | 0 | Cloudy | Vateau, Director. |
| Caen | 30.33 | 770.3 | 30.40 | 772.2 | 50.4 | 10.2 | 86 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Normal School. |
| Chartres, Normal School | 29.65 | 753.0 | 30.22 | 767.6 | 52.2 | 11.2 | 83 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.36 | 758.5 | 30.19 | 766.8 | 45.5 | 7.5 | 89 | NW | ..... | ..... | 3 | ..... | 10n | ..... | NW | 0.244 | 6.2 | Covered | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs. | 28.80 | 731.6 | 30.19 | 766.8 | 46.2 | 7.9 | 80 | NW | ..... | ..... | 2 | ..... | 10 | ..... | NW | 0 | 0 | Covered | Alluard, Director. |
| Commercy, Normal School | 29.28 | 743.6 | 30.18 | 766.5 | 44.6 | 7 | 83 | NW | ..... | ..... | 2 | ..... | 8 | ..... | NW | 0.071 | 1.8 | Very cloudy | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.79 | 731.3 | 29.93 | 760.3 | 53.4 | 11.9 | 41 | NW | ..... | ..... | 6 | ..... | 2 | ..... | NW | 0 | 0 | ¼ covered | M. Kina. |
| Grenoble | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| La Roche-sur-Yon, N. School | 30.12 | 765.0 | 30.34 | 770.5 | 52.5 | 11.4 | 85 | NW | ..... | ..... | 1 | ..... | 8 | ..... | NW | 0 | 0 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 30.02 | 762.4 | 30.33 | 770.3 | 52.0 | 11.1 | 75 | NE | ..... | ..... | 4 | ..... | 8 | ..... | NE | 0 | 0 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.21 | 742.0 | 30.16 | 766.0 | 45.3 | 7.4 | 94 | NW | ..... | ..... | 2 | ..... | 10 | ..... | NW | 0.256 | 6.50 | Raining | Voudez, Director. |
| Lorient, Naval Observatory | 30.30 | 769.5 | 30.40 | 772.1 | 52.5 | 11.4 | 78 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | T. Carré, Director. |
| Mâcon, Normal School | 29.48 | 748.9 | 30.20 | 767.0 | 44.1 | 6.7 | 97 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | M. Marchal, Director. |
| Metz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. A. Schuster, Dir. |
| Mirecourt | 29.07 | 738.4 | 30.14 | 765.5 | 44.6 | 7 | 77 | NW | ..... | ..... | 6 | ..... | 10 | ..... | SE | 0.138 | 3.5 | Covered | Normal School. |
| Nismes, Normal School | 29.87 | 758.6 | 30.11 | 764.9 | 52.5 | 11.4 | 50 | N | ..... | ..... | 2 | ..... | 10 | ..... | N | 0 | 0 | Covered | Boyer, Director. |
| Orleans, Normal School | 29.80 | 758.4 | 30.25 | 768.3 | 52.9 | 11.6 | 71 | N | ..... | ..... | 4 | ..... | 8 | ..... | N | 0 | 0 | Very cloudy | Bernard, Director. |
| Paris, Observatory | 30.02 | 762.4 | 30.26 | 768.6 | 49.1 | 9.5 | 85 | NW | ..... | ..... | 1 | ..... | 10 | ..... | NNW | 0.010 | 0.25 | Covered | National Observatory. |
| Privas | 29.05 | 737.8 | 30.11 | 764.7 | 59.0 | 15 | 70 | N | ..... | ..... | 4 | ..... | 10 | ..... | S | 0 | 0 | Covered | Normal School |
| Puy de Dome (Summit) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.31 | 769.9 | 30.34 | 770.7 | 58.6 | 14.8 | 68 | NW | ..... | ..... | 1 | ..... | 10 | ..... | NW | 0 | 0 | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 30.21 | 767.4 | 30.30 | 769.6 | 52.3 | 11.3 | 75 | N | ..... | ..... | 3 | ..... | 10 | ..... | N | 0.016 | 0.4 | Covered | F. Lucard, Director. |
| Saint Malo (Port) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. H. Hercouet. |
| Tarbes, Normal School | 29.25 | 743.0 | 30.36 | 771.1 | 48.2 | 9 | 61 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | T. Hugues, Director. |
| Villefranche | 29.51 | 749.5 | 30.19 | 766.9 | 49.5 | 9.7 | 81 | N | ..... | ..... | 2 | ..... | 10 | ..... | NW | 0.071 | 1.8 | Covered | Vilot, Director |
| SUB-SERIES. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Fort de France, Martinique | 29.81 | 757.1 | 29.84 | 757.8 | 80.6 | 27 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchési. |
| Lyons | ..... | ..... | 30.20 | 767.0 | 48.4 | 9.1 | ..... | ..... | ..... | ..... | ..... | ..... | 8 | ..... | ..... | 0.055 | 1.4 | ..... | M. Jeys. |
| Marseilles, Observatory | ..... | ..... | 29.90 | 759.5 | 55.2 | 12.9 | 60 | NNW | ..... | ..... | 6-8 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | The Staff. |
| Mont-Louis | 24.94 | 633.4 | 30.25 | 768.4 | 32.5 | 0.3 | 64 | N | 14.9 | 6.66 | ..... | ..... | 5 | ..... | N | 0.004 | 0.1 | ..... | Mr. Falguère. |
| Nice | 29.82 | 757.3 | 29.89 | 759.3 | 55.9 | 13.3 | 59 | S | ..... | ..... | 3 | ..... | 1 | ..... | W | 0 | 0 | Clear | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.97 | 761.3 | 30.25 | 768.3 | 48.0 | 8.9 | 92 | NNW | ..... | ..... | 4 | ..... | 10 | ..... | NW | 0.035 | 0.9 | Sprinkling | Marié Davy, Director. |
| Perpignan | ..... | ..... | 30.16 | 765.8 | 55.6 | 13.1 | 46 | NW | 29.8 | 13.33 | ..... | ..... | 5 | ..... | N | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.57 | 573.2 | ..... | ..... | 24.8 | — 4.0 | ..... | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.075 | 1.9 | Snowy | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 30.10 | 764.4 | 30.26 | 768.6 | 49.8 | 9.9 | 83 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | NNW | 0.024 | 0.6 | Covered | E. Renou. |
| Toulouse, Observatory | 29.90 | 751.7 | 30.32 | 770.2 | 45.5 | 7.5 | 83 | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.059 | 1.50 | Rainy | The Staff. |
| Tours | 30.10 | 764.4 | 30.29 | 769.4 | 52.5 | 11.4 | 78 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | N | 0 | 0 | ..... | O. Marquet. |
| Versailles, (near Paris) | ..... | ..... | 30.26 | 768.6 | 51.4 | 10.8 | 75 | NNE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.039 | 0.98 | Covered | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.17 | 762.2 | 30.19 | 766.9 | 48.2 | 9.0 | 87 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | Inap. | Inap. | Covered | Marc Dechevrens, S. J. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 29.60 | 751.8 | 29.77 | 756.1 | 47.3 | 8.5 | 63 | N | | | 1 | | 7 | | | 0.325 | 8.28 | | Prof. Arndt. |
| Breslau | 29.11 | 739.3 | 29.63 | 752.6 | 39.0 | 3.9 | 100 | NW | | | 4 | | 10 | NNW | | 0.148 | 3.77 | Raining | Royal University Obs'y |
| Carlsruhe | 29.59 | 751.5 | 30.02 | 762.5 | 47.5 | 8.6 | 63 | NW | | | 2 | | 10 | | | 0 | 0 | | Albert Senz. |
| Cassel | 29.35 | 745.5 | 29.96 | 760.9 | 42.4 | 5.8 | 80 | N | | | 8 | | 10 | NW | | 0.083 | 2.12 | | Dr. H. Möhl. |
| Crefeld | 29.87 | 758.6 | 30.03 | 762.7 | 48.2 | 9.0 | 64 | N | | | 6 | | 8 | | | 0.28 | 7. | | Director Lose. |
| Emden | 30.05 | 763.3 | 30.09 | 764.2 | 43.9 | 6.6 | 66 | NW | | | 5 | | 5 | | | 0.098 | 2.5 | | Prof. Prestel. |
| Frankfort on the Main | 29.69 | 754.1 | 30.07 | 763.6 | 46.0 | 7.8 | 57 | NNW | | | 4 | | 8 | | | 0.110 | 2.8 | | Physical Society. |
| Friedrichshafen | 28.62 | 727.0 | 30.10 | 764.6 | 39.9 | 4.4 | 82 | W | | | 6 | | 10 | W | | 0.091 | 2.3 | | M. Wilhelm. |
| Hamburg | 29.82 | 757.3 | 29.89 | 759.1 | 48.0 | 8.9 | 70 | NNW | | | 1 | | 7k | | | 0.083 | 2.1 | Fine | Captain F. Hegemann. |
| Kiel | 29.87 | 758.8 | 29.89 | 759.2 | 44.1 | 6.7 | 49 | N | | | 3 | | 4 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.45 | 748.0 | 29.53 | 750.0 | 36.5 | 2.5 | 78 | NW | | | | | | | | 0.146 | 3.68 | Snowing | Prof. E. Luther. |
| Köslin | | | 29.68 | 753.8 | 36.7 | 2.6 | | NW | | | 2 | | 4 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.43 | 747.6 | 29.86 | 758.5 | 40.6 | 4.8 | 87 | NW | | | 5 | | 10 | | | 0.409 | 10.4 | | Prof. Bruhns. |
| Memel, Naval School | 29.43 | 747.6 | 29.48 | 748.8 | 34.9 | 1.6 | 85 | NW | | | 6 | | 10cs | | | | | Squally | Reinbrech von Skalweit. |
| Neufahrwasser | 29.58 | 751.4 | 29.60 | 751.8 | 37.4 | 3.0 | 79 | N | | | 4 | | 9 | | | 0.008 | 0.2 | | A. Lothes. |
| Posen | 29.40 | 746.7 | 29.70 | 754.4 | 40.1 | 4.5 | 90 | NW | | | 6–7 | | 9 | | | 0.094 | 2.39 | Cloudy | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.54 | 750.2 | 30.10 | 764.4 | 47.8 | 8.8 | 58 | N | | | 3 | | 9 | NW | | 0.194 | 4.92 | | Dr. Schur. |
| Stuttgart | 29.04 | 737.7 | 30.01 | 762.3 | 40.6 | 4.8 | 79 | W | | | 1 | | 10 | | | 0.024 | 0.6 | Light rain | Prof. Schoder. |
| Treves, (Trier) | 29.47 | 748.6 | 30.00 | 761.9 | 46.4 | 8.0 | 68 | NW | | | 5 | | 10 | | | 0.034 | 0.86 | Foggy | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.41 | 721.5 | 29.96 | 760.9 | 37.4 | 3.0 | 81 | Calm | 0 | 0 | | | 10 | | | 0.091 | 2.3 | Covered | Dr. Von Bebber. |
| Wustrow, Naval School | 29.80 | 756.9 | 29.84 | 757.9 | 41.2 | 5.1 | 72 | N | | | 1 | | 4 | | | 0.072 | 1.82 | Fair | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.36 | 745.8 | 29.76 | 755.9 | 52.5 | 11.4 | | W | | | 4.0 | | | | | | | Clear | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.86 | 758.5 | 29.91 | 759.8 | 83.9 | 28.8 | 36 | WSW | 21.0? | 9.4? | | | 1 | | | 0 | 0 | D. clouds | |
| Deesa | 29.41 | 747.0 | 29.88 | 758.9 | 91.4 | 33.0 | 28 | Calm | | | | | 3 | SSW | | 0 | 0 | D. clouds | |
| Bombay | 29.85 | 758.2 | 29.89 | 759.1 | 82.1 | 27.8 | 72 | WNW | 8.0 | 3.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.84 | 707.0 | 29.80 | 757.0 | 88.1 | 31.2 | 29 | N | | | | | 9 | WNW | | 0 | 0 | Dust-whirl | |
| Lahore | 29.15 | 740.3 | 29.89 | 759.2 | 81.0 | 27.2 | 23 | NW | 3.5 | 1.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.36 | 695.0 | 29.86 | 758.6 | 83.7 | 28.7 | 58 | W | 8.0 | 3.6 | | | 5 | W | | 0 | 0 | D. clouds | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.96 | 735.5 | 29.86 | 758.5 | 75.8 | 24.3 | 39 | NW | 2.8 | 1.2 | | | | | | 0 | 0 | | |
| Agra | 29.35 | 745.6 | 29.92 | 760.0 | 79.7 | 26.5 | 25 | N | | | | | | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.76 | 730.5 | 29.77 | 756.1 | 97.3 | 36.3 | 22 | Calm | 4.2 | 1.9 | | | 4 | E | | 0 | 0 | D. clouds | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.51 | 749.6 | 29.89 | 759.1 | 80.3 | 26.8 | 64 | WNW | 3.6 | 1.6 | | | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.57 | 751.0 | 29.88 | 758.9 | 80.7 | 27.1 | 35 | Calm | 2.4 | 1.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.67 | 753.7 | 29.86 | 758.3 | 84.4 | 29.1 | 24 | W | 3.0 | 1.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.86 | 707.6 | 29.87 | 758.8 | 78.3 | 25.7 | 34 | NW | 7.6 | 3.4 | | | 0 | | | 0.58 | 14.7 | Thunder-storm | |
| Cuttack | 29.79 | 756.7 | 29.87 | 758.8 | 79.0 | 26.1 | 58 | SW | 5.8 | 2.6 | | | 10 | | | 0.26 | 6.6 | Overcast | |
| Calcutta (Alipore) | 29.85 | 758.1 | 29.87 | 758.7 | 83.6 | 28.7 | 65 | SW | 3.0 | 1.3 | | | 3 | | S | 0 | 0 | D. clouds | |
| Goalpara | 29.43 | 747.6 | 29.82 | 757.5 | 79.7 | 26.5 | 35 | Calm | 4.1 | 1.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.82 | 757.5 | 29.92 | 759.9 | 80.9 | 27.2 | 74 | WSW | 7.5 | 3.4 | | | 8 | | | 0 | 0 | Misty | |
| Sibsagar | 29.49 | 749.1 | 29.84 | 757.8 | 72.2 | 22.3 | 89 | SE | 3.6 | 1.6 | | | 10 | W | W | 0.36 | 9.1 | D. clouds | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.51 | 724.2 | 29.86 | 758.5 | 86.5 | 30.3 | 29 | NW | 4.1 | 1.8 | | | | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.26 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.8 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.41 | 747.0 | 29.83 | 757.7 | 43.3 | 6.3 | 41 | SW | 1.8 | 0.8 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 29.69 | 754.2 | 29.81 | 757.1 | 45.7 | 7.6 | 47 | ENE | 1.3 | 0.6 | ..... | ..... | 8 | N | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.61 | 752.1 | 29.81 | 757.1 | 46.2 | 7.9 | 47 | E | 1.8 | 0.8 | ..... | ..... | 1 | W | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.44 | 722.4 | 29.78 | 756.5 | 56.5 | 13.6 | 19 | NW | ..... | ..... | 6 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.27 | 743.5 | 29.80 | 756.8 | 57.6 | 14.2 | ..... | W | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 28.93 | 734.8 | 29.85 | 758.3 | 54.1 | 12.3 | 42 | WSW | 2.5 | 1.1 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 27.99 | 708.7 | 29.85 | 758.2 | 56.7 | 13.7 | 25 | E | ..... | ..... | 2 | ..... | 1 | NNE | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.70 | 754.4 | 29.93 | 760.2 | 54.5 | 12.5 | 56 | SSW | ..... | ..... | 2 | ..... | 4 | NE | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.74 | 755.3 | 29.91 | 759.7 | 54.1 | 12.3 | 51 | SE | 6.8 | 2.8 | ..... | ..... | 4 | SE | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.48 | 748.9 | 29.81 | 757.1 | 55.0 | 12.8 | 51 | SSE | ..... | ..... | 6 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.62 | 752.4 | 29.89 | 759.1 | 54.1 | 12.3 | 40 | SW | ..... | ..... | 4 | ..... | 8 | W | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 29.84 | 757.9 | 29.93 | 760.1 | 54.3 | 12.4 | 61 | SSW | 5.6 | 2.5 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 29.33 | 757.6 | 29.88 | 758.9 | 46.6 | 8.1 | 74 | N | 6.8 | 2.8 | ..... | ..... | 8 | N | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.28 | 718.3 | 29.89 | 759.1 | 49.1 | 9.5 | 51 | SW | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0.069 | 1.6 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.82 | 757.4 | 29.93 | 760.3 | 55.6 | 13.1 | 62 | SSW | ..... | ..... | 4 | ..... | 3 | S | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.69 | 754.2 | 29.87 | 758.8 | 54.5 | 12.5 | 49 | W | 7.4 | 3.3 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U. | 29.78 | 756.4 | 29.98 | 761.5 | 58.3 | 14.6 | 52 | SSW | ..... | ..... | 4 | ..... | 6 | WSW | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 60.0 | 10.0 | 53 | NNW | 18.6 | 8.3 | ..... | ..... | 2 | NNW | ..... | 0.098 | 2.5 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.79 | 756.6 | 29.98 | 761.6 | 53.6 | 12.0 | 57 | NW | ..... | ..... | 2 | ..... | 10 | NW | ..... | 0.012 | 0.3 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.12 | 739.6 | 30.02 | 762.6 | 51.8 | 11.0 | 75 | SW | 11.2 | 5.0 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.76 | 755.9 | 30.02 | 762.5 | 52.9 | 11 6 | 52 | W | 5.6 | 2.5 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.91 | 759.7 | 29.98 | 761.6 | 55.9 | 13.3 | 57 | E | ..... | ..... | 2 | ..... | 6 | WNW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.41 | 746.9 | 29.96 | 761.0 | 53.6 | 12.0 | 54 | SE | 4.3 | 1.9 | ..... | ..... | 5 | SE | ..... | 0 | 0 | ..... | Prof. F. Brioschi |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.8 ft.; Mondovi, 556 m., or 1,824.7 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 30.13 | 765.3 | 30.20 | 767.1 | 47.0 | 8.3 | 74 | SW | 3.3 | 1.5 | ..... | 9ck;s | 0 | ..... | ..... | 0 | 0 | Cloudy | The Observatory. |
| Tokei (Yeddo) University | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. P. V. Veeder. |

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Castillo, A. E. |
| Guadalajara | 25.05 | 636.3 | 29.88 | 759.0 | 59.0 | 15.0 | 33 | N | 5.1 | 2.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | Prof. L. Perez. |
| Guanajuato | 24.98 | 634.4 | 30.01 | 762.3 | 46.4 | 8.0 | 60 | SW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Blue sky | Prof. V. Fernandez |
| Leon | 23.60 | 599.6 | 29.85 | 758.2 | 55.9 | 13.3 | 64 | W | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | Prof. M. Leal. |
| Mexico | ..... | ..... | ..... | ..... | 54.3 | 12.4 | 72 | Calm | 0 | 0 | ..... | 0 | 1ks | ..... | SW | 0 | 0 | Clear. | Central Observatory. |
| Orizaba | 23.01 | 584.4 | 30.05 | 763.4 | 52.7 | 11.5 | 50 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 49 3 | 9.6 | 69 | SW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | M. V. de Leon, M. E. |
| Puebla | 23.28 | 591.4 | 29.98 | 761.5 | 51.0 | 10.9 | 86 | E | 2.0 | 0.9 | ..... | 0 | 5sn | ..... | S | 0 | 0 | ½ cloudy | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 29.91 | 759.8 | 29.92 | 760.1 | 70.7 | 21.5 | 89 | Calm | 0 | 0 | ..... | 0 | 10k | ..... | S | 0 | 0 | Covered | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 29.93 | 760.2 | 29.96 | 760.9 | 73.4 | 23.0 | 74 | Calm | 0 | 0 | ..... | 0 | 10sk | ..... | ..... | 0 | 0 | Covered | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 44.6 | 7.0 | 70 | SW | 11.0 | 4.9 | ..... | 6c | 0 | SW | ..... | 0 | 0 | Hazy | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Spina. [M. M. D. D. |
| Morelia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Tena, F. L. Param. |

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m,, or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.21 | 767.4 | 30.21 | 767.4 | 46.0 | 7.8 | ..... | NNW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.256 | 6.5 | ..... | |
| Groningen | 29.99 | 761.7 | 30.04 | 763.1 | 44.2 | 6.8 | ..... | N | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0.098 | 2.5 | ..... | |
| Helder | 30.11 | 764.7 | 30.11 | 764.7 | 44.4 | 6.9 | ..... | NW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.016 | 0.4 | ..... | |
| Hellevoetsluis | 30.17 | 766.2 | 30.17 | 766.2 | 46.0 | 7.8 | 97 | NNW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 30.08 | 764 1 | 30.13 | 765.3 | 46.0 | 7.8 | 88 | NNW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | Dull | H. v d Brink. |

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.93 | 760.1 | 29.98 | 761.5 | 41.0 | 5.0 | 60 | NNW | 5.4 | 2.4 | ..... | ..... | 1 | ..... | ..... | 0.299 | 7.6 | ..... | ..... |
| Brönö | 29.81 | 757.2 | 29.85 | 758.2 | 33.8 | 1.0 | 81 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... |
| Christiania | 29.72 | 754.9 | 29.57 | 758.7 | 43.2 | 6.2 | 26 | NNE | 11 | 5 | ..... | ..... | 2 | ..... | ..... | 0.012 | 0.3 | ..... | ..... |
| Tromsö | 29.59 | 751.5 | 29.63 | 752.6 | 31.3 | — 0.4 | 96 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0.079 | 2.0 | Snowing | ..... |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h..4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.90 | 759.4 | 30.09 | 764.3 | 59.7 | 15.4 | 98 | WNW | 8.1 | 3.6 | ..... | ..... | 3 | ..... | ..... | 0.512 | 13.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.25 | 742.9 | 30.28 | 769.2 | 56.1 | 13.4 | 30 | N | 7.4 | 3.3 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.23 | 767.8 | 30.32 | 770.0 | 61.7 | 16.5 | 45 | SE | 12.5 | 5.6 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.94 | 760.4 | 30.30 | 769.6 | 57.6 | 14.2 | 31 | ENE | 7.4 | 3.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.02 | 762.6 | 30.11 | 764.8 | 58.6 | 14.8 | 84 | WSW | 19.2 | 8.6 | ..... | ..... | 10 | ..... | ..... | 0.366 | 9.3 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 1 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.71 | 754.6 | 29.71 | 754.7 | 86.0 | 30.0 | ..... | ENE | ..... | ..... | 3 | ..... | 9 | ..... | ENE | 1 | ..... | Blue sky | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Sado, Dakar, Sennegambia | 30.00* | 762.0* | 30.01* | 762.3* | 68.9 | 20.5 | ..... | NNE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 2 | NNE | Blue sky | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.79 | 756.6 | 29.79 | 756.7 | ..... | ..... | ..... | WNW | ..... | ..... | 2 | ..... | 5 | ..... | WNW | 1 | ..... | Blue sky | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreina, dos Anjos, Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.14 | 740.2 | 29.58 | 751.3 | 34.0 | 1.1 | 85 | SSE | 4 | 2 | ..... | 10n | ..... | ..... | ..... | Snowing | ..... | Astronomical Obs. |
| Wilna | 29.10 | 739.0 | 29.53 | 750.0 | 35.1 | 1.7 | 63 | S | 9 | 4 | ..... | 10 | ..... | ..... | ..... | Heavy clouds | ..... | Astronomical Obs. |
| Dorpat | 29.16 | 740.7 | 29.41 | 747.0 | 34.9 | 1.6 | 93 | S | 4 | 2 | ..... | 10n | ..... | ..... | ..... | Light rain | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.43 | 747.5 | 29.45 | 747.9 | 34.9 | 1.6 | 94 | Calm | 0 | 0 | ..... | 10n | ..... | ..... | ..... | Snow & fog | ..... | Central Physical Obs. |
| Kuopio | 29.20 | 741.7 | 29.53 | 750.1 | 31.5 | — 0.3 | 91 | Calm | 0 | 0 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Ch. Forsten. |
| Kieff | 28.89 | 733.8 | 29.54 | 750.4 | 31.8 | — 0.1 | 47 | NNE | 11 | 5 | ..... | 6c;ck | ..... | ..... | ..... | Solar corona | ..... | Physical Cabinet |
| Nikolaiev | 29.24 | 742.7 | 29.31 | 744.5 | 32.2 | 0.1 | 98 | NE | 18 | 8 | ..... | 10n | ..... | ..... | ..... | Snowing | ..... | Kurdakof. |
| Kertch | 29.17 | 741.0 | 29.19 | 741.5 | 48.9 | 9.4 | 87 | NW | 9 | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.16 | 740.6 | 29.72 | 755.0 | 33.4 | 0.8 | 66 | S | 9 | 4 | ..... | 6ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.12 | 739.7 | 29.33 | 744.9 | 39.2 | 4.0 | 77 | ENE | 13 | 6 | ..... | 10 | ..... | ..... | ..... | Blank | Blank | Meteorological Obs. |
| Archangel | 29.41 | 746.9 | 29.43 | 747.4 | 22.6 | — 5.2 | 96 | W | 4 | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.17 | 715.4 | 29.54 | 750.4 | 63.5 | 17.5 | 47 | Calm | 0 | 0 | ..... | 6k | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 29.69 | 754.0 | 29.60 | 751.9 | 43.5 | 6.4 | 69 | E | 27 | 12 | ..... | 8s | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Kasan | 29.62 | 752.3 | 29.90 | 759.5 | 27.5 | — 2.5 | 63 | S | 7 | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.93 | 734.8 | 29.92 | 760.0 | 25.3 | — 3.7 | 65 | W | 18 | 8 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.57 | 751.0 | 29.79 | 756.7 | 70.7 | 21.5 | 71 | ESE | 13 | 6 | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.38 | 720.9 | 30.07 | 763.7 | 60.1 | 15.6 | 22 | NNW | 4 | 2 | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.61 | 752.0 | 30.16 | 766.0 | 27.3 | — 2.6 | 68 | SW | 0 | 0 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.78 | 756.5 | 30.12 | 765.1 | 29.7 | — 1.3 | 79 | SE | 7 | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Krotkowo* | 29.51 | 749.6 | 30.01 | 762.2 | 28.2 | — 2.1 | 63 | S | 16 | 7 | ..... | 1s | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Peking, (China) | 29.96 | 760.9 | 30.10 | 764.5 | 54.7 | 12.6 | 15 | NW | 16 | 7 | ..... | 5ks | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.68 | 703.1 | 29.85 | 758.3 | 18.1 | — 7.7 | 69 | NW | 4 | 2 | ..... | 8 | ..... | ..... | ..... | Light clouds | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 11.3 | —11.5 | 97 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | ..... | ..... | 30.05 | 763.2 | 59.0 | 15 | 33 | W | 6.4 | 2.86 | ..... | 7ck;k | 0 | N | ..... | 0 | 0 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.35 | 770.9 | 30.41 | 772.4 | 51.1 | 10.6 | 80 | N | 1.9 | 0.86 | ..... | ..... | 10 | ..... | ..... | 0.079 | 2.0 | Covered | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.32 | 693.9 | ..... | ..... | 44.6 | 7.0 | 85 | SE | 9.2 | 4.11 | ..... | 0 | 8 | ..... | ..... | 0 | 0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.99 | 711.0 | 30.25 | 768.3 | 54.3 | 12.4 | 40 | NE | 17.2 | 7.67 | ..... | 0 | 1 | ..... | ..... | 0 | 0 | Almost clear | The Staff. |
| Murcia, Met. Obs'y | 30.08 | 764.0 | 30.23 | 767.8 | 64.4 | 18.0 | 48 | WSW | 1.4 | 0.64 | ..... | 0 | 1 | ..... | ..... | 0 | 0 | Almost clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.39 | 746.6 | 30.30 | 769.5 | 57.4 | 14.1 | 44 | E | 1.8 | 0.81 | ..... | 2 | 0 | Calm | ..... | 0 | 0 | Light clouds | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.94 | 760.5 | 30.01 | 762.2 | 71.4 | 21.9 | 76 | NNE | 5.8 | 2.6 | ..... | 2ck | 5k | SE | NE | 0 | 0 | Fair | Benito Vines, S J |
| San Fernando, Naval Obs'y | 30.21 | 767.4 | 30.31 | 769.9 | 59.4 | 15.2 | 57 | W | 4.9 | 2.2 | ..... | 0 | 2 | ..... | W | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.85 | 758.3 | 29.95 | 760.6 | 80.2 | 26.8 | 84 | SE | 0 | 0 | ..... | 2cs | 0 | SE | ..... | 0 | 0 | Clear | Leonardo de Tejeda, Chief of Engineers. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft. The barometer readings at Barcelona are published as given.

## SWEDISH SERIES.



Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. ntigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.63 | 752.5 | 29.67 | 753.5 | 29.5 | — 1.4 | | N | | | 2 | | 2 | | | | | | |
| Umea | 29.63 | 752.5 | 29.68 | 753.8 | 34.2 | 1.2 | 78 | N | | | 4 | | 9 | | | 0.024 | 0.6 | | |
| Hernosand | 29.67 | 753.7 | 29.72 | 755.0 | 37.0 | 2.8 | 46 | N | | | 4 | | 5 | | | 0.024 | 0.6 | | |
| Stockholm | 29.44 | 747.7 | 29.61 | 752.2 | 32.7 | 0.4 | 85 | NNW | | | 6 | | 10 | | | 0 | 0 | | |
| Wisby | 29.40 | 749.1 | 29.55 | 750 6 | 34.9 | 1.6 | 75 | NNW | | | 7 | | 10 | | | 0.224 | 5.7 | | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.58 | 751.3 | 29.65 | 753.2 | 32.7 | 0.4 | 78 | NNW | 20.8 | 9.3 | | | 10 | | NNE | 0.001 | 0.03 | Snowing | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.69 | 728.7 | 30.15 | 765.9 | 41.7 | 5.4 | 73 | NNE | | | 2 | | 3 | | | 0.008 | 0.2 | Cloudy | The Observatory. |
| Zurich | 28.45 | 722.5 | 30.14 | 765.5 | 38.3 | 3.5 | 83 | NW | | | 1 | | 8 | | | 0.039 | 1.0 | Cloudy | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +4.1 mm.; Thermometer, —2.8 cent.; Relative Humidity, +13 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | | | 29.53 | 750.0 | 38.8 | 3.8 | 76 | WNW | 11 | 5.0 | | | 10 | | W | 0 | 0 | | The Observatory. |
| Fao, (Persian Gulf) | | | | | | | | | | | | | | | | | | | |
| Salonica | | | | | | | | | | | | | | | | | | | |
| Valona | | | | | | | | | | | | | | | | | | | B. Stefanides. |
| Varna | | | 29.87 | 758.7 | 49.6 | 9.8 | | W | | | 2 | | 5 | | | 1.50 | 38. | Cloudy | A. Bertrand. |
| | | | | | | | | | | | | | | | | | | | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.63 | 752.6 | 29.74 | 755.5 | 64.0 | 17.8 | 79 | SW | | | 4 | | 10n | | SW | 0 | 0 | Overcast | Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation: no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | | | | | | | | | | | | | | | | | | | Hon. J. Ferguson. |
| Brockville, Ontario | 29.58 | 751.3 | 29.89 | 759.2 | 35 | 1.7 | | SW | 5 | 2.2 | | | 10s | | SW | 0.01 | 0.3 | Cloudy | W. R. Bigg. |
| *Chatham, N. B | 29.53 | 750.0 | 29 59 | 751.6 | 29 | — 1.7 | 97 | NW | 6 | 2.7 | | | 10n | | NW | 0.39 | 9.9 | Cloudy | G. A. Blair. |
| Charlottetown, P. E. Island | 29.57 | 751.1 | 29.61 | 752.1 | 30 | 2.2 | 85 | Calm | 0 | 0 | | | 10s | | Calm | 0.356 | 8.89 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.60 | 751.8 | 29.80 | 756.9 | 35.1 | 1.7 | 91 | SW | | | 1 | | 10n | | | 0.029 | 0.74 | Raining | James Smith, M. A |
| Dalhousie, N. B | 29.63 | 752.6 | 29.66 | 753.4 | 28.7 | — 1.8 | 89 | NW | | | 1 | | | | | 0 | 0 | Clear | H. A. Johnson. |
| Esquimault, B. C | 29.87 | 758.7 | 29.92 | 760.0 | 47.3 | 8.5 | 100 | N | | | | | 8cs | 0 | | 0.02 | 0.5 | Cloudy | W. H. Bevis. |
| *Father Point, Quebec | | | 29.74 | 755.4 | 24 | — 4.4 | 91 | NE | 36 | 16.1 | | | 10n | | NE | 0.03 | 0.8 | Threatening | J. McWilliams. |
| Fredericton, N. B | 29.63 | 752.6 | 29.70 | 754.4 | 27.3 | — 2.6 | 88 | W | 9 | 4.0 | | | 10n | | | 0.53 | 13.5 | Snowing | Prof. Harrison. |
| *Fort Garry Manitoba | 29.46 | 748.3 | 30.33 | 770.4 | 27 | — 2.8 | 94 | N | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | James Stewart. |
| Goderich, Ontario | | | | | | | | | | | | | | | | | | | H. J. Strang, M. A. |
| Granton, Ontario | 28.90 | 734.0 | 30.03 | 762.7 | 36.6 | 2.2 | 90 | W | | | 1 | | 10n | | | | | | |
| *Halifax, N. S | 29.49 | 749.0 | 29.62 | 752.3 | 35 | 1.7 | 100 | Calm | 0 | 0 | | | Fog | | | 0 | 0 | Cloudy | James Grant. |
| Hamilton, Ontario | | | | | | | | | | | | | | | | 0.768 | 19.25 | Foggy | F. Allison, M. A. |
| Heart's Content, N. F | 30.23 | 767.8 | 30.25 | 768.3 | 32 | 0.0 | 100 | SE | | | 3 | | 10 | | | | | | Geo. Dickson, M. A. |
| *Kingston, Ontario | 29.54 | 750.3 | 29.88 | 758.9 | 37 | 2.8 | 84 | W | 3 | 1.3 | | | 10n | | | 0 | 0 | Overcast | E. Weedon. |
| Little Glace Bay, N. S | 29.65 | 753.1 | 29.69 | 754.1 | 37 | 2.8 | | S | 3 | 1.3 | | | 10n | | | Inap. | Inap. | Light rain | S. Woods, M. A. |
| *Montreal, Quebec | 29.57 | 751.1 | 29.78 | 756.4 | 31 | — 0.6 | 98 | Calm | 0 | 0 | | | 10n | | | 1.17 | 29.7 | Raining | C. H. Rigby. |
| *Parry Sound, Ontario | 29.20 | 741.7 | 29.91 | 759.7 | 36 | 2.2 | 90 | W | 10 | 4.5 | | | 10n | | | Inap. | Inap. | Heavy snow | C. H. McLeod, C. E. |
| Peterboro, Ontario | 29.14 | 740.1 | 29.90 | 759.4 | 35.9 | 2.2 | 95 | W | | | | | 10n | | SW | 0.09 | 2.3 | Cloudy | Rev. R. Mosley. |
| Port Dover, Ontario | 29.32 | 744.7 | 30.03 | 762.7 | 37 | 2.8 | 90 | W | 5 | 2.2 | | 10k | 0 | | | Inap | Inap. | Raining | J. F. Jeffers, B. A. |
| Port Hastings, N. S | 29.62 | 752.3 | 29.67 | 753.6 | 32.4 | 0.2 | | Calm | 0 | 0 | | | | | NW | 0 | 0 | Cloudy | H. Morgan. |
| Port Stanley, Ontario | 29.39 | 746.5 | 30.05 | 763.3 | 38 | 3.3 | 84 | W | 8 | 3.6 | | | 10ks | | | 0 | 0 | Cloudy | Peter Grant. |
| *Quebec, Quebec | 29.49 | 749.0 | 29.82 | 757.4 | 26 | — 3.3 | 100 | NE | | | 3 | | 10n | | W | 0 | 0 | Cloudy | M. Payne. |
| *Rockliffe, Ontario | 29.37 | 746.0 | 29.84 | 757.9 | 36 | 2.2 | 85 | NW | 5 | 2.2 | | | 10n | | NE | 0 | 0 | Cloudy | Capt. Ashe, R. N. |
| St. Andrews, N. B | 29.65 | 753.1 | 29.70 | 754.4 | 27 | — 2.8 | 85 | NW | 4 | 1.8 | | | 8s | | NW | Inap. | Inap. | Fair | W. H. McIntyre. |
| St. John, N. B | 29.60 | 749.3 | 29.67 | 753.6 | 29 | — 1.7 | 94 | NW | 5 | 2.2 | | 2k | 2s | NW | | 0.78 | 19.8 | Fair | Dr. Gove. |
| *Saugeen, Ontario | 29.24 | 742.7 | 29.97 | 761.2 | 37 | 2.8 | 90 | N | 8 | 3.6 | | | 10n | | | 0.070 | 1.78 | Overcast | G. Murdock, C. E. |
| Stayner, Ontario | 29.14 | 740.1 | 29.93 | 760.2 | 37 | 2.8 | 86 | NW | 10 | 4.5 | | | 10ks | | | 0.11 | 2.8 | Cloudy | K. Stewart. |
| Stratford, Ontario | 28.68 | 728.5 | 30.00 | 762.0 | 34.0 | 1.1 | 97 | NW | 14 | 6.3 | | | 10n | | NW | 0.08 | 2.0 | Threatening | R. J. Cole. |
| *Sydney, C. B | 29.66 | 753.4 | 29.69 | 754.1 | 37 | 2.8 | 97 | S | 7 | 3.1 | | | 10n | | | Inap. | Inap. | Snowing | C. J. MacGregor, M. A. |
| *Toronto, Ontario | 29.57 | 751.1 | 29.96 | 761.0 | 40 | 4.4 | 84 | W | 12 | 5.4 | | | 10n | | NW | 1.20 | 30.5 | Light rain | T. C. Hill. |
| Windsor, N. S | 29.52 | 749.8 | 29.62 | 752.3 | 35.5 | 1.9 | 95 | S | 5 | 2.2 | | | 10n | | | 0.02 | 0.5 | Light rain | Magnetic Observatory. |
| Woodstock, Ontario | | | | | | | | | | | | | | | | 0.31 | 7.9 | Fair | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | | | | | 30.0 | — 1.1 | | SE | | | 5 | 5u | | | | 0 | 0 | Overcast | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Upper. 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.64 | 752.8 | 29.87 | 758.7 | 43 | 6.1 | 75 | W | 4 | 1.8 | | | 10ks | | W | 0.04 | 1.0 | Cloudy | |
| Alpena, Michigan | 29.30 | 744.2 | 29.95 | 760.7 | 39 | 3.9 | 81 | W | 8 | 3.6 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| Atlantic City, New Jersey | 30.02 | 762.5 | 30.04 | 763.0 | 42 | 5.6 | 83 | W | 11 | 4.9 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| Augusta, Georgia | 30.05 | 763.3 | 30.24 | 768.1 | 45 | 7.2 | 76 | NW | 3 | 1.3 | | 0 | Sm'e | | Calm | 0 | 0 | Smoky | |
| Baltimore, Maryland | 30.01 | 763.0 | 30.09 | 764.3 | 46 | 7.8 | 62 | NW | 7 | 3.1 | | 0 | Haze | | Calm | 0 | 0 | Clear | |
| Barnegat, New Jersey | 29.99 | 761.7 | 30.02 | 762.5 | 46 | 7.8 | 69 | NW | 12 | 5.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Bismarck, Dakota | 28.35 | 720.1 | 30.20 | 767.1 | 32 | 0.0 | 74 | E | 1 | 0.4 | | 0 | 1s | | Calm | 0 | 0 | Clear | |
| Boise City, Idaho | 27.26 | 692.4 | 30.14 | 765.5 | 43 | 6.1 | 83 | Calm | 0 | 0 | | 2k | 0 | Calm | | 0 | 0 | Fair | |
| Boston, Massachusetts | 29.68 | 753.9 | 29.84 | 757.9 | 38 | 3.3 | 77 | W | 8 | 3.6 | | 5cs | Haze | W | | 0.11 | 2.8 | Fair | |
| Brackettville, Texas | 28.66 | 728.0 | 29.68 | 753.9 | 59 | 15.0 | 87 | E | 15 | 6.7 | | | 10n | | Calm | 0.82 | 20.8 | Light rain | |
| Breckenridge, Minnesota | 29.16 | 740.7 | 30.20 | 767.1 | 34 | 1.1 | 79 | N | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Brownsville, Texas | 29.78 | 756.4 | 29.85 | 758.2 | 67 | 19.4 | 90 | SE | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Buffalo, New York | 29.24 | 742.7 | 29.96 | 761.0 | 37 | 2.8 | 100 | SW | 15 | 6.7 | | | 10s | | W | 0 | 0 | Cloudy | |
| Burkes, Arizona | | | | | 48 | 8.9 | 62 | Calm | | | | 0 | 0 | | | Inap. | Inap | Clear | |
| Burlington, Vermont | 29.54 | 750.3 | 29.81 | 757.2 | 37 | 2.8 | 71 | S | 4 | 1.8 | | 2k | 8ks | NW | NW | Inap. | Inap. | Cloudy | |
| Cairo, Illinois | 29.84 | 757.9 | 30.21 | 768.1 | 49 | 9.4 | 71 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Camp Grant, Arizona | 25.00 | 635.0 | 29.80 | 756 9 | 43 | 6.1 | 75 | NE | | | 1 | 2c | 5ks | N | N | 0 | 0 | Fair | |
| Camp Verde, Arizona | 26.76 | 679.7 | 30.25 | 768.3 | 44 | 6.7 | 84 | W | | | | 0 | Fog | | | 0.29 | 7.4 | Foggy | |
| Campo, California | 27.43 | 696.7 | 30.05 | 762.0 | 45 | 7.2 | 100 | NE | 3 | 1.3 | | | 10s | | Calm | 0.07 | 1.8 | Cloudy | |
| Cape Hatteras, N. Carolina | 30.13 | 765.3 | 30.11 | 765.5 | 49 | 9.4 | 85 | NE | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Cape Henry, Virginia | 30.09 | 764.3 | 30.12 | 765.0 | 50 | 10.0 | 65 | NW | 16 | 7.2 | | 0 | 0 | Haze | | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 30.14 | 765.5 | 30.16 | 766.1 | 49 | 9.4 | 78 | N | 16 | 7.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Cape May, New Jersey | 30.04 | 763.0 | 30.07 | 763.8 | 45 | 7.2 | 76 | NW | 20 | 8.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Charleston, South Carolina | 30.17 | 766.3 | 30.24 | 768.1 | 50 | 10.0 | 65 | N | 6 | 2.7 | | 0 | Sm'e | | Calm | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 24.04 | 610.6 | 29.98 | 761.5 | 34 | 1.1 | 79 | NW | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Chicago, Illinois | 29.40 | 746.7 | 30.10 | 764.5 | 39 | 3.9 | 82 | SW | 8 | 3.6 | | 8k | 0 | NW | | 0 | 0 | Fair | |
| Cincinnati, Ohio | 29.52 | 749.8 | 30.19 | 766 8 | 37 | 2.8 | 85 | SE | 2 | 0.9 | | 0 | Fog | | Calm | 0 | 0 | Clear | |
| Clevelana, Ohio | 29.37 | 746.0 | 30.12 | 765.0 | 37 | 2.8 | 71 | SW | 12 | 5.4 | | 5k | 2ks | W | W | 0 | 0 | Fair | |
| Concho, Texas | 28.03 | 711.9 | 29.69 | 754.1 | 55 | 12.8 | 55 | NE | 12 | 5.4 | | 8k | 0 | NE | | 0.03 | 0.8 | Cloudy | |
| Corsicana, Texas | 25.58 | 751.3 | 30.06 | 763.5 | 52 | 11.1 | 66 | Calm | 0 | 0 | | 2cs | Haze | Calm | Calm | 0 | 0 | Fair | |
| Davenport, Iowa | 29.48 | 748.8 | 30.13 | 765.1 | 44 | 6.7 | 76 | Calm | 0 | 0 | | 5ck | 0 | SW | | 0 | 0 | Fair | |
| Deadwood, Dakota | 25.48 | 647.2 | | | 30 | — 1.1 | 89 | S | 1 | 0.4 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Denison, Texas | 29.29 | 744.0 | 30.10 | 764.5 | 52 | 11.1 | 66 | E | 4 | 1.8 | | 8cs | Haze | E | | 0 | 0 | Fair | |
| Denver, Colorado | 24.71 | 628.4 | 29.96 | 761.0 | 41 | 5.0 | 57 | SW | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Detroit, Michigan | 29.30 | 745.7 | 30.04 | 763.0 | 39 | 3.9 | 82 | SW | 9 | 4.0 | | | 10s | | SW | 0 | 0 | Cloudy | |
| Dodge City, Kansas | 27.47 | 697.7 | 29.78 | 756.4 | 47 | 8.3 | 77 | W | 6 | 2.7 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Dubuque, Iowa | 29.40 | 746 7 | 30.11 | 764.8 | 42 | 5.6 | 66 | SW | 1 | 0.4 | | 8ck | Fog | SW | Calm | 0 | 0 | Cloudy | |
| Duluth, Minnesota | 29.44 | 747.8 | 30.13 | 765.3 | 40 | 4.4 | 73 | NE | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Eagle Pass, Texas | 29.94 | 760.5 | 29.63 | 753.4 | 55 | 12.8 | 100 | SE | 12 | 5.4 | | | 10n | | Calm | 0.56 | 14.2 | Heavy rain | |
| Eastport, Maine | 29.60 | 751.8 | 29.67 | 753.6 | 27 | — 2.8 | 69 | NW | 12 | 5.4 | | 2k | 0 | W | | 0.69 | 17.5 | Clear | |
| Eastport, Maine | 29.50 | 744.2 | 30.04 | 763.0 | 38 | 3.3 | 91 | W | 12 | 5.4 | | | 10s | | | 0 | 0 | Cloudy | |
| Erie, Pennsylvania | 29.38 | 746.2 | 30.05 | 763.3 | 36 | 2 2 | 70 | NW | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Escanaba, Michigan | 28.28 | 718.3 | 29.88 | 758.9 | 49 | 9.4 | 93 | SE | | | | 0 | 0 | | | 0.27 | 6.9 | Clear | |
| Florence, Arizona | 24.00 | 609.6 | 30.00 | 762.0 | 41 | 5.0 | 66 | SE | 4 | 1.8 | | 10k | 0 | SE | | 0.23 | 5.8 | Cloudy | |
| Fort Bayard, New Mexico | 25.36 | 644.1 | | | 47 | 8.3 | 70 | SE | 12 | 5.4 | | 0 | 5s | | Calm | 0.23 | 5.8 | Fair | |
| Fort Craig, New Mexico | 29.55 | 750.8 | 30.10 | 764.5 | 48 | 8.9 | 56 | E | 5 | 2.2 | | Sm'e | Sm'e | | | Inap. | Inap. | Dense smoke | |
| Fort Gibson, Indian Ter | 28.73 | 729.7 | 30.00 | 762.0 | 53 | 11.7 | 61 | E | 2 | 0.9 | | 8k | 0 | Calm | | 0 | 0 | Cloudy | |
| Fort Griffin, Texas | 29.90 | 759.4 | 29.94 | 760.5 | — 8 | —22.2 | 100 | N | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 28.81 | 731.8 | 29.91 | 759.7 | 58 | 14.4 | 47 | E | 6 | 2.7 | | | 10s | | SE | 0 | 0 | Cloudy | |
| Fort Sill, Indian Territory | 29.97 | 761.2 | 30.01 | 762.2 | 63 | 17.2 | 61 | SE | 16 | 7.2 | | 6c;k | Haze | SW;SE | Calm | 0 | 0 | Fair | |
| Galveston, Texas | 29.43 | 747.5 | 30.09 | 764.3 | 43 | 6.1 | 83 | W | 12 | 5.4 | | | 10s | | W | 0 | 0 | Cloudy | |
| Grand Haven, Michigan | 29.38 | 746.2 | 30.18 | 766.6 | 37 | 2.8 | 81 | S | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Indianapolis, Indiana | 29.96 | 761.0 | 29.98 | 761.5 | 66 | 18.9 | 74 | E | 27 | 12.1 | | 10k | 0 | E | | 0 | 0 | Cloudy | |
| Indianola, Texas | 28.89 | 733.8 | 30.03 | 762.7 | 55 | 12.8 | 56 | SE | 10 | 4.5 | | | 10s | | SE | 0 | 0 | Cloudy | |
| Jacksboro, Texas | 30.14 | 765.5 | 30.16 | 766.1 | 51 | 10.6 | 79 | NE | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Jacksonville, Florida | 29.45 | 748.0 | 30.08 | 764.0 | 46 | 7.8 | 77 | S | 3 | 1.3 | | 0 | 4s | | Calm | 0 | 0 | Fair | |
| Keokuk, Iowa | 30.00 | 762.0 | 30.03 | 762.7 | 67 | 19.4 | 84 | NE | 16 | 7.2 | | 0 | Haze | | NE | 0 | 0 | Clear | |
| Key West, Florida | 30.12 | 765.0 | 30.14 | 765.5 | 47 | 8.3 | 85 | NW | 7 | 3.1 | | 0 | 0 | | | 0 | 0 | Clear | |
| Kittyhawk, North Carolina | 29.21 | 741.9 | 30.26 | 768.6 | 36 | 2.2 | 80 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Knoxville, Tennessee | 29.31 | 744.5 | 30.06 | 763.5 | 43 | 6.1 | 83 | S | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| La Crosse, Wisconsin | 25.94 | 658.9 | 30.08 | 764.0 | 45 | 7.2 | 92 | Calm | 0 | 0 | | | 10s | | Calm | 0.50 | 12.7 | Cloudy | |
| La Mesilla, New Mexico | 29.36 | 745.7 | 29.69 | 754.1 | 65 | 18.3 | 84 | SE | 12 | 5.4 | | | 10s | | SE | Inap. | Inap. | Cloudy | |
| Laredo, Texas | 29.20 | 741.7 | 30.05 | 763.3 | 46 | 7.8 | 77 | S | 3 | 1.3 | | 5ck | 0 | NW | | 0 | 0 | Fair | |
| Leavenworth, Kansas | 29.70 | 754.4 | 30.05 | 763.3 | 49 | 9.4 | 85 | NE | 3 | 1.3 | | 0 | 5s | | E | 0.02 | 0.5 | Fair | |
| Los Angeles, California | 29.63 | 752 6 | 30.22 | 767.6 | 38 | 3.3 | 72 | Calm | 0 | 0 | | | Fog | | Calm | 0 | 0 | Dense fog | |
| Louisville, Kentucky | 29.45 | 748.0 | 30.15 | 765.8 | 46 | 7.8 | 54 | W | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Lynchburg, Virginia | 29.31 | 744.5 | 30.02 | 762.5 | 41 | 5.0 | 65 | W | 12 | 5.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Marquette, Michigan | 28.31 | 719.1 | 30.05 | 763.5 | 56 | 13.3 | 57 | E | 4 | 1.8 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Mason, Texas | 29.88 | 758.9 | 30.21 | 767.3 | 46 | 7.8 | 67 | E | 6 | 2.7 | | 1c | Haze | SW | Calm | 0 | 0 | Hazy | |
| Memphis, Tennessee | 29.38 | 746.2 | 30.08 | 764.0 | 42 | 5.6 | 83 | NW | 12 | 5.4 | | 2cs | 2ks | | NW | 0 | 0 | Fair | |
| Milwaukee, Wisconsin | 30.14 | 765.5 | 30.19 | 766.8 | 48 | 8.9 | 85 | N | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Mobile, Alabama | 29.98 | 761.5 | 30.22 | 767.6 | 44.5 | 6.9 | 71 | N | 3 | 1.3 | | 0 | Fg;sm' | | Calm | 0 | 0 | Hazy | |
| Montgomery, Alabama | 29.09 | 738.9 | 30.18 | 766.6 | 37 | 2.8 | 81 | Calm | 0 | 0 | | 0 | Haze | | | 0 | 0 | Clear | |
| Morgantown, West Virginia | 23.36 | 593.3 | 29.72 | 754.9 | 18 | — 7.8 | 100 | NW | 54 | 24.1 | | | Fog | | NW | 0.73 | 18.5 | Foggy | |
| Mt. Washington, N. H. | 29.68 | 753.9 | 30.24 | 768.1 | 37 | 2.8 | 90 | Calm | 0 | 0 | | | Haze | | Calm | 0 | 0 | Hazy | |
| Nashville, Tennessee | 29.80 | 756.9 | 29.92 | 760.0 | 45 | 7.2 | 68 | NW | 8 | 3.6 | | 5ck | 0 | | | Inap. | Inap. | Fair | |
| New Haven, Connecticut | 29.80 | 756.4 | 29.92 | 760.0 | 42 | 5.6 | 74 | Calm | 0 | 0 | | 0 | Haze | | Calm | 0.05 | 1.3 | Clear | |
| New London, Connecticut | 30.04 | 763.0 | 30.10 | 764.5 | 56 | 13.3 | 63 | NE | 4 | 1.8 | | 0 | Hz'sm | | Calm | 0 | 0 | Hazy | |
| New Orleans, Louisiana | 29.82 | 757.4 | 29.87 | 758.7 | 39 | 3.9 | 73 | W | 4 | 1.8 | | 2k | 0 | NW | | 0.11 | 2.8 | Clear | |
| Newport, Rhode Island | 29.81 | 757.2 | 29.99 | 761.7 | 43 | 6.1 | 67 | NW | 16 | 7.2 | | 1ck | 0 | Calm | | 0.02 | 0.5 | Clear | |
| New York, New York | 30.10 | 764.5 | 30.16 | 766.1 | 47 | 8.3 | 62 | N | 6 | 2.7 | | Haze | Sm'e | | | 0 | 0 | Smoky | |
| Norfolk, Virginia | 27.14 | 689.3 | 29.75 | 755.6 | 40 | 4.4 | 73 | NW | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| North Platte, Nebraska | 29.90 | 759.4 | 29.94 | 760.5 | 47 | 8.3 | 100 | Calm | 0 | 0 | | | Fog | | Calm | 0.27 | 6.9 | Dense fog | |
| Olympia, Washington Ter. | 28.88 | 733.5 | 29.96 | 761.0 | 49 | 9.4 | 71 | S | 5 | 2.2 | | 5k | 5s | SW | Calm | 0 | 0 | Cloudy | |
| Omaha, Nebraska | 29.60 | 751.8 | 29.92 | 760.0 | 43 | 6.1 | 75 | W | 8 | 3.6 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Oswego, New York | 29.43 | 747.5 | 30.30 | 769.6 | 28 | — 2.2 | 88 | NW | 7 | 3.1 | | 0 | 0 | | | 0 | 0 | Clear | |
| Pembina, Dakota | 30.00 | 762.0 | 30.05 | 763.3 | 44 | 6.7 | 67 | NW | 14 | 6.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Philadelphia, Pennsylvania | 28.81 | 731.8 | 30.64 | 778.2 | 49 | 9.4 | 93 | E | | | | 0 | 0 | | | 0.03 | 0.8 | Clear | |
| Phœnix, Arizona | 17.72 | 450.1 | 29.94 | 760.5 | 11 | —11.7 | 60 | NE | 8 | 3.6 | | 8c | 0 | N | | 0 | 0 | Fair | |
| Pike's Peak, Colorado | 24.05 | 610.9 | 29.82 | 757.4 | 35 | 1.7 | 80 | W | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Pioche, Nevada | 29.29 | 744.0 | 30.12 | 765.0 | 37 | 2.8 | 81 | W | 8 | 3.6 | | 0 | 0 | | | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.33 | 745.0 | 30.01 | 762.2 | 39 | 3.9 | 91 | W | 10 | 4.5 | | | 10ks | | W | 0 | 0 | Threatening | |
| Port Huron, Michigan | 29.72 | 754.9 | 29.77 | 756.1 | 35 | 3.3 | 72 | W | 6 | 2.7 | | 8k | Haze | NW | | 0.16 | 4.1 | Cloudy | |
| Portland, Maine | 29.90 | 759.4 | 30.00 | 762.0 | 47 | 8.3 | 100 | N | 1 | 0.4 | | | 10ks | | SW | 0.03 | 0.8 | Cloudy | |
| Portland, Oregon | 24.76 | 628.9 | 30.12 | 765.0 | 35 | 1.7 | 63 | Calm | | | | 0 | 0 | | | 0.19 | 4.8 | Clear | |
| Prescott, Arizona | 30.05 | 763.5 | 30.08 | 764.0 | 60 | 15.6 | 71 | NE | 16 | 7.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Punta Rassa, Florida | 29.73 | 755.1 | 30.09 | 764.8 | 53 | 11.7 | 86 | NW | 8 | 3.6 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Red Bluff, California | 29.28 | 743.7 | 29.90 | 759.4 | 40 | 4.4 | 82 | W | 16 | 7.2 | | | 10s | | NW | 0 | 0 | Cloudy | |
| Rochester, New York | | | | | | | | | | | | | | | | | | | |

UNITED STATES SERIES.—CONTINUED

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roseburg, Oregon | 29.86 | 745.7 | 29.93 | 760.2 | 47 | 8.3 | 100 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.04 | 1.0 | Cloudy..... | |
| Sacramento, California | 30.00 | 762.0 | 30.08 | 764.0 | 55 | 12.8 | 81 | E | 2 | 0.9 | ..... | 8c | 0 | SW | ..... | 0 | 0 | Cloudy..... | |
| St. Louis, Missouri | 29.59 | 751.6 | 30.18 | 766.6 | 45 | 7.2 | 76 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| St. Marks, Florida | 30.16 | 766.1 | 30.18 | 766.6 | 46 | 7.8 | 77 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| St. Paul, Minnesota | 29.21 | 741.9 | 30.05 | 763.3 | 41 | 5.0 | 78 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.69 | 652.5 | 30.02 | 762.5 | 47 | 8.3 | 77 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | S | 0.01 | 0.3 | Cloudy..... | |
| San Antonio, Texas | 29.26 | 743.2 | 29.81 | 757.9 | 59 | 15.0 | 100 | NE | 3 | 1.3 | ..... | ..... | 10n | ..... | Calm | 0.38 | 9.7 | L'ght rain... | |
| San Diego, California | 30.02 | 762.5 | 30.09 | 764.3 | 53 | 11.7 | 86 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | W | 0.01 | 0.3 | Cloudy..... | |
| Sandusky, Ohio | 29.43 | 747.5 | 30.12 | 765.0 | 39 | 3.9 | 82 | SW | 13 | 5.8 | ..... | 9ck | 0 | NW | ..... | 0 | 0 | Cloudy..... | |
| Sandy Hook, New Jersey | 29.98 | 761.5 | 30.00 | 762.0 | 42 | 5.6 | 88 | W | 14 | 6.3 | ..... | 1k | 0 | NW | ..... | 0 | 0 | Clear..... | |
| San Francisco, California | 30.00 | 762.0 | 30.07 | 763.8 | 57 | 13.9 | 81 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy..... | |
| Santa Fé, New Mexico | 23.20 | 589.3 | 29.74 | 755.4 | 37 | 2.8 | 81 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | Calm | 0.33 | 8.4 | Fair ..... | |
| Savannah, Georgia | 30.11 | 764.8 | 30.20 | 767.1 | 49 | 9.4 | 64 | N | 4 | 1.8 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Smoky..... | |
| Shreveport, Louisiana | 29.92 | 760.0 | 30.14 | 765.5 | 52 | 11.1 | 60 | E | 8 | 1.3 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair ..... | |
| Smithville, North Carolina | 30.18 | 766.6 | 30.22 | 767.6 | 46 | 7.8 | 69 | N | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Springfield, Massachusetts | 29.69 | 754.1 | 29.82 | 757.4 | 45 | 7.2 | 61 | W | 8 | 3.6 | ..... | 5k | 0 | W | ..... | 0 | 0 | Fair..... | |
| Stockton, Texas | 26.73 | 678.9 | 29.73 | 755.1 | 49 | 9.4 | 85 | SE | 40 | 17.9 | ..... | ..... | 10ks | ..... | SE | 1.27 | 32.3 | Cloudy ..... | |
| Thatcher's Island, Mass | 29.70 | 755.9 | 29.81 | 757.2 | 86 | 2.2 | 80 | SW | 8 | 3.6 | ..... | 1k | 0 | NW | ..... | 0.34 | 8.6 | Foggy ..... | |
| Toledo, Ohio, | 29.41 | 747.0 | 30.10 | 764.5 | 41 | 5.0 | 74 | W | 8 | 3.6 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy ..... | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 58 | 14.4 | 70 | Calm | ..... | ..... | ..... | 8cs | 2s | SW | Calm | 0.52 | 13.2 | Cloudy..... | |
| Tybee Island, Georgia | 30.16 | 766.1 | 30.16 | 766.8 | 54 | 12.2 | 73 | N | 16 | 7.2 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear ..... | |
| Umatilla, Oregon | 29.74 | 755.4 | ..... | ..... | 40 | 4.4 | 100 | SE | 4 | 1.8 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear..... | |
| Vicksburg, Mississippi | 29.93 | 760.2 | 30.20 | 767.1 | 51 | 10.6 | 79 | SE | 6 | 2.7 | ..... | 5c | Haze | Calm | Calm | 0 | 0 | Fair..... | |
| Virginia City, Montana | 24.32 | 617.7 | 29.80 | 756.9 | 41 | 5.0 | 91 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.20 | 5.1 | Light rain... | |
| Visalia, California | 29.75 | 755.6 | 30.13 | 765.3 | 47 | 8.3 | 92 | Calm | 0 | 0 | ..... | 2c | 0 | NW | ..... | 0.13 | 3.3 | Clear..... | |
| Washington, D. C. | 30.01 | 762.2 | 30.13 | 765.3 | 46 | 7.8 | 62 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 37 | 2.8 | 58 | NE | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Wilmington,,N. Carolina | 30.12 | 765.0 | 30.20 | 767.1 | 42 | 5.6 | 75 | N | 5 | 2.2 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear ..... | |
| Winnemucca Nevada | 25.74 | 653.8 | 30.10 | 764.5 | 20 | — 1.7 | 78 | Calm | 0 | 0 | ..... | 6 | 0 | ..... | ..... | 0.05 | 1.3 | Clear..... | |
| Wood's Holl, Mass | 29.81 | 757.2 | 29.86 | 758.4 | 45 | 7.2 | 60 | W | 8 | 3.6 | ..... | Haze | 0 | ..... | ..... | 0.02 | 0.5 | Clear..... | |
| Yankton, Dakota | 28.75 | 730.2 | 30.05 | 763.3 | 43 | 6.1 | 79 | N | 10 | 4.5 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy..... | |
| Yuma, Arizona | 29.79 | 756.7 | 29.96 | 761.0 | 66 | 18.9 | 48 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear..... | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 30.42 | 772.7 | 30.47 | 773.9 | 1.0 | —17.2 | 86 | S | 9 | 4.0 | ..... | 3c | 0 | N | ..... | 0.01 | 0.3 | Fair .. ..... | J. Fortescue, W. Wood |
| Havana, Cuba, W. I. | 29.96 | 761.0 | 29.98 | 761.5 | 72 | 22.2 | 71 | E | 1.2 | 0.5 | ..... | 4k | 4n | SW | NE | 0 | 0 | Cloudy..... | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.05 | 763.3 | 30.06 | 763.5 | 80 | 26.7 | 82 | Calm | 0 | 0 | ..... | 2c | 0 | Calm | ..... | 0.18 | 4.6 | ..... | James Gall. |
| Navassa, W. I. | 29.85 | 758.2 | 29.93 | 760.2 | 79 | 26.1 | ..... | NE | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0.85 | 21.6 | Fair..... | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | ..... | ..... | 30.02 | 762.5 | 77 | 25.0 | 95 | E | ..... | ..... | 2 | ..... | 8ks | ..... | ..... | 1.260 | 32.00 | Cloudy..... | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | 30.07 | 763.8 | 30.08 | 764.0 | 84.2 | 29 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.91 | 23. | Raining..... | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.21 | 640.3 | ..... | ..... | 70.5 | 21.4 | 79 | Calm | ..... | ..... | 0 | 1k | 1ks | SE | ..... | Inap. | Inap. | ..... | Thomas Herran |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,883 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,700 (?) ft., or 1,066.8 (?) m.; Camp o, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 760 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.64 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 10—. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.03 | 762.7 | 54 | 12.2 | 54 | 12.2 | 80 | ESE | 1 | 0.4 | ..... | ..... | 8k | ..... | S | 0 | 0 | ..... | ..... | Cloudy ..... | |
| Navy Yard, Pensacola, Fla. | 30.32 | 770.1 | 59 | 15.0 | 60 | 15.6 | 82 | NNE | 4 | 1.8 | ..... | ..... | 2 | ..... | N | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Portsmouth, N.H | 29.87 | 758.7 | 52 | 11.1 | 35 | 1.7 | 80 | SW | 4 | 1.8 | ..... | ..... | 5 | ..... | ..... | 0.3 | 8. | ..... | ..... | Raining..... | |
| Naval Hospital, Yokohama, Japan | 30.15* | 765.8* | 56 | 13.3 | 52 | 11.1 | 60 | WSW | ..... | ..... | 5 | ..... | 7ck;fg | ..... | WSW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Adams. Panama | 29.93 | 760.2 | 83 | 28.3 | 83 | 28.3 | 79 | NW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | |
| Alliance, Piraeus, Greece | 29.77‡ | 756.1‡ | ..... | ..... | 54 | 12.2 | 55 | WNW | ..... | ..... | 3–5 | ..... | 1 | ..... | WNW | ..... | ..... | ..... | ..... | Clear..... | |
| Ashuelot. Shanghai, China | 30.25* | 768.3* | 60 | 15.6 | 52 | 11.1 | 73 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Misty..... | |
| Canonicus, New Orleans, La | 30.06 | 763.5 | 44 | 6.7 | 55 | 12.8 | 80 | NE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Pleasant.... | |
| Colorado, New York, N. Y. | 29.95‡ | 760.7‡ | ..... | ..... | 45 | 7.2 | 68 | WNW | 23 | 10.3 | ..... | ..... | 2 | ..... | WNW | 0.01 | 0.3 | ..... | ..... | Hazy..... | |
| Constitution, N. 48° 41′ W. 19° 18′ | 30.42‡ | 772.7‡ | ..... | ..... | 53 | 11.7 | 80 | SSE | ..... | ..... | 5 | ..... | 9 | ..... | Calm | ..... | ..... | Mod'ate | SSE | Cloudy..... | |
| Despatch, Sulina, Bulgaria | 29.26 | 743.2 | 69 | 20.6 | 39 | 3.9 | 100 | NNE | ..... | ..... | 6 | ..... | 10 | ..... | NE | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Enterprise, New Orleans, La | 30.11‡ | 764.8‡ | ..... | ..... | 58 | 14.4 | 82 | ENE | ..... | ..... | 1–2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Franklin, Norfolk, Va | 30.11‡ | 764.8‡ | ..... | ..... | 49 | 9.4 | 64 | N | 8.4 | 3.8 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | Blue sky..... | |
| Gettysburg Valetta, Malta | 30.03‡ | 762.7‡ | ..... | ..... | 54 | 12.2 | 100 | NW | ..... | ..... | 3 | ..... | 2 | ..... | NW | 0 | 0 | ..... | ..... | Clear..... | |
| Guard. Porto Grande, Cape Verde Islands | 30.12 | 765.0 | 73 | 22.8 | 71 | 21.7 | 62 | NNE | ..... | ..... | 4 | ..... | 2 | ..... | NE | ..... | ..... | ..... | ..... | Clear..... | |
| Marion, Smyrna, Turkey | 29.70 | 754.4 | 58 | 14.4 | 50 | 10.0 | 45 | W | ..... | ..... | 6 | ..... | 10 | ..... | W | Light | Light | Smooth | W | Cloudy..... | |
| Michigan, Erie, Pa | 29.55 | 750.6 | 70 | 21.1 | 38 | 3.3 | 81 | W | ..... | ..... | 5 | ..... | 10 | ..... | W | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monongahela. Hong-Kong, China | 30.19* | 766.8* | 65 | 18.3 | 64 | 17.8 | 83 | E | ..... | ..... | 2–3 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | D clouds..... | |
| New Hampshire, Port Royal, S. C | 30.36 | 771.1 | 56 | 13.3 | 54 | 12.2 | 67 | N | 6 | 2.7 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | Clear ..... | |
| Omaha, N. 7° 20′, W. 38° 30′ | 30.09* | 764.3* | 84 | 28.9 | 82.5 | 28.1 | 81 | ENE | 6 | 2.7 | ..... | ..... | 4 | ..... | E | 0 | 0 | Mod'ate | NE | ..... | |
| Onward, Callao, Peru | 30.00† | 762.0† | ..... | ..... | 72 | 22.2 | 90 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, Vera Cruz, Mexico | 29.93‡ | 760.2‡ | ..... | ..... | 72 | 22.2 | 95 | SSE | ..... | ..... | 2 | ..... | 10 | ..... | S | ..... | ..... | Long | S | Cloudy..... | |
| Palos, Shanghai, China | 30.23* | 767.8* | 57 | 13.9 | 51 | 10.6 | 72 | WSW | ..... | ..... | 0–1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Pensacola, Honolulu, H. I | 30.14 | 765.5 | 70 | 21.1 | 67 | 19 4 | 89 | N | 3 | 1.3 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Plymouth. Norfolk, Va | 30.16‡ | 766.1‡ | ..... | ..... | 49 | 9.4 | 71 | NNW | ..... | ..... | 1–2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Powhatan, N 28° 23′, W. 79° 56′ | 30.15‡ | 765.8‡ | ..... | ..... | 68 | 20.0 | 95 | NNE | 9.6 | 4.3 | ..... | ..... | 8 | ..... | NE | 0 | 0 | Mod'ate | NE | Pleasant..... | |
| Ranger. Amoy, China | 30.33* | 770.4* | ..... | ..... | 60 | 15.6 | 76 | S | ..... | ..... | 0–1 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | D. clouds..... | |
| Rio Bravo, Brownsville, Texas | ..... | ..... | ..... | ..... | 65 | 18.3 | 100 | ESE | ..... | ..... | 2 | ..... | 1 | ..... | SE | ..... | ..... | ..... | ..... | Clear..... | |
| Santee, Annapolis, Md | 30.17* | 766.3* | 64 | 17.8 | 45 | 7.2 | 68 | W | ..... | ..... | 3 | ..... | 2 | ..... | N&W | 0 | 0 | ..... | ..... | Clear. ..... | |
| Saratoga, Washington, D. C | 30.04* | 763.0* | ..... | ..... | 50 | 10.0 | 93 | NW | ..... | ..... | 1 | ..... | 1 | ..... | Calm | 0 | 0 | ..... | ..... | Fair..... | |
| St. Louis, League Island, Pa | 29.99 | 761.7 | 58 | 14.4 | 46 | 7.8 | 77 | NW | 13 | 5.8 | ..... | ..... | 2 | ..... | Calm | 0 | 0 | ..... | ..... | Fair ..... | |
| Supply, N. 49° 30′ W. 5° 54′′ | 30.53 | 775.4 | 50 | 10.0 | 52 | 11.1 | 86 | N | ..... | ..... | 5 | ..... | 2 | ..... | NNE | ..... | ..... | Smooth | ..... | Clear..... | |
| Swatara, N. 11° 00′, W. 75° 12′ | 29.98* | 761.5* | ..... | ..... | 82 | 27.8 | 87 | NNW | ..... | ..... | 2 | ..... | 8 | ..... | N&E | ..... | ..... | Smooth | ..... | Hazy.. ..... | |
| Tennessee, N. 5° 43′ 36′′, E. 98° 44′ 36′′ | 29.91* | 759.7* | 87 | 30.6 | 85 | 29.4 | 76 | W | 1 | 0.4 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | Smooth | ..... | D. clouds..... | |
| Trenton, Piraeus, Greece | 29.79‡ | 756.7‡ | ..... | ..... | 60 | 15.6 | 44 | NW | ..... | ..... | 3–5 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Hazy..... | |
| Tuscarora, N. 24° 05,′ W. 110° 15′ | 30.00 | 762.0 | 65 | 18.3 | 62 | 16.7 | 72 | SW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear ..... | |
| Vandalia, Naples, Italy | 29.94‡ | 760.5‡ | ..... | ..... | 54 | 12.2 | 55 | S | ..... | ..... | 2 | ..... | 5 | ..... | WSW | ..... | ..... | ..... | ..... | Fair ..... | |
| Wabash, Boston, Mass | 29.85‡ | 758.2‡ | ..... | ..... | 37 | 2.8 | 81 | W | 7 | 3.1 | ..... | ..... | 5 | ..... | Calm | 0.12 | 3.0 | ..... | ..... | Hazy..... | |
| Wyoming, N. 41° 06′ W. 65° 15′ | 29.86* | 758.4* | ..... | ..... | 40 | 4.4 | 82 | NNW | ..... | ..... | 4 | ..... | 10 | ..... | N&W | ..... | ..... | Mod'ate | N&W | D. clouds..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Upper | Lower | Upper. | Lower. | Character. | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, Hong-Kong, China | | | | | 64 | 17.8 | | E | | | 2 | | 10 | | | | | Overcast | Capt. Maury. |
| S. S. Colima, N. 8° 33′, W. 84° 28′ | | | 29.86† | 758.4† | 82 | 27.8 | 91 | ESE | | | 2-3 | | 8 | | WNW | Small | N | Showery | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Washington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. †Aneroid.

### WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, New York, N. Y. | | | 29.98† | 761.6† | 48 | 6.1 | ?? | NW | | | 2 | | 2os | | N | | | Fair | Capt. W. H. Thompson |
| S. S. Celtic, N. 43° 34,′ W. 51° 30′ | | | 30.19† | 766.8† | 40 | 4.4 | 82 | SE | | | 5 | | 10 | S | | Slight | S | Misty | Capt. B. Gleadell. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Aneroid.

### OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic | | | | | | | | | | | | | | | | | | | Capt. John Metcalf. |
| S. S. Gaelic, Yokohama, Japan | | | 29.97† | 761.2† | | | | S | | | 5 | | n | | S | | | Raining | Capt. W. H. Kidley |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid

### NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | TRUE COURSE TOWARD— | HOURLY RATE IN KNOTS. | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | SEA-SWELL. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | CHARACTER | DIRECTION FROM— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, N. 43° 28′ 15″, W. 44° 37′ 15″ | | | 30.46† | 773.7† | 53 | 11.7 | 100 | SE | | | 4 | | 7 | | S | Light | SE | Cloudy | Captain Sargent. |
| S. S. Ohio, N. 44° 58′, W. 45° 05′ | | | 30.38 | 771.6 | 49.5 | 9.7 | 86 | Calm | | | 0 | | 5 | | Calm | Smooth | NNW | Fine | Captain Morrison. |
| S. S. Pennsylvania | | | | | | | | | | | | | | | | | | | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. †Aneroid; unreliable, corrected for elevation, instrumental error not known.

## RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland, N. 49° 11′, W. 13° 11′ | | | 30.52* | 775.2* | | | | Calm | 0 | 0 | | | 3 | | E | Smooth | | Hazy | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

*Aneroid; regulated to standard at Antwerp.

## ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Scandinavian | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

## MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller Crisfield, Md. | | | 29.92 | 760.0 | 50 | 10.0 | 65 | NNW | 11 | 4.9 | | | 0 | | | | | Clear | Capt. James Jorgense |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.76 | 755.9 | —24 | —31.1 | 90* | Calm | 0 | 0 | | 0 | 1s | | S | | | Clear | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Determined by use of hair hygrometer.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg'd.) Chief Signal Officer, U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 20, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.18 | 766.6 | 60.4 | 15.8 | ..... | NE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair. ... | Dr. Ollive. |
| Nemours | ..... | ..... | 30.22 | 767.6 | 61.7 | 16.5 | 58 | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Very fair..... | Michel. |
| Algiers | ..... | ..... | 30.19 | 766.7 | 60.8 | 16.0 | 64 | W | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Very fair..... | Towiliere. |
| La Calle | ..... | ..... | 30.13 | 765.2 | 56.5 | 13.6 | 79 | NW | ..... | ..... | 5 | ..... | 7 | ..... | ..... | 1.10 | 28. | Very cloudy | Boulangeot. |
| Tunis | ..... | ..... | 30.08 | 764.0 | 59.5 | 15.8 | 62 | NW | ..... | ..... | 9 | ..... | 4 | ..... | ..... | 0.228 | 5.8 | Cloudy..... | Jacques. |
| Sfax | ..... | ..... | 30.18 | 766.5 | 68.0 | 20.0 | ..... | WNW | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0 | 0 | Fair ..... | Gau. |
| Saida | ..... | ..... | 30.24 | 768.2 | 56.1 | 13.4 | 84 | NNW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair.. | Herbin. |
| Tebessa | ..... | ..... | 30.17 | 766.2 | ..... | ..... | ..... | NW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Bourgeois. |
| Geriville | ..... | ..... | 30.25 | 768.4 | 46.8 | 8.2 | 89 | N | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 0 | 0 | Very cloudy | Lemaillot. |
| Laghouat | ..... | ..... | 30.26 | 768.6 | 56.5 | 13.6 | 30 | ENE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear..... | Guyot. |
| Biskra | ..... | ..... | 30.24 | 768.1 | 66.9 | 19.4 | 64 | NE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | Clear ..... | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.42 | 747.3 | 29.98 | 761.5 | 48.0 | 8.9 | 90 | NE | ..... | ..... | 6 | ..... | 3 | ..... | ..... | Inap. | Inap. | ..... | Prof. Ivan Stozu |
| Cracow, I. R. Observatory | 29.17 | 740.8 | 29.97 | 761.1 | 33.4 | 0.8 | 85 | NNW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.075 | 1.9 | ..... | Dr. Wierzbiski. |
| Eperies | 29.89 | 733.8 | 29.79 | 756.7 | 37.4 | 3.0 | 66 | NW | ..... | ..... | 3 | ..... | 9k;8 | ..... | S | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.76 | 730.6 | 30.05 | 763.2 | 41.0 | 5.0 | 48 | NW | ..... | ..... | 6 | ..... | 3 | ..... | ..... | 0.000 | 0.01 | ..... | Andreas Rospim. |
| Hermannstadt | 28.23 | 717.0 | 29.69 | 754.0 | 35.2 | 1.8 | 77 | N | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.78 | 731.0 | 30.18 | 766.5 | 36.7 | 2.6 | 82 | WNW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0.167 | 4.0 | ..... | Prof. C. Wagner |
| Lemberg | 28.67 | 728.1 | 29.69 | 754.0 | 34.2 | 1.2 | 78 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.016 | 0.4 | ..... | Dr. T. Stanecki. |
| Pola | 29.81 | 767.2 | 29.93 | 760.1 | 49.1 | 9.5 | 60 | WNW | ..... | ..... | 3 | ..... | 2ks | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Johann Tamas, S. J. |
| Szegedin | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Karl Stancel. |
| Trieste | 29.56 | 760.9 | 29.85 | 758.3 | 32.0 | 0.0 | 100 | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.240 | 6.10 | ..... | P. Busin. |
| Vienna | 29.86 | 758.4 | 29.96 | 761.0 | 48.7 | 9.3 | 70 | NW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Almost clear | I. R. Central Met. Obs'y |
| ..... | 29.34 | 745.3 | 30.08 | 764.1 | 39.7 | 4.3 | 44 | NW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0.047 | 1.2 | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.81 | 731.8 | 30.36 | 771.2 | 43.0 | 6.6 | 82 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. M. Passau. |
| Brussels | 30.17 | 766.4 | 30.38 | 771.6 | 52.0 | 11.1 | 65 | NW | ..... | ..... | 4 | ..... | 5 | ..... | NW;N | 0 | 0 | ..... | Royal Observatory. |
| Furnes | 30.44 | 773.1 | 30.40 | 773.7 | 49.1 | 9.5 | 83 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | M. E. de Cae. |
| Maeseyck | 30.23 | 767.7 | 30.35 | 770.9 | 49.3 | 9.6 | 77 | N. | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.028 | 0.7 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

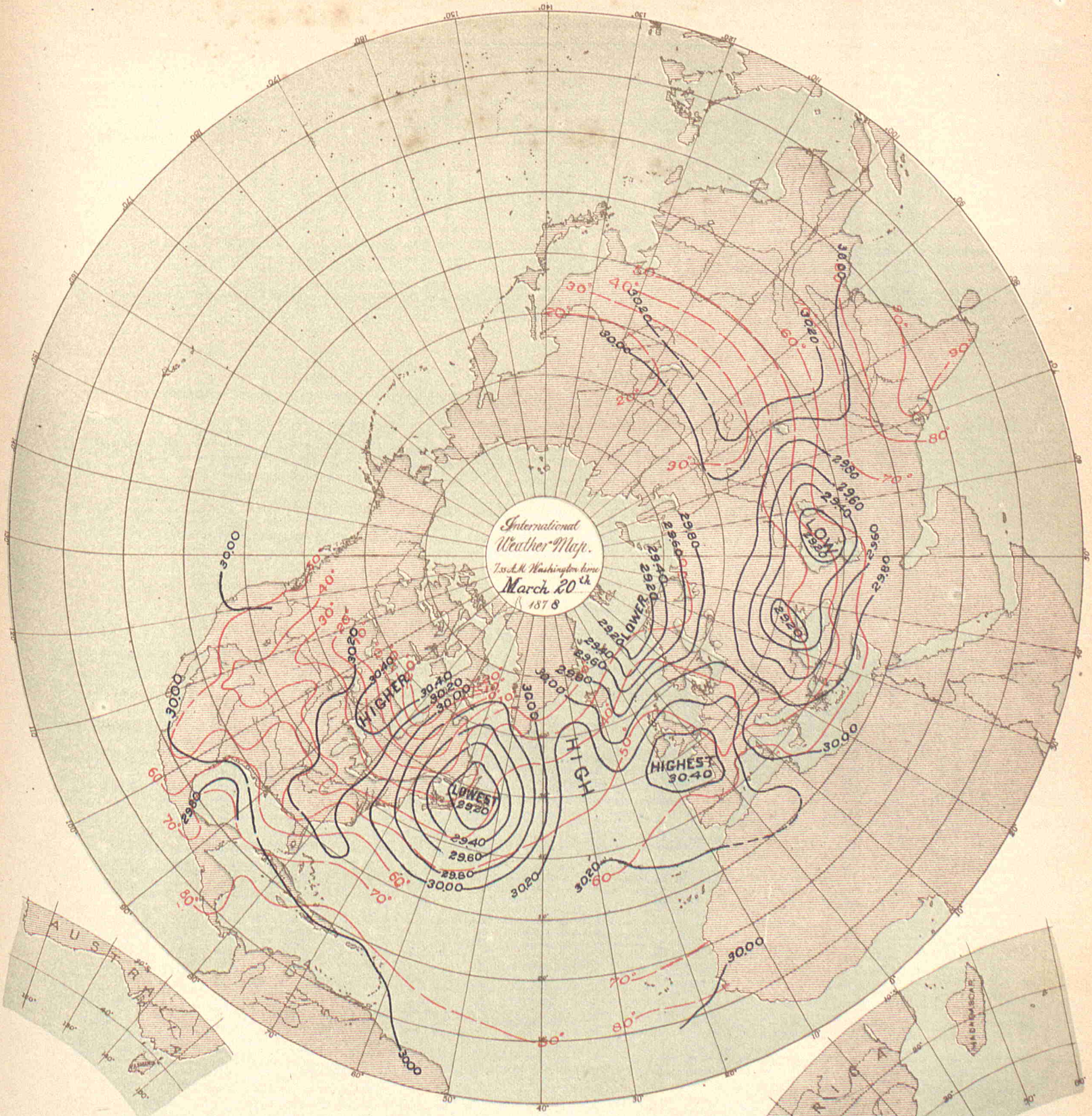
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.15 | 765.8 | 30.20 | 768.3 | 53.6 | 12.0 | ..... | W | 16 | 7.2 | ..... | ..... | 9 | ..... | ..... | 0.010 | 0.25 | Overcast..... | W. Boswell. |
| Ardrossan | 30.33 | 770.4 | 30.34 | 770.6 | 51 | 10.6 | ..... | W | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.45 | 773.4 | 50.3 | 10.2 | ..... | WSW | 8 | 3.6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | S. Call, for Dr. Robinson. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.44 | 773.2 | 48.8 | 9.3 | ..... | W | 16 | 7.2 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 30.47 | 773.9 | 52.1 | 11.2 | ..... | WNW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | J. Dreyer. |
| Bradford, Yorkshire | 29.99 | 761.7 | 30.30 | 771.9 | 50.2 | 10 1 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.96 | 761.0 | 29.99 | 761.7 | 85.0 | 29.4 | ..... | NE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 30.40 | 772.1 | 58.0 | 14.4 | ..... | NW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | H. Todd. [H.O. |
| Cardington | ..... | ..... | 30.41 | 772.4 | 52.0 | 11.1 | ..... | NW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | John McLaren. |
| Chatham, School M. E | 30.30 | 769.6 | 30.44 | 773.2 | 51.2 | 10.7 | ..... | W | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.95 | 735.3 | 30.46 | 773.7 | 46.0 | 7.8 | ..... | NE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Fine..... | Alexander Watt. |
| Donaghadee | 30.36 | 771.1 | 30.39 | 771.9 | 52 | 11.1 | ..... | WNW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 30.40 | 772.1 | 30.43 | 772.9 | 50 | 10.0 | ..... | W | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy..... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 30.40 | 772.1 | 48.0 | 8.9 | ..... | NW | 0.8 | 0.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Thomas Mackereth. |
| Falmouth, Observatory | 30.24 | 768.1 | 30.48 | 774.2 | 50.0 | 10.0 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | The Staff. |
| Fort Napier, (Natal) | 27.57 | 700.3 | 29.77 | 756.1 | 84.4 | 29.1 | ..... | E | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.67 | 753.6 | 29.90 | 759.4 | 89 | 31.7 | ..... | W | ..... | ..... | 0 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's College | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.16 | 766.1 | 30.21 | 767.3 | 62.2 | 16.8 | ..... | E | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds..... | Corpl. C. Aitken, A.H.C. |
| Glasgow, Observatory | 30.12 | 765.0 | 30.33 | 770.4 | 50.2 | 10.1 | ..... | WSW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy..... | D. G. Maclean. |
| Great Yarmouth | 30.36 | 771.1 | 30.37 | 771.4 | 53 | 11.7 | ..... | NW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | Foggy ..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 30.25 | 768.3 | 30.43 | 772.9 | 51.7 | 10.9 | ..... | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | The Staff, for G. B. Airy. |
| Guernsey | 30.20 | 767.1 | 30.42 | 772.7 | 52.5 | 11.4 | ..... | ESE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 30.46 | 773.7 | 53 | 11.7 | ..... | NE | ..... | ..... | 2 | ..... | 8c | ..... | ..... | 0 | 0 | Fair ..... | M. P. Moyle. |
| Holyhead | 30.40 | 772.1 | 30.45 | 773.4 | 52 | 11.1 | ..... | WSW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Tilston. |
| Jersey | 30.18 | 766 6 | 30.48 | 774.2 | 51.9 | 11.1 | ..... | Calm | ..... | ..... | 0 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy ..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 30.43 | 772.9 | 53.5 | 11.9 | ..... | WNW | 4 | 1.8 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Misty..... | The Staff. |
| Kingstown | 30.43 | 772 9 | 30.46 | 773.7 | 52 | 11.1 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 30.42 | 772.7 | 48.1 | 8.9 | ..... | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.86 | 758.4 | 29.94 | 760.5 | 65.8 | 13.2 | ..... | NW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Sgt. Fred. Travis, A. H. |
| Nairn | 30.12 | 765.0 | 30.22 | 767.6 | 53 | 11.7 | ..... | W | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded... | W. D. Penny. [O. |
| Nassau, (Bahamas) | ..... | ..... | 30.07 | 763.8 | 72.5 | 22.5 | ..... | NE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 30.22 | 767.6 | 30.42 | 772.7 | 50.0 | 10.0 | ..... | NW | ..... | ..... | 1 | ..... | 10k | ..... | NW | 0 | 0 | Overcast..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.90 | 759.4 | 30.44 | 773.2 | 47.0 | 8.3 | ..... | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.44 | 773.2 | 52 | 11.1 | ..... | WNW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Mr. Lucas. |
| Plymouth | 30.38 | 771.6 | 30.46 | 773.7 | 53.4 | 11.9 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | John Merrifield. |
| Roche's Point | 30.43 | 772.9 | 30.48 | 774.2 | 51 | 10.6 | ..... | WSW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Cloudy..... | W. Kennedy. |
| Saint Ann's Head | 30.31 | 769.9 | 30.48 | 774.2 | 53 | 11 7 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John C. Walker. |
| Sandwick Manse, (Orkneys. | ..... | ..... | 30.12 | 765.0 | 48.2 | 9.0 | ..... | NW | 30 | 13.4 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 29.64 | 752.8 | 45.0 | 7.2 | ..... | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast..... | Sergt. W. H. Lyne. |
| Sheffield | 30.14 | 765.5 | 30.42 | 772.7 | 51.5 | 10.8 | ..... | W | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | Overcast..... | W. F. Cooper. |
| Silloth Rectory | 30.34 | 770.6 | 30.37 | 771.4 | 49.7 | 9.8 | 70 | W | ..... | ..... | 6 | ..... | 8 | ..... | ..... | 0 | 0 | D. clouds..... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 30.02 | 762.5 | 30.42 | 772.7 | 47.8 | 8.8 | ..... | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. S. J. Perry. |
| Stornorway, Lews C., (Hebr.) | ..... | ..... | 30.16 | 766.1 | 51 | 10.6 | ..... | W | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | John Sutherland. |
| Stratfield Turgiss | 30.21 | 767.3 | 30.43 | 772.9 | 53.3 | 11.8 | ..... | NW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. C. H. Griffith, F.M. |
| Thurso | ..... | ..... | 30.14 | 765.5 | 51 | 10.6 | ..... | SW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 30.43 | 772.9 | 55 | 12.8 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 30.47 | 773.9 | 54.4 | 12.4 | ..... | SSE | 7 | 3.1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | The Staff. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.92 | 760.0 | 68.0 | 20.0 | 88 | NW | ..... | ..... | 5 | ..... | 10k | ..... | ..... | 0 | 0 | ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.85 | 758.2 | 30.04 | 762 9 | 82.1 | 27.8 | 78 | E | 14.0 | 6.3 | ..... | 2 | 2 | ..... | E | 0.55 | 14.0 | Fine..... | C. Meldrum. |
| Melbourne, Observatory | 30.14 | 765.5 | 30.23 | 767.8 | 60.0 | 15.6 | 76 | SE | 2 | 0.9 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Dull ..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1, 400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m.

| MARINE SERIES. VESSELS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Algeria, N. 56° 24', W. 26° 57' | ..... | ..... | 30.15 | 765.8 | 46.0 | 7.8 | ..... | N | ..... | ..... | 6 | ..... | 9 | N | ..... | 15* | NNW | Raining..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. O. Prehn. [R. |
| S. S. Peruvian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.18 | 665.0 | ..... | ..... | 70.2 | 21.2 | 89 | NE | ..... | ..... | 1 | 8c | 1cs | ..... | ..... | Inap. | Inap. | Storm | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.02 | 762.4 | 30.07 | 763.6 | 43.0 | 6.1 | 63 | WSW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | |
| Fanöe | 30.11 | 764.8 | 30.13 | 765.3 | 45.1 | 7.3 | 89 | NNW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Godthaab, (Greenland) | 29.80 | 756.8 | 29.84 | 757.9 | 29.5 | — 1.4 | ..... | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | |
| Stykkisholm, (Iceland) | 29.94 | 760.4 | 29.98 | 761.5 | 27.1 | — 2.7 | 92 | W | ..... | ..... | 8 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | |
| Thorshavn, (Faröe) | 29.81 | 757.1 | 29.84 | 758.0 | 44.1 | 6.7 | 86 | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | |
| Vestervig | 29.89 | 759.3 | 30.07 | 763.6 | 46.0 | 7.8 | 89 | NW | ..... | ..... | 7 | ..... | 4 | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.98 | 761.6 | 30.54 | 775.6 | 46.4 | 8 | 70 | NE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Collignon, Director. |
| Amiens, Normal School | 30.28 | 769.0 | 30.39 | 771.9 | 59.5 | 13.6 | 73 | NW | ..... | ..... | 2 | ..... | 5 | ..... | NW | 0 | 0 | Cloudy | Bonvarne, Director. |
| Avignon, Normal School | 29.98 | 761.5 | 30.06 | 763.5 | 57.2 | 14 | 47 | NNW | ..... | ..... | 8 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Mr. Giraud, Director |
| Bar-sur-Seine | 29.82 | 757.3 | 30.39 | 771.8 | 47.1 | 8.4 | 76 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | C. Saillard. |
| Beaumette Obs'y (Angers) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Albert Cheux. |
| Beauvais | ..... | ..... | ..... | ..... | 53.8 | 12.1 | 60 | NNE | ..... | ..... | 1 | ..... | 10 | ..... | NE | 0.010 | 0.25 | Covered | Normal School. |
| Besançon | 29.45 | 747.9 | 30.36 | 771.2 | 45.5 | 7.5 | ..... | ENE | ..... | ..... | 3 | ..... | 8 | ..... | N | 0.188 | 3.5 | Very cloudy | Normal School. |
| Bourg-en-Bresse | 29.46 | 748.3 | 30.39 | 771.8 | 47.1 | 8.4 | 88 | N | ..... | ..... | 8 | ..... | 10n | ..... | S | 0.059 | 1.5 | Covered | Normal School. |
| Bourges, Normal School | 29.80 | 756.8 | 30.35 | 770.9 | 52.9 | 11.6 | 85 | E | ..... | ..... | 1 | ..... | 2 | ..... | E | 0 | 0 | Slightly cov. | A. Wagner, Director. |
| Brest, Naval Observatory | 30.15 | 765.9 | 30.37 | 771.4 | 51.3 | 10.7 | 72 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | Calm | 0 | 0 | Misty | The Staff. |
| Carcassonne, Normal School | 29.87 | 758.8 | 30.30 | 769.5 | 57.2 | 14 | 78 | W | ..... | ..... | 2 | ..... | 2 | ..... | W | 0.138 | 3.5 | Slightly cl'dy | Vateau, Director. |
| Caen | 30.42 | 772.6 | 30.49 | 774.5 | 51.1 | 10.6 | 86 | NE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | Normal School. |
| Chartres, Normal School | 29.83 | 757.7 | 30.41 | 772.4 | 52.9 | 11.6 | 93 | NE | ..... | ..... | 2 | ..... | 5 | ..... | NE | 0 | 0 | ..... | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 30.06 | 763.4 | 30.38 | 771.7 | 47.7 | 8.7 | 94 | NW | ..... | ..... | 2 | ..... | 10kn | ..... | NW | 0 | 0 | Covered | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs. | 29.98 | 736.1 | 30.37 | 771.3 | 47.5 | 8.6 | 70 | N | ..... | ..... | 2 | ..... | 10 | ..... | N | 0.047 | 1.2 | Covered | Alluard, Director. |
| Commercy, Normal School | 29.47 | 748.4 | 30.37 | 771.4 | 46.4 | 8 | 86 | NW | ..... | ..... | 2 | ..... | 10 | ..... | NW | 0 | 0 | Covered | Dr. Goulet, Director. |
| Commune de Grèasque* | 28.91 | 734.3 | 30.05 | 763.3 | 62,8 | 17.1 | 32 | NW | ..... | ..... | 2 | ..... | 2 | ..... | NW | 0 | 0 | ¼ covered | M. Kina. |
| Grenoble | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| La Roche-sur-Yon, N. School | 30.19 | 766.8 | 30.41 | 772.4 | 57.2 | 14.0 | 62 | NW | ..... | ..... | 2 | ..... | 5 | ..... | NW | 0 | 0 | Cloudy | Mouillot, Director. |
| Le Mans, Normal School | 30.13 | 765.2 | 30.44 | 773.1 | 51.8 | 11 | 54 | NE | ..... | ..... | 4 | ..... | 8 | ..... | NE | 0 | 0 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.36 | 745.8 | 30.31 | 769.9 | 47.1 | 8.4 | 89 | NE | ..... | ..... | 2 | ..... | 10 | ..... | NE | 0.508 | 12.90 | Covered | Voudez, Director. |
| Lorient, Naval Observatory | 30.37 | 771.5 | 30.47 | 774.0 | 55.8 | 13.2 | 77 | S | ..... | ..... | 2 | ..... | 8 | ..... | S | 0 | 0 | ¾ covered | T. Carré, Director. |
| Mâcon, Normal School | 29.65 | 753.2 | 30.35 | 771.0 | 48.6 | 9.2 | 84 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | M. Marchal, Director. |
| Metz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. A. Schuster, Dir. |
| Mirecourt | 29.29 | 743.9 | 30.37 | 771.3 | 45.5 | 7.5 | 86 | NW | ..... | ..... | 2 | ..... | 10 | ..... | SE | 0 | 0 | Covered | Normal School. |
| Nismes, Normal School | 29.89 | 759.3 | 30.10 | 764.5 | 61.2 | 16.2 | 38 | N | ..... | ..... | 8 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Boyer, Director. |
| Orleans, Normal School | 30.03 | 762.7 | 30.42 | 772.6 | 51.8 | 11 | 65 | NE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Bernard, Director. |
| Paris, Observatory | 30.19 | 766.8 | 30.43 | 773.0 | 50.4 | 10.2 | 71 | NE | ..... | ..... | 1 | ..... | 10 | ..... | NE | 0.008 | 0.20 | Covered | National Observatory. |
| Privas | 29.13 | 739.8 | 30.21 | 767.4 | 50.0 | 10 | 47 | N | ..... | ..... | 6 | ..... | 5 | ..... | S | 0 | 0 | Cloudy | Normal School |
| Puy de Dome (Summit) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.39 | 772.0 | 30.43 | 772.8 | 58.1 | 14.5 | 63 | NE | ..... | ..... | 3 | ..... | 10 | ..... | NE | 0 | 0 | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 30.36 | 771.2 | 30.45 | 773.4 | 57.0 | 13.9 | 52 | N | ..... | ..... | 2 | ..... | 5 | ..... | NE | 0 | 0 | Cloudy | F. Lucard, Director. |
| Saint Malo (Port) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. H. Hercouet. |
| Tarbes, Normal School | 29.32 | 744.6 | 30.42 | 772.6 | 51.8 | 11 | 63 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | T. Hugues, Director. |
| Villefranche | 29.65 | 753.1 | 30.38 | 771.6 | 50.5 | 10.3 | 76 | N | ..... | ..... | 4 | ..... | 10 | ..... | NNE | 0.04 | 1. | Covered | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.81 | 757.1 | 29.84 | 757.8 | 80.6 | 27 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchési. |
| Lyons | ..... | ..... | 30.36 | 771.1 | 49.3 | 9.6 | ..... | ..... | ..... | ..... | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | M. Jeys. |
| Marseilles, Observatory | ..... | ..... | 29.98 | 761.6 | 63.5 | 17.5 | 50 | NW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 0 | 0 | Cloudy | The Staff. |
| Mont-Louis | 25.00 | 635.1 | 30.32 | 770.1 | 43.2 | 6.2 | 45 | N | 3.7 | 1.67 | ..... | ..... | 1 | ..... | NNE | 0 | 0 | ..... | Mr. Falguère. |
| Nice | 29.91 | 759.7 | 29.99 | 761.7 | 57.9 | 14.4 | 46 | S | ..... | ..... | 3 | ..... | 1 | ..... | W | 0 | 0 | Clear | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 30.15 | 765.7 | 30.42 | 772.7 | 50.7 | 10.4 | 70 | NNE | ..... | ..... | 2 | ..... | 9 | ..... | NE | Inap. | Inap. | ..... | Marié Davy, Director. |
| Perpignan | ..... | ..... | 30.22 | 767.6 | 60.4 | 15 8 | 55 | NW | 29.8 | 13.33 | ..... | ..... | 1 | ..... | NW | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.64 | 575.1 | ..... | ..... | 29.5 | — 1.4 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0.035 | 0.9 | Clear | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 30.26 | 768.7 | 30.43 | 772.9 | 52.2 | 11.2 | 57 | N | ..... | ..... | 2 | ..... | 8 | ..... | NNE | 0 | 0 | Covered | E. Renou. |
| Toulouse, Observatory | 29.65 | 753.1 | 30.38 | 771.7 | 53.8 | 12.1 | 55 | NW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Tours | 30.21 | 767.4 | 30.41 | 772.4 | 55.0 | 12.8 | 47 | NNE | ..... | ..... | 1 | ..... | 10 | ..... | N | 0 | 0 | ..... | C. Marquet. |
| Versailles, (near Paris) | ..... | ..... | 30.43 | 773.0 | 51.8 | 11.0 | 71 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Cloudy | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.28 | 769.0 | 30.30 | 769.6 | 48.2 | 9.0 | 92 | SE | 7.4 | 3.3 | ..... | 8cs | ..... | W | ..... | 0 | 0 | Covered | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day, the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. 2 Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | 2 | | 8 | | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 29.98 | 761.5 | 30.15 | 765.8 | 46.0 | 7.8 | 52 | NW | | | 4 | | 1 | | | 0.011 | 0.29 | | Prof. Arndt. |
| Breslau | 29.52 | 749.9 | 30.06 | 763.4 | 38.5 | 3.6 | 53 | N | | | 4 | | 10 | | | 0.118 | 3.0 | Drizzling | Royal University Obs'y |
| Carlsruhe | 29.87 | 758.6 | 30.31 | 769.9 | 44.6 | 7.0 | 91 | SW | | | 2 | | 10 | WNW | | 0 | 0 | | Albert Senz. |
| Cassel | 29.72 | 754.8 | 30.33 | 770.4 | 40.8 | 4.9 | 86 | NNW | | | 4 | | 10 | | | 0.04 | 1. | | Dr. H. Möhl. |
| Crefeld | 30.13 | 765.4 | 30.30 | 769.6 | 50.2 | 10.1 | 73 | N | | | 4 | | 9ks | N | | 0.004 | 0.1 | | Director Lose. |
| Emden | 30.30 | 769.5 | 30.33 | 770.4 | 46.2 | 7.9 | 88 | NW | | | 1 | | 10 | | | Inap. | Inap. | | Prof. Prestel. |
| Frankfort on the Main | 29.97 | 761.2 | 30.35 | 770.8 | 44.8 | 7.1 | 72 | SSW | | | 1 | | 10 | | | | | | Physical Society. |
| Friedrichshafen | 28.85 | 732.9 | 30.34 | 770.6 | 43.2 | 6.2 | 68 | N | | | 3 | | 7 | NW | | 0.177 | 4.5 | | M. Wilhelm. |
| Hamburg | 30.09 | 764.2 | 30.16 | 766.0 | 44.1 | 6.7 | 99 | NW | | | 3 | | 10 | | | 0.016 | 0.4 | Rain & fog | Captain F. Hegemann. |
| Kiel | 30.11 | 764.9 | 30.13 | 765.3 | 46.0 | 7.8 | 93 | NW | | | 3 | | 10 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.88 | 758.9 | 29.96 | 761.0 | 34.5 | 1.4 | 79 | N | | | | | | | | 0.044 | 1.13 | Snowing | Prof. E. Luther. |
| Köslin | | | 30.06 | 763.4 | 36.5 | 2.5 | | NNW | | | 4 | | 0 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.81 | 757.1 | 30.24 | 768.2 | 42.8 | 6.0 | 63 | NW | | | 3 | | 10 | NW | | 0.122 | 3.1 | | Prof. Bruhns. |
| Memel, Naval School | 29.89 | 759.1 | 29.93 | 760.3 | 34.9 | 1.6 | 78 | N | | | 2 | | 16ks | | | | | | Reinbrech von Skalweit. |
| Neufahrwasser | 30.00 | 761.9 | 30.01 | 762.3 | 36.7 | 2.6 | 72 | N | | | 4 | | 8 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.81 | 757.2 | 30.11 | 764.8 | 40.6 | 4.8 | 60 | NW | | | 3–4 | | 5 | | | 0 | 0 | Cloudy | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.79 | 756.6 | 30.35 | 771.0 | 44.2 | 6.8 | 86 | Calm | | | 0 | | 10 | NNW | | 0.021 | 0.54 | Raining | Dr. Schur. |
| Stuttgart | 29.32 | 744.7 | 30.29 | 769.3 | 44.6 | 7.0 | 78 | N | | | 1 | | 10 | | | 0.134 | 3.4 | Raining | Prof. Schoder. |
| Treves, (Trier) | 29.71 | 754.6 | 30.24 | 768.0 | 49.8 | 9.9 | 70 | WNW | | | 4 | | 10 | | | 0.004 | 0.11 | Foggy | Prof. Fiesch. |
| Weissenburg, (Bavaria) | 28.71 | 729.1 | 30.26 | 768.7 | 40.5 | 4.7 | 68 | WNW | 4 | 2 | | | 10 | | NW | 0.008 | 0.2 | Covered | Dr. Von Bebber. |
| Wustrow, Naval School | 30.15 | 765.8 | 30.20 | 767.1 | 40.6 | 4.8 | 78 | WSW | | | 2 | | 10 | | | 0 | 0 | Covered | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Königsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.40 | 746.7 | 29.80 | 756.8 | 57.4 | 14.1 | | NW | | | 3.0 | | | | | | | Clear. | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.87 | 758.6 | 29.92 | 759.9 | 78.7 | 25.9 | 70 | SW | 27.0? | 12.1? | | | 2 | | | 0 | 0 | D. clouds | |
| Deesa | 29.43 | 747.5 | 29.90 | 759.4 | 91.0 | 32.8 | 28 | Calm | | | | | 1 | SSW | | 0 | 0 | D. clouds | |
| Bombay | 29.92 | 759.8 | 29.95 | 760.8 | 81.4 | 27.4 | 70 | WNW | 12.0 | 5.4 | | | 3 | S | SW | 0 | 0 | D. clouds | |
| Poona | 27.88 | 708.2 | 29.86 | 758.3 | 87.4 | 30.8 | 35 | WNW | | | | | 1 | | | 0 | 0 | Dust-whirl. | |
| Lahore | 29.20 | 741.6 | 29.95 | 760.6 | 79.9 | 26.6 | 37 | Calm | 0.9 | 0.4 | | | 10 | | | 0 | 0 | Overcast | |
| Belgaum | 27.40 | 695.9 | 29.90 | 759.4 | 84.8 | 29.3 | 54 | W | 8.0 | 3.6 | | | 3 | | SW | 0 | 0 | D. clouds | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 29.03 | 737.4 | 29.94 | 760.4 | 77.4 | 25.2 | 42 | Calm | 1.0 | 0.4 | | | 10 | | | 0 | 0 | | |
| Agra | 29.39 | 746.4 | 29.95 | 760.6 | 86.7 | 30.4 | 23 | W | | | | | | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.83 | 732.2 | 29.85 | 758.1 | 92.5 | 33.6 | 35 | Calm | 4.0 | 1.8 | | | 9 | | E | 0 | 0 | D. clouds | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.57 | 751.2 | 29.95 | 760.6 | 82.8 | 28.2 | 66 | WNW | 3.7 | 1.6 | | | 5 | | | 0 | 0 | D. clouds | |
| Allahabad | 29.61 | 752.1 | 29.92 | 760.0 | 83.7 | 28.7 | 26 | Calm | 1.4 | 0.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.73 | 755.1 | 29.91 | 759.7 | 84.0 | 28.9 | 24 | W | 1.3 | 0.6 | | | 6 | W | W | 0 | 0 | D. clouds | |
| Hazaribagh | 27.94 | 709.5 | 29.95 | 760.6 | 80.6 | 27.0 | 21 | NW | 7.3 | 3.3 | | | 8 | | SW | 0 | 0 | | |
| Cuttack | 29.83 | 757.8 | 29.91 | 759.8 | 88.1 | 31.2 | 52 | SW | 2.3 | 1.0 | | | 3 | | | 0 | 0 | D. clouds | |
| Calcutta (Alipore) | 29.92 | 760.0 | 29.94 | 760.6 | 82.9 | 28.3 | 60 | NE | 3.0 | 1.3 | | | 3 | | SW | 0 | 0 | D. clouds | |
| Goalpara | 29.56 | 750.7 | 29.95 | 760.6 | 80.3 | 26.8 | 29 | Calm | 1.6 | 0.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.88 | 759.0 | 29.98 | 761.4 | 81.7 | 27.6 | 83 | | 6.3 | 2.8 | | | 4 | | | 0 | 0 | Misty | |
| Sibsagar | 29.69 | 754.2 | 30.04 | 762.9 | 72.2 | 22.3 | 78 | ENE | 3.5 | 1.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.56 | 725.5 | 29.91 | 759.8 | 87.0 | 30.6 | 27 | SW | 2.9 | 1.3 | | | 8 | SE | | 0 | 0 | Overcast | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.48 | 748.8 | 29.90 | 759.5 | 55.6 | 13.1 | 21 | SW | 1.3 | 0.6 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 29.78 | 756.4 | 29.89 | 759.3 | 56.5 | 13.6 | 32 | W | 9.4 | 4.2 | ..... | ..... | 1 | W | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Vicenza | 29.68 | 753.9 | 29.88 | 758.9 | 59.9 | 15.5 | 25 | S | 7.4 | 3.3 | ..... | ..... | 1 | W | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.61 | 726.6 | 29.95 | 760.7 | 56.1 | 13.4 | 37 | NE | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. Trioufini Carlo. |
| Milan | 29.45 | 747.9 | 29.97 | 761.3 | 54.1 | 12.3 | ..... | SW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.07 | 738.3 | 29.99 | 761.7 | 60.1 | 15.6 | 48 | SSW | 3.1 | 1.4 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 28.06 | 712.6 | 30.00 | 762.1 | 59.0 | 15.0 | 18 | N | ..... | ..... | 2 | ..... | 1 | N | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.78 | 756.3 | 30.00 | 762.1 | 57.6 | 14.2 | 63 | SW | ..... | ..... | 4 | ..... | 2 | NE | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.82 | 757 3 | 29.99 | 761.7 | 57.2 | 14.0 | 54 | SW | 5.6 | 2.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.67 | 753.5 | 29.99 | 761.7 | 60.8 | 16.0 | 37 | WNW | ..... | ..... | 6 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.69 | 754.1 | 29.95 | 760.8 | 58.1 | 14.5 | 37 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 29.89 | 759.2 | 29.98 | 761.4 | 54.0 | 12.2 | 70 | NE | 3.1 | 1.4 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 29.91 | 759.8 | 29.97 | 761.1 | 47.8 | 8.8 | 89 | N | 12.5 | 5.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.39 | 721.1 | 30.00 | 761.9 | 51.8 | 11.0 | 47 | NE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.86 | 758.4 | 29.97 | 761.3 | 59.7 | 15.4 | 64 | SSE | ..... | ..... | 2 | ..... | 3 | S | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.81 | 757.1 | 29.99 | 761.7 | 58.1 | 14.5 | 57 | W | 1.8 | 0.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U | 29.74 | 755.5 | 29.95 | 760.6 | 58.6 | 14.8 | 62 | WSW | ..... | ..... | 2 | ..... | 7 | W | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 63.1 | 11.7 | 67 | NNE | 15.4 | 6.9 | ..... | ..... | 7 | N | ..... | 0.012 | 0.3 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.77 | 756.2 | 29.97 | 761.2 | 62.2 | 16.8 | 43 | NW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0.024 | 0.6 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.05 | 737.8 | 29.95 | 760.8 | 53.2 | 11.8 | 71 | SW | 5.6 | 2.5 | ..... | ..... | 5 | ..... | ..... | 0.205 | 5.2 | ..... | Prof. F. D. Conti. |
| Palermo | 29.66 | 753.3 | 29.92 | 759.9 | 55.4 | 13.0 | 53 | WNW | 8.1 | 3.6 | ..... | ..... | 4 | ..... | ..... | 0.059 | 1.5 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.82 | 757.4 | 29.89 | 759.3 | 56.1 | 13.4 | 58 | E | ..... | ..... | 1 | ..... | 4 | WNW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.41 | 747.1 | 29.97 | 761.2 | 55.9 | 13.3 | 57 | SW | 0.7 | 0.3 | ..... | ..... | 4 | W | ..... | 0 | 0 | ..... | Prof. F. Brioschi |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.7 ft.; Mondovi, 556 m., or 1,824.4 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 29.81 | 757.2 | 29.88 | 758.9 | 50 2 | 10.1 | 95 | NNE | 4.0 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0.155 | 3.94 | Raining | The Observatory. |
| Tokei (Yeddo) University | 29.78 | 756.4 | 29.88 | 758.9 | 51.2 | 10.7 | 93 | SW | 1 | 0.4 | ..... | ..... | 10n | ..... | ..... | 0.15 | 3.8 | Light rain | Prof. P. V. Veeder. |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | 25.00 | 635.1 | 29.87 | 758.6 | 67.2 | 14.0 | 49 | N | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | L. Castillo, A. E. |
| Guadalajara | 25 00 | 635.0 | 30.08 | 763.9 | 39.2 | 4.4 | 60 | SW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Blue sky | Prof. L. Perez. |
| Guanajuato | 23.59 | 599.3 | 29.86 | 758.5 | 50.5 | 10.3 | 60 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 49.1 | 9.5 | 53 | NNW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | Prof. M. Leal. |
| Mexico | 22.97 | 583.3 | 30.06 | 763.5 | 49.1 | 9.5 | 47 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | ..... | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 41.5 | 5.3 | 64 | E | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | M. V. de Leon, M. E. |
| Puebla | 23.25 | 590.6 | 29.94 | 760.5 | 50.5 | 10.3 | 73 | SE | 6.3 | 2.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. B. Gonzales. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotulpam | 29.90 | 759.5 | 29.91 | 759.8 | 70.1 | 21.5 | 75 | N | 26.1 | 11.7 | ..... | 5c | 5n | ..... | N | 0 | 0 | Threatening | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 29.85 | 758.1 | 29.88 | 758.8 | 72.5 | 22.5 | 63 | N | 9.7 | 4.3 | ..... | 0 | 6sk | ..... | ..... | 0 | 0 | ½ cloudy | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 40.1 | 4.5 | 77 | SW | 5.1 | 2.3 | ..... | 10 | 0 | SW | ..... | 0 | 0 | Covered | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Spina. [M. M. D. D. |
| Morelia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Tena, F. L. Param. |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.5 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Groningen | 30.43 | 772.8 | 30.43 | 772.8 | 52.2 | 11.2 | ..... | NW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.004 | 0.1 | ..... | |
| Helder | 30.23 | 767.7 | 30.28 | 769.1 | 46.8 | 8.2 | ..... | N | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.028 | 0.7 | ..... | |
| Hellevoetsluis | 30.35 | 770.8 | 30.35 | 770.8 | 45.7 | 7.6 | ..... | NW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Utrecht | 30.39 | 771.8 | 30.39 | 771.8 | 50.4 | 10.2 | 84 | WNW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | 30.32 | 770.1 | 30.37 | 771.3 | 53.2 | 11.8 | 73 | NNW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | H. v d Brink. |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.95 | 760.8 | 30.01 | 762.2 | 45.0 | 7.2 | 91 | WSW | 15.9 | 7.1 | ..... | ..... | 7 | ..... | ..... | 0.520 | 13.2 | Raining..... | |
| Brönö | 29.44 | 747.8 | 29.48 | 748.8 | 39.2 | 4.0 | 84 | WSW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | 0.512 | 13.0 | ..... | |
| Christiania | 29.74 | 755.5 | 29.89 | 759.3 | 43.3 | 6.3 | 69 | SW | 0 | 0 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.15 | 740.5 | 29.20 | 741.6 | 28.8 | — 1.8 | 84 | SW | 11 | 5 | ..... | ..... | 10 | ..... | ..... | 0.236 | 6.0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.97 | 761.3 | 30.17 | 766.2 | 58.6 | 14.8 | 82 | NNE | 15.4 | 6.9 | ..... | ..... | 2 | ..... | ..... | 0.079 | 2.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.24 | 742.7 | 30.26 | 768.6 | 64.4 | 18.0 | 26 | E | 4.3 | 1.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.10 | 764.6 | 30.19 | 766.8 | 63.5 | 17.5 | 50 | E | 9.4 | 4.2 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.92 | 759.9 | 30.28 | 769.0 | 62.1 | 16.7 | 85 | S | 2.5 | 1.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.11 | 764.8 | 30.20 | 767.0 | 58.3 | 14.6 | 89 | NNE | 6.9 | 3.1 | ..... | ..... | 10 | ..... | ..... | 0.316 | 8.0 | Light rain... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell: Height scale. 0–9 | Sea or swell: Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.70 | 754.3 | 29.70 | 754.4 | 88.2 | 31.2 | ..... | ENE | ..... | ..... | 2 | ..... | 1 | ..... | ENE | 1 | ..... | Blue sky..... | J. F. R. R. Bastos, Com'd't. A. J. de Mattos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Sado, N. 14° 43′, W. 20° 05′ | 30.07* | 763.8* | 30.08* | 764.1* | 71.6 | 22 | ..... | NNE | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 6 | NNE | Blue sky.. ... | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.81 | 757.1 | 29.81 | 757.2 | ..... | ..... | ..... | W | ..... | ..... | 3 | ..... | 4 | ..... | W | 1 | ..... | Blue sky..... | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreina, dos Amas, Com' |

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.42 | 747.3 | 29.86 | 758.4 | 34.0 | 1.1 | 79 | NNW | 16 | 7 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing..... | Astronomical Obs. |
| Wilna | 29.37 | 746.0 | 29.80 | 757.0 | 36.5 | 2.5 | 74 | NE | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy clouds... | Astronomical Obs. |
| Dorpat | 29.64 | 752.9 | 29.89 | 759.3 | 34.7 | 1.5 | 86 | N | 4 | 2 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.85 | 758.1 | 29.86 | 758.5 | 33.6 | 0.9 | 75 | ENE | 4 | 2 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.45 | 748.0 | 29.78 | 756.5 | 32.5 | 0.3 | 96 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Ch. Forsten. |
| Kieff | 28.76 | 730.4 | 29.41 | 746.9 | 30.0 | — 1.1 | 94 | N | 16 | 7 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing..... | Physical Cabinet. |
| Nikolaiev | 29.14 | 740.2 | 29.21 | 742.0 | 32.9 | 0.5 | 87 | NE | 18 | 8 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.20 | 741.7 | 29.22 | 742.2 | 41.0 | 5.0 | 81 | S | 9 | 4 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.16 | 740.7 | 29.73 | 755.1 | 34.2 | 1.2 | 73 | NE | 7 | 3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.01 | 736.9 | 29.22 | 742.1 | 41.0 | 5.0 | 72 | SW | 9 | 4 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Meteorological Obs. |
| Archangel | 29.72 | 755.0 | 29.74 | 755.5 | 30.9 | — 0.6 | 85 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.01 | 711.4 | 29.41 | 747.1 | 48.0 | 8.9 | 39 | N | 45 | 20 | ..... | ..... | 3k | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 29.32 | 744.8 | 29.24 | 742.7 | 40.3 | 4.6 | 97 | NNW | 2 | 1 | ..... | ..... | 10n | ..... | ..... | Blank | Blank | Heavy clouds... | Sebastianof. |
| Kasan | 29.50 | 749.3 | 29.78 | 756.4 | 30.7 | — 0.7 | 91 | NE | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.96 | 735.6 | 29.94 | 760.4 | 34.3 | 1.3 | 49 | Calm | 0 | 0 | ..... | ..... | 3c;cs | ..... | ..... | ..... | ..... | ..... | Meteorological Obs |
| Nukuss | 29.08 | 738.6 | 29.30 | 744.3 | 65.7 | 18.7 | 86 | SSW | 11 | 5 | ..... | ..... | 7k | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.13 | 714.4 | 29.78 | 756.5 | 64.8 | 18.2 | 37 | W | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.70 | 754.3 | 30.26 | 768.5 | 22.1 | — 5.5 | 80 | W | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.62 | 752.3 | 29.96 | 760.9 | 27.9 | — 2.3 | 82 | WNW | 20 | 9 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Snowing..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Krotkowo* | 29.17 | 741.0 | 29.66 | 753.3 | 29.5 | — 1.4 | 69 | ENE | 16 | 7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Peking, (China) | 30.09 | 764.3 | 30.23 | 767.9 | 50.4 | 10.2 | 20 | NW | 18 | 8 | ..... | ..... | 8n | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.92 | 709.2 | 30.13 | 765.4 | 14.5 | — 9.7 | 55 | NW | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 14.5 | — 9.7 | 94 | NNE | 13 | 6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing..... | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | ..... | ..... | 30.01 | 762.2 | 58.3 | 14.6 | 62 | S | 2.1 | 0.94 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.33 | 770.4 | 30.39 | 771.8 | 59.4 | 15.2 | 75 | N | 1.5 | 0.67 | ..... | 8 | 5 | E | ..... | 0.020 | 0.5 | Almost cov.. | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.32 | 694.0 | ..... | ..... | 48.4 | 9.1 | 76 | NE | 9.8 | 4.39 | ..... | 0 | 7 | ..... | ..... | 0 | 0 | Cloudy..... | Domingo Martin y Perez |
| Madrid, Royal Observatory | 28.00 | 711.1 | 30.22 | 767.5 | 62.4 | 16.9 | 40 | E | 8.2 | 3.67 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | The Staff. |
| Murcia, Met. Obs'y | 30.07 | 763.7 | 30.22 | 767.5 | 70.7 | 21.5 | 34 | SSE | 2.7 | 1.22 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.35 | 745.5 | 30.24 | 768.1 | 63.1 | 17.3 | 47 | WNW | 1.6 | 0.72 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.93 | 760.2 | 30.00 | 761.9 | 70.0 | 21.1 | 79 | E | 16.1 | 7.2 | ..... | 0 | 1k | ..... | ..... | 0 | 0 | Clear..... | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 30.16 | 766.0 | 30.26 | 768.5 | 64.6 | 18.1 | 41 | NW | 8.9 | 4.0 | ..... | 0 | 1 | ..... | W | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.88 | 758.9 | 29.97 | 761.2 | 81.0 | 27.2 | 86 | SE | 0 | 0 | ..... | 2cs | 1k | SE | SE | 0 | 0 | Clear..... | Leonardo de Tejeda, Chief of Engineers. |

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft. The barometer readings at Barcelona are published as given.

## SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-10. | Clouds. Amount. Up'er 0-10. | Clouds. Amount. Low'r 0-10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.52 | 749.9 | 29.56 | 750.9 | 28.4 | — 2.0 | ..... | S | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0.157 | 4.0 | ..... | ..... |
| Umea | 29.56 | 750.9 | 29.61 | 752.2 | 31.3 | — 0.4 | 100 | SW | ..... | ..... | 7 | ..... | 9 | ..... | ..... | ..... | ..... | Snowing | ..... |
| Hernosand | 29.60 | 751.8 | 29.65 | 753.1 | 44.2 | 6.8 | 71 | SSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... |
| Stockholm | 29.73 | 755.2 | 29.91 | 759.7 | 39.6 | 4.2 | 64 | SW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | ..... |
| Wisby | 29.89 | 759.1 | 29.95 | 760.6 | 36.0 | 2.2 | 65 | NNW | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.82 | 757.3 | 29.89 | 759.2 | 38.8 | 3.8 | 48 | SW | 14.1 | 6.3 | ..... | ..... | 6 | NW | ..... | 0.001 | 0.02 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.84 | 732.4 | 30.27 | 768.9 | 50 4 | 10.2 | 51 | NE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0 | 0 | Cloudy | The Observatory. |
| Zurich | 28.65 | 727.8 | 30.32 | 770.2 | 45.1 | 7.3 | 72 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.063 | 1.6 | Raining | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +7.9 mm.; Thermometer, +1.9 cent.; Relative Humidity, —9 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.68 | 753.8 | 46.4 | 8.0 | 64 | SW | 10 | 4.5 | ..... | ..... | 10 | ..... | W | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanidès. |
| Valona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. Bertrand. |
| Varna | ..... | ..... | 29.85 | 758.2 | 52.3 | 11.3 | ..... | W | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria.) Lee Obs'y | 29.72 | 754.9 | 29.84 | 757.8 | 59.5 | 15.3 | 67 | WSW | ..... | ..... | 3 | ..... | 8n | ..... | SW | 0.12 | 3.0 | D. clouds | Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | W. R. Bigg. |
| *Chatham, N. B | 29.71 | 754 6 | 30.03 | 762.7 | 29 | — 1.7 | ..... | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | G. A. Blair. |
| Charlottetown, P. E. Island | 29.82 | 744.7 | 29.98 | 746.2 | 26 | — 3.3 | 93 | SW | 5 | 2.2 | ..... | 2k | 8ks | NW | NW | 0.02 | 0.5 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.80 | 744.2 | 29.84 | 745.2 | 30 | — 1.1 | 75 | W | 3 | 1.3 | ..... | 0 | 5ks | ..... | W | 0 | 0 | Fair | James Smith, M. A. |
| Dalhousie, N. B | 29.73 | 755.1 | 29.93 | 760.2 | 37.1 | 2.8 | 90 | NW | ..... | ..... | 3 | 0 | 3s | ..... | ..... | 0 | 0 | Fair | H. A. Johnson. |
| Esquimault, B. C | 29.83 | 745.0 | 29.86 | 745.7 | 29.0 | — 1.7 | 86 | W | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | Clear | W. H. Bevis. |
| *Father Point, Quebec | 29.78 | 756.4 | 29.82 | 757.4 | 51.3 | 10.7 | 93 | N | ..... | ..... | ..... | 9cs | 0 | ..... | ..... | 0 | 0 | Cloudy | J. McWilliams. |
| Fredericton, N. B | ..... | ..... | 29.45 | 748.0 | 27 | — 2.8 | 86 | NW | 23 | 10.3 | ..... | ..... | 10n | ..... | Calm | 0.05 | 1.3 | Light snow | Prof. Harrison. |
| *Fort Garry Manitoba | 29.40 | 746.7 | 29.47 | 748.5 | 32.4 | 0.2 | 68 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | ..... | Inap. | Inap. | Cloudy | James Stewart. |
| Goderich, Ontario | 29.33 | 745.0 | 30.19 | 766.8 | 32 | 0.0 | 90 | S | 4 | 1.8 | ..... | 5k | 5ks | W | W | 0 | 0 | Cloudy | H. J. Strang, M. A. |
| Granton, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Grant. |
| *Halifax, N. S | 29.08 | 738.6 | 30.24 | 768.1 | 31.1 | — 0.6 | 88 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Grant. |
| Hamilton, Ontario | 29.26 | 743.2 | 29.30 | 746.5 | 34 | 1.1 | 91 | W | 15 | 6.7 | ..... | ..... | 10n | ..... | W | Inap. | Inap | Cloudy | F. Allison, M. A. |
| Heart's Content, N. F | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Geo. Dickson, M. A. |
| *Kingston, Ontario | 29.01 | 736.8 | 29.03 | 737.3 | 42 | 5.6 | 91 | S | ..... | ..... | 5 | 1k | 3ks | ..... | S | 0.97 | 24.6 | Fair | E. Weedon. |
| Little Glace Bay, N. S | 29.71 | 754.6 | 30.06 | 763.5 | 30 | — 1.1 | 48 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.11 | 2.8 | Clear | S. Woods, M. A. |
| *Montreal, Quebec | 29.20 | 741.7 | 29.24 | 742.7 | 32.5 | 0.3 | ..... | W | 3 | 1.3 | ..... | 8k | 0 | W | ..... | 0 | 0 | Cloudy | C. H. Rigby. |
| *Parry Sound, Ontario | 29.63 | 752.6 | 29.84 | 757.9 | 27 | — 2.8 | 65 | NW | 21 | 9.4 | ..... | 5k | 2s | W | ..... | 0.03 | 0.8 | Cloudy | C. H. McLeod, C. E. |
| Peterboro, Ontario | 29.48 | 748.8 | 30.21 | 767.3 | 25 | — 3.9 | 75 | NW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | Rev. R. Mosley. |
| Port Dover, Ontario | 29.34 | 745.2 | 30.13 | 765.3 | 30.6 | — 0.8 | 65 | NW | ..... | ..... | ..... | 0 | 1s | ..... | ..... | 0 | 0 | Fine | J. F. Jeffers, B. A. |
| Port Hastings, N. S | 29.40 | 749.0 | 30.22 | 767.6 | 33 | 0.6 | 70 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Clear | H. Morgan. |
| Port Stanley, Ontario | 29.27 | 743.4 | 29.32 | 744.7 | 32.8 | 0.4 | ..... | NW | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | Peter Grant. |
| *Quebec, Quebec | 29.56 | 750.8 | 30.24 | 768.1 | 32 | 0.0 | 85 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | M. Payne. |
| *Rockliffe, Ontario | 29.32 | 744.7 | 29.65 | 753.1 | 27 | — 2.8 | 64 | NW | ..... | ..... | 6 | ..... | 10n | ..... | NW | 0 | 0 | Cloudy | Capt. Ashe, R. N. |
| St. Andrews, N. B | 29.63 | 752.6 | 30.12 | 765.0 | 23 | — 5.0 | 54 | NW | 12 | 5.4 | ..... | 0 | 8s | ..... | NW | Inap. | Inap. | Fair | W. H. McIntyre. |
| St. John, N. B | 29.43 | 747.5 | 29.48 | 748.8 | 35 | 1.7 | 89 | NW | 4 | 1.8 | ..... | 5k | 2ks | N | NE | 0 | 0 | Cloudy | Dr. Gove. |
| *Saugeen, Ontario | 29.30 | 744.2 | 29.47 | 748.5 | 33 | 0.6 | 89 | NW | 3 | 1.3 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Cloudy | G. Murdock, C. E. |
| Stayner, Ontario | 29.49 | 749.0 | 30.24 | 768.1 | 32 | 0.0 | 81 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | K. Stewart. |
| Stratford, Ontario | 29.40 | 746.7 | 30.22 | 767.6 | 30 | — 1.1 | 85 | N | 15 | 6.7 | ..... | 5k | 0 | NW | ..... | 0 | 0 | Cloudy | R. J. Cole. |
| *Sydney, C. B | 28.88 | 733.5 | 30.23 | 767.8 | 29.4 | — 1.4 | 75 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | C. J. MacGregor, M. A. |
| *Toronto, Ontario | 29.24 | 742.7 | 29.27 | 743.4 | 35 | 1.7 | 80 | W | 11 | 4.9 | ..... | 8ck | 2ks | S | W | 0.20 | 5.1 | Cloudy | T. C. Hill. |
| Windsor, N. S | 29.79 | 756.7 | 30.20 | 767.1 | 33 | 0.6 | 61 | NW | 15 | 6.7 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | Magnetic Observatory. |
| Woodstock, Ontario | 29.31 | 744.5 | 29.40 | 746.7 | 34.0 | 1.1 | 100 | W | 8 | 3.6 | ..... | ..... | 10n | ..... | ..... | Inap. | Inap. | Snowing | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | J. Montgomery. |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 35.0 | 1.7 | 100 | SE | ..... | ..... | ..... | 5ks | 8s | ..... | ..... | 0.42 | 10.7 | Cloudy | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the SECRETARY OF WAR.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chie Signal Officer, U. S. Army.

| STATIONS. | Barometer: Corrected for instrumental error and temperature. Inches. | Barometer: Corrected for instrumental error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.62 | 752.3 | 29.85 | 758.2 | 36 | 2.2 | 61 | NW | 16 | 7.2 | ..... | ..... | 10ks | ..... | NW | 0.03 | 0.8 | Cloudy | |
| Alpena, Michigan | 29.59 | 751 6 | 30.27 | 768.8 | 32 | 0.0 | 79 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Atlantic City, New Jersey | 29.93 | 760.2 | 29.95 | 760.7 | 41 | 5.0 | 83 | W | 10 | 4.5 | ..... | ..... | 10ks | ..... | W | Inap. | Inap. | Cloudy | |
| Augusta, Georgia | 30.00 | 762.0 | 30.19 | 766.8 | 47 | 8.3 | 85 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Smoky | |
| Baltimore, Maryland | 29.99 | 761.7 | 30.04 | 763.0 | 48 | 8.9 | 56 | NW | 16 | 7.2 | ..... | 2ck | 0 | NW | ..... | 0 | 0 | Clear. | |
| Barnegat, New Jersey | 29.91 | 759.7 | 29.94 | 760.5 | 47 | 8.3 | 62 | NW | 16 | 7.2 | ..... | 2k | 0 | W | ..... | 0 | 0 | Clear | |
| Bismarck, Dakota | 28.19 | 716.0 | 30.05 | 763.3 | 42 | 5.6 | 83 | SE | 9 | 4.0 | ..... | 2cs | 0 | NW | ..... | Inap. | Inap. | Clear | |
| Boise City, Idaho | 27.26 | 692.4 | 30.14 | 765.5 | 48 | 8.9 | 63 | S | 8 | 3.6 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Boston, Massachusetts | 29.57 | 751.1 | 29.72 | 754.9 | 38 | 3.3 | 64 | NW | 15 | 6.7 | ..... | 5ck | 1s | NW | ..... | 0 | 0 | Fair | |
| Brackettville, Texas | 28.95 | 735.3 | 29.99 | 761.7 | 54 | 12.2 | 73 | Calm | 0 | 0 | ..... | 0 | 2s | ..... | SW | 1.13 | 28.7 | Fair | |
| Breckenridge, Minnesota | 29.15 | 740.4 | 30.20 | 767.1 | 31 | — 0.6 | 89 | S | 7 | 3.1 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Brownsville, Texas | 29.91 | 759.7 | 29.98 | 761.5 | 59 | 15.0 | 93 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | N | 2.09 | 53.1 | Cloudy | |
| Buffalo, New York | 29.44 | 747.8 | 30.17 | 766.3 | 33 | 0.6 | 70 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 54 | 12.2 | 67 | S | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.58 | 751.3 | 29.85 | 758.2 | 31 | — 0.6 | 60 | NW | 12 | 5.4 | ..... | ..... | 10s | ..... | NW | Inap. | Inap. | Cloudy | |
| Cairo, Illinois | 29.78 | 756 4 | 30.18 | 766.6 | 52 | 11.1 | 73 | Calm | 0 | 0 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Camp Grant, Arizona | 25.30 | 642.6 | 30.16 | 764.5 | 51 | 10.6 | 28 | NE | ..... | ..... | 3 | 0 | 2s | ..... | N | 0 | 0 | Fair | |
| Camp Verde, Arizona | 26.89 | 683.0 | 30.36 | 771.0 | 47 | 8.3 | 77 | W | ..... | ..... | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| Camp ), California | 27.46 | 6 7.5 | 30.03 | 762.7 | 37 | 2.8 | 90 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.05 | 763.3 | 30.06 | 763.5 | 54 | 12.2 | 74 | NW | 9 | 4.0 | ..... | 2ck | 2s | W | W | 0 | 0 | Fair | |
| Cape Henry, Virginia | 30.00 | 762.0 | 30.02 | 762.5 | 52 | 11.1 | 66 | SW | 4 | 1.8 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Cape Lookout, N. Carolina | 30.08 | 764 0 | 30.10 | 764.5 | 56 | 13.3 | 69 | W | 20 | 8.9 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Fair | |
| Cape May, New Jersey | 29.96 | 761.0 | 29.99 | 761.7 | 47 | 8.3 | 77 | NW | 12 | 5.4 | ..... | 8k | 0 | W | ..... | 0 | 0 | Fair | |
| Charleston, South Carolina | 30.15 | 765.8 | 30.22 | 767.6 | 53 | 11.7 | 80 | W | 6 | 2.7 | ..... | 2cs | Sm'e | Calm | Calm | 0 | 0 | Fair | |
| Cheyenne, Wyoming | 24.14 | 613 1 | 30.08 | 764.0 | 36 | 2.2 | 71 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.56 | 750 8 | 30.28 | 769.1 | 38 | 3.3 | 72 | NE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cincinnati Ohio | 29.55 | 750.6 | 30.21 | 767.3 | 46 | 7.8 | 69 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cleveland, Ohio | 29.51 | 749.5 | 30.26 | 768.6 | 37 | 2 8 | 63 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Concho, Texas | 28.22 | 716.8 | 29.91 | 759.7 | 40 | 4.4 | 48 | NW | 2 | 0.9 | ..... | 8k | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Corsicana, Texas | 29.88 | 753.9 | 30.16 | 766.1 | 50 | 10.0 | 58 | NE | 4 | 1.8 | ..... | 2cs | Haze | Calm | Calm | 0 | 0 | Fair | |
| Davenport, Iowa | 29.94 | 752.8 | 30.31 | 769.9 | 38 | 3.3 | 72 | E | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Deadwood, Dakota | 25.50 | 647.7 | ..... | ..... | 35 | 1.7 | 90 | S | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Denison, Texas | 29.39 | 746.5 | 30.21 | 767.3 | 52 | 11.1 | 60 | N | 2 | 0.9 | ..... | Haze | Haze | ..... | ..... | 0 | 0 | Hazy | |
| Denver, Colorado | 24.89 | 632 2 | 30.11 | 764.8 | 38 | 3.3 | 63 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Detroit, Michigan | 29.55 | 750.6 | 30.25 | 768.3 | 35 | 1.7 | 70 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Dodge City, Kansas | 27.55 | 700.0 | 29.89 | 759.2 | 46 | 7.8 | 77 | SW | 1 | 0.4 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.50 | 751 8 | 30.34 | 770.6 | 36 | 2.2 | 61 | SE | 3 | 1.3 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Duluth, Minnesota | 29.92 | 752.3 | 30.33 | 770.4 | 34 | 1.1 | 79 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Eagle Pass, Texas | 29.34 | 745.2 | 30.08 | 764.0 | 55 | 12.8 | 87 | NE | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0.29 | 7.4 | Cloudy | |
| Eastport, Maine | 29.47 | 748.5 | 30.22 | 767.6 | 36 | 2.2 | 80 | N | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Erie, Pennsylvania | 29.40 | 746.7 | 29.47 | 748.5 | 35 | 1.7 | 74 | NW | 9 | 4.0 | ..... | 10k | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Escanaba, Michigan | 29.88 | 753.9 | 30.38 | 771.6 | 31 | — 0.6 | 68 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Florence, Arizona | 28.38 | 720.8 | 29.98 | 761.5 | 66 | 18.9 | 41 | SE | ..... | ..... | ..... | 8c | 0 | NW | ..... | 0 | 0 | Fair | |
| Fort Bayard, New Mexico | 24.24 | 615.7 | 30.24 | 768.1 | 35 | 1.7 | 52 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.67 | 652.0 | ..... | ..... | 45 | 7.2 | 76 | Calm | 0 | 0 | ..... | 2k | 2s | Calm | Calm | 0 | 0 | Fair | |
| Fort Gibson, Indian Ter | 29.63 | 752.6 | 30.18 | 766.6 | 44 | 6.7 | 84 | SE | 1 | 0.4 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Smoky | |
| Fort Griffin, Texas | 28.91 | 734.3 | 30.23 | 767.8 | 40 | 4.4 | 73 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.70 | 754.4 | 29.74 | 755.4 | —11 | —23.9 | 100 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Sill, Indian Territory | 29.95 | 735.3 | 30.09 | 764.3 | 45 | 7.2 | 76 | N | 8 | 3.6 | ..... | 2cs | Sm'e | Calm | Calm | 0 | 0 | Fair | |
| Galveston, Texas | 29.98 | 761.5 | 30.02 | 762.5 | 61 | 16.1 | 82 | NE | 13 | 5.8 | ..... | 2ck;hz | Haze | S;Calm | Calm | 0 | 0 | Cloudy | |
| Grand Haven, Michigan | 29.64 | 752.8 | 30.32 | 770.1 | 37 | 2.8 | 71 | NE | 6 | 2.7 | ..... | 1c | 0 | N | ..... | 0 | 0 | Clear | |
| Indianapolis, Indiana | 29.43 | 747.5 | 30.23 | 767.8 | 45 | 7.2 | 61 | NE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianola, Texas | 29.04 | 737.6 | 30.22 | 767.6 | 41 | 5.0 | 65 | S | 1 | 0.4 | ..... | 1c | 0 | ..... | ..... | 0 | 0 | Cloudy | |
| Jacksboro, Texas | 30.02 | 762.5 | 30.04 | 763.0 | 62 | 16.7 | 88 | NE | 22 | 9.8 | ..... | ..... | 10s | ..... | E | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.16 | 765.1 | 30.19 | 766.8 | 53 | 11.7 | 93 | NE | 2 | 0.9 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Keokuk, Iowa | 29.56 | 750.8 | 30.19 | 766.8 | 44 | 6.7 | 76 | E | 8 | 3.6 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Key West, Florida | 30.00 | 762.0 | 30.03 | 762.7 | 69 | 20.6 | 75 | E | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Kittyhawk, North Carolina | 30.00 | 762.0 | 30.03 | 762.7 | 50 | 10.0 | 72 | W | 4 | 1.8 | ..... | 2k | 2s | NW | W | 0 | 0 | Fair | |
| Knoxville, Tennessee | 29.20 | 741.7 | 30.24 | 768.1 | 40 | 4.4 | 73 | Calm | 0 | 0 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Fair | |
| La Crosse, Wisconsin | 29.52 | 749.8 | 30.29 | 769.4 | 37 | 2.8 | 71 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 26.24 | 666.5 | 30.39 | 771.9 | 42 | 5.6 | 75 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.68 | 753.9 | 30.03 | 762.7 | 55 | 12.8 | 100 | NW | 5 | 2.2 | ..... | ..... | 10n | ..... | Calm | 2.62 | 66.5 | Light rain | |
| Leavenworth, Kansas | 29.30 | 744.2 | 30.15 | 765.8 | 50 | 10.0 | 65 | Calm | 0 | 0 | ..... | 5k | Sm'e | NW | Calm | Inap. | Inap. | Fair | |
| Los Angeles, California | 29.70 | 754.4 | 30.04 | 763.0 | 51 | 10.6 | 86 | N | 7 | 3.1 | ..... | 5c | 0 | SW | ..... | 0 | 0 | Fair | |
| Louisville, Kentucky | 29.63 | 752.6 | 30.20 | 767.1 | 40 | 4.4 | 70 | NE | 4 | 1.8 | ..... | Haze | Sm'e | Calm | Calm | 0 | 0 | Smoky | |
| Lynchburg, Virginia | 29.38 | 746.2 | 30.06 | 763.5 | 51 | 10.6 | 59 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.60 | 751.8 | 30.34 | 770.6 | 31 | — 0.6 | 69 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mason, Texas | 28.49 | 723.6 | 30.27 | 768.8 | 50 | 10.0 | 72 | NE | 2 | 0.9 | ..... | ..... | 10s | ..... | NE | 0.14 | 3.6 | Cloudy | |
| Memphis, Tennessee | 29.85 | 758.2 | 30.18 | 766.6 | 50 | 10.0 | 64 | Calm | 0 | 0 | ..... | Haze | Sm'e | Calm | Calm | 0 | 0 | Smoky | |
| Milwaukee, Wisconsin | 29.61 | 752.1 | 30.33 | 770.4 | 36 | 2.2 | 80 | NE | 8 | 3.6 | ..... | 0 | 5ks | ..... | NE | 0 | 0 | Fair | |
| Mobile, Alabama | 30.11 | 764.8 | 30.15 | 765.8 | 51 | 10.6 | 89 | N | 5 | 2.2 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Montgomery, Alabama | 29.96 | 761.0 | 30.21 | 767.3 | 47 | 8.3 | 81 | NE | 1 | 0.4 | ..... | Haze | Fg;sm | Calm | Calm | 0 | 0 | Hazy | |
| Morgantown, West Virginia | 29.11 | 739.4 | 30.20 | 767.1 | 41 | 5.0 | 74 | N | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mt. Washington, N. H. | 23.09 | 586.5 | 29.45 | 748.0 | 7 | —13.9 | 100 | NW | 90 | 42.9 | ..... | ..... | 10n | ..... | NW | 1.17 | 29.7 | Light snow | |
| Nashville, Tennessee | 29.67 | 753.6 | 30.22 | 767.6 | 44 | 6.7 | 92 | Calm | 0 | 0 | ..... | ..... | Haze | ..... | Calm | 0 | 0 | Hazy | |
| New Haven, Connecticut | 29.73 | 755.1 | 29.85 | 758.2 | 41 | 5.0 | 74 | NW | 12 | 5.4 | ..... | 0 | 8s | ..... | NW | 0 | 0 | Cloudy | |
| New London, Connecticut | 29.76 | 755.9 | 29.81 | 757.2 | 43 | 6.1 | 67 | NW | 13 | 5.8 | ..... | 2k | 1s | W | W | Inap | Inap. | Fair | |
| New Orleans, Louisiana | 30.04 | 763.0 | 30.10 | 764.5 | 57 | 13.9 | 81 | NE | 7 | 3.1 | ..... | 8c | Haze | Calm | Calm | 0 | 0 | Fair | |
| Newport, Rhode Island | 29.72 | 754.9 | 29.77 | 756.1 | 42 | 5.6 | 66 | W | 13 | 5.8 | ..... | 4k | 0 | W | ..... | Inap. | Inap | Fair | |
| New York, New York | 29.72 | 754.9 | 29.90 | 759.4 | 42 | 5.6 | 66 | W | 12 | 5.4 | ..... | 8k | 0 | W | ..... | 0 | 0 | Fair | |
| Norfolk, Virginia | 29.99 | 761.7 | 30.05 | 763.3 | 52 | 11.1 | 60 | SW | 1 | 0.4 | ..... | 1c | Haze | W | ..... | 0 | 0 | Clear | |
| North Platte, Nebraska | 27.18 | 690.4 | 29.77 | 756.1 | 45 | 7.2 | 76 | S | 10 | 4.5 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Smoky | |
| Olympia, Washington Ter. | 29.76 | 755.9 | 29.79 | 756.7 | 44 | 6.7 | 95 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Dense fog | |
| Omaha, Nebraska | 29.03 | 737.3 | 30.12 | 765.0 | 47 | 8.3 | 77 | SE | 4 | 1.8 | ..... | 5k | 5s | NW | Calm | 0 | 0 | Cloudy | |
| Oswego, New York | 29.72 | 754.9 | 30.05 | 763.3 | 34 | 1.1 | 61 | N | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | 0.20 | 5.1 | Clear | |
| Pembina, Dakota | 29.30 | 744.2 | 30.16 | 766.1 | 34 | 1.1 | 79 | SE | 6 | 2.7 | ..... | 2c | 5s | Calm | SE | 0 | 0 | Fair | |
| Philadelphia, Pennsylvania | 29.92 | 760.0 | 29.97 | 761.2 | 45 | 7.2 | 60 | NW | 21 | 9.4 | ..... | 5k | 0 | W | ..... | 0 | 0 | Cloudy | |
| Phœnix, Arizona | 28.92 | 734.6 | 30.74 | 780.8 | 54 | 12.2 | 80 | Calm | ..... | ..... | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Pike's Peak, Colorado | 17.56 | 453.6 | 30.07 | 763.8 | 14 | —10.0 | 46 | NE | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Pioche, Nevada | 24.16 | 613.6 | 29.93 | 760.2 | 43 | 6.1 | 59 | SW | 2 | 0.9 | ..... | 8c | 2s | Calm | Calm | 0 | 0 | Cloudy | |
| Pittsburg, Pennsylvania | 29.36 | 745.7 | 30.19 | 766.8 | 39 | 3.9 | 73 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Port Huron, Michigan | 29.55 | 750.6 | 30.24 | 768.1 | 35 | 1.7 | 80 | N | 8 | 3.6 | ..... | 8k | 2ks | N | N | Inap. | Inap. | Cloudy | |
| Portland, Maine | 29.08 | 751.3 | 29.63 | 752.6 | 38 | 3.3 | 63 | W | 11 | 4.9 | ..... | 5k | 0 | NW | ..... | Inap. | Inap. | Fair | |
| Portland, Oregon | 29.77 | 756.1 | 29.87 | 758.7 | 52 | 11.1 | 79 | N | 4 | 1.8 | ..... | 0 | 5s | ..... | S | 0 | 0 | Fair | |
| Prescott, Arizona | 24.90 | 632.4 | 30.26 | 768.6 | 40 | 4.4 | 65 | S | ..... | ..... | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Punta Rassa, Florida | 30.08 | 764.0 | 30.10 | 764.5 | 64 | 17.8 | 63 | E | 12 | 5.4 | ..... | 5c | 0 | SW. | ..... | 0 | 0 | Fair | |
| Red Bluff, California | 29.61 | 752.1 | 29 97 | 761.2 | 53 | 11.7 | 86 | NW | 2 | 0.9 | ..... | ..... | 10ks | ..... | Calm | Inap. | Inap. | Cloudy | |
| Rochester, New York | 29.46 | 748.3 | 30.10 | 764.5 | 34 | 1.1 | 79 | NW | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0.12 | 3.0 | Clear | |

## UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roseburg, Oregon | 29.26 | 743.2 | 29.82 | 757.4 | 52 | 11.1 | 83 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sacramento, California | 29.87 | 758.7 | 29.95 | 760.7 | 56 | 13.3 | 81 | SE | 5 | 2.2 | ..... | 1c | 1s | SW | SW | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.59 | 751.6 | 30.17 | 766.3 | 50 | 10.0 | 72 | NE | 6 | 2.7 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Hazy | |
| St. Marks, Florida | 30.14 | 765.5 | 30.16 | 766.1 | 49 | 9.4 | 93 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.38 | 746.2 | 30.24 | 768.1 | 37 | 2.8 | 62 | E | 2 | 0.9 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear. | |
| Salt Lake City, Utah | 25.80 | 655.3 | 30.13 | 765.3 | 43 | 6.1 | 67 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Antonio, Texas | 29.41 | 747.0 | 29.99 | 761.7 | 58 | 14.4 | 64 | N | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Light rain | |
| San Diego, California | 30.01 | 762.2 | 30.08 | 764.0 | 53 | 11.7 | 93 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandusky, Ohio | 29.68 | 753.3 | 30.28 | 769.1 | 39 | 3.9 | 82 | N | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandy Hook, New Jersey | 29.88 | 758.9 | 29.91 | 759.7 | 44 | 6.7 | 76 | W | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Francisco, California | 29.90 | 759.4 | 29.96 | 761.0 | 56 | 13.3 | 87 | SW | 1 | 0.4 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Santa Fé, New Mexico | 23.42 | 594.9 | 29.96 | 761.0 | 35 | 1.7 | 61 | E | 4 | 1.8 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 30.10 | 764.5 | 30.19 | 766.8 | 54 | 12.2 | 74 | W | 5 | 2.2 | ..... | 2ck | Fog | W | ..... | 0 | 0 | Fair | |
| Shreveport, Louisiana | 29.95 | 760.7 | 30.17 | 766.3 | 53 | 11.7 | 73 | Calm | 0 | 0 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Hazy | |
| Smithville, North Carolina | 30.13 | 765.3 | 30.16 | 766.1 | 53 | 11.7 | 67 | W | 8 | 3.6 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Fair | |
| Springfield, Massachusetts | 29.66 | 753.4 | 29.79 | 756.7 | 39 | 3.9 | 73 | W | 9 | 4.0 | ..... | 2k | 0 | W | ..... | 0 | 0 | Fair | |
| Stockton, Texas | 27.14 | 689.3 | 30.14 | 765.5 | 42 | 5.6 | 65 | SW | 2 | 0.9 | ..... | 5k | Fog | Calm | ..... | 0.79 | 20.1 | Fair | |
| Thatcher's Island, Mass | 29.65 | 753.1 | 29.70 | 754.4 | 38 | 3.3 | 63 | NW | 28 | 12.5 | ..... | 5k | 0 | NW | ..... | 0 | 0 | Fair | |
| Toledo, Ohio, | 29.55 | 750.6 | 30.25 | 768.3 | 40 | 4.4 | 65 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 52 | 11.1 | 73 | SE | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tybee Island, Georgia | 30.16 | 766.1 | 30.19 | 766.8 | 51 | 10.6 | 93 | SW | 4 | 1.8 | ..... | 5c | Sm'e | Calm | Calm | 0 | 0 | Fair | |
| Umatilla, Oregon | 29.65 | 753.1 | ..... | ..... | 45 | 7.2 | 84 | Calm | 0 | 0 | ..... | ..... | 8s | ..... | Calm | 0 | 0 | Cloudy | |
| Vicksburg, Mississippi | 29.93 | 760.2 | 30.19 | 766.8 | 54 | 12.2 | 74 | E | 6 | 2.7 | ..... | 2c | Haze | Calm | Calm | 0 | 0 | Fair | |
| Virginia City, Montana | 24.39 | 619.5 | 29.87 | 758.7 | 39 | 3.9 | 46 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Visalia, California | 29.64 | 752.8 | 30.02 | 762.5 | 60 | 10.0 | 93 | S | 2 | 0.9 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Washington, D. C | 29.96 | 761.0 | 30.08 | 764.0 | 49 | 9.4 | 64 | NW | 12 | 5.4 | ..... | 5k | 0 | NW | ..... | 0 | 0 | Fair | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 44 | 6.7 | 52 | NW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.06 | 763.5 | 30.14 | 765.5 | 50 | 10.0 | 64 | W | 8 | 3.6 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| Winnemucca, Nevada | 25.87 | 657.0 | 30.03 | 762.7 | 43 | 6.1 | 51 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Wood's Holl, Mass | 29.71 | 754.6 | 29.76 | 755.9 | 44 | 6.7 | 67 | NW | 18 | 8.0 | ..... | 5ck | Haze | NW | ..... | Inap. | Inap. | Fair | |
| Yankton, Dakota | 28.85 | 732.8 | 30.18 | 766.6 | 37 | 2.8 | 76 | NE | 2 | 0.9 | ..... | 5cs | 2s | W | W | 0 | 0 | Cloudy | |
| Yuma, Arizona | 29.82 | 757.4 | 29.98 | 761.5 | 58 | 14.4 | 62 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A | 30.36 | 771.1 | 30.41 | 772.4 | 1.5 | —16.9 | 86 | S | 3 | 1.3 | ..... | 3cs | 6s | SE | ..... | 0.10 | 2.5 | Cloudy | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I | 29.96 | 761.0 | 29.98 | 761.5 | 71 | 21.7 | 79 | SE | 6.0 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | 30.03 | 762.7 | 30.04 | 763.0 | 78 | 25.6 | 90 | Calm | 0 | 0 | ..... | 5c | 0 | SE | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I | 29.85 | 758.2 | 29.93 | 760.2 | 82 | 27.8 | ..... | E | 16 | 7.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | F. M. Everett. |
| Paramaribo, D. Guiana, S. A | ..... | ..... | 30.01 | 762.2 | 82 | 27.8 | 83 | NE | ..... | ..... | 3 | 3c | 5k | E | ..... | 0 | 0 | Fair | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | 30.07 | 763.7 | 30.08 | 763.9 | 85.5 | 29.5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.468 | 11.75 | Raining | Dr. H. Groot. |
| Medellin, Colombia, S. A | 25.21 | 640.3 | ..... | ..... | 68.5 | 20.3 | 88 | Calm | ..... | ..... | 0 | 2cs | 2s | ..... | ..... | Inap. | Inap. | ..... | Thomas Herran. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,883 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,560 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.6 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 760 ft., or 533.4 m.; Deadwood, (?); Denver, 5,192 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.6 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.0 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,560 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m., Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.8 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,822 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.6 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.86 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.16 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.56 in.; Salt Lake City, 4.38 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.86 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 1—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NavyYard, Mare Island, Cal. | 29.94 | 760.5 | 56 | 13.3 | 56 | 13 3 | 81 | ESE | 0.5 | 0.2 | .... | ..... | 10k | ..... | S | 0 | 0 | ..... | ..... | Overcast..... | |
| Navy Yard, Pensacola, Fla. | 30.29 | 769.4 | 64 | 17.8 | 53 | 11.7 | 100 | WNW | 2 | 0.9 | .... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| NavyYard, Portsmouth, N.H | 29.77 | 756.1 | 72 | 22.2 | 36 | 2.2 | 80 | WNW | 11 | 4.9 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan | 29.91* | 759.7* | 60.5 | 15.8 | 51.8 | 11.0 | 93 | Calm | ..... | ..... | 0 | ..... | 10n | ..... | W | 0.23 | 5.8 | ..... | ..... | Raining..... | |
| Adams. Panama | 29.95 | 760.7 | 83 | 28.3 | 83 | 28.3 | 83 | NNW | .... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Alliance, Piraeus, Greece | 29.80‡ | 756.9‡ | ..... | ..... | 58 | 14.4 | 76 | WNW | .... | ..... | 3–5 | ..... | 4 | ..... | WNW | ..... | ..... | ..... | ..... | Clear ..... | |
| Ashuelot. Shanghai, China | 30.32* | 770.1* | 63 | 17.2 | 51 | 10.6 | 93 | ESE | ..... | ..... | 1 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Hazy..... | |
| Canonicus, New Orleans, La | 30.06 | 763.5 | 46 | 7.8 | 56 | 13.3 | 87 | NE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | Pleasant..... | |
| Colorado, New York, N. Y. | 29.86‡ | 758.4‡ | ..... | ..... | 45 | 7.2 | 53 | W | 24 | 10.7 | ..... | ..... | 5 | ..... | NW | 0 | 0 | ..... | ..... | Hazy..... | |
| Constitution, N. 49° 48′ W. 14° 51′ | 30.40‡ | 772.1‡ | ..... | ..... | 54 | 12.2 | 80 | SSW | ..... | ..... | 4 | ..... | 7 | ..... | S | ..... | ..... | Smooth | SSW | Drizzling..... | |
| Despatch, Sulina, Bulgaria | 29.53 | 750.0 | 77 | 25.0 | 35 | 1.7 | 90 | NNW | ..... | ..... | 4 | ..... | 10 | ..... | NNW | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Enterprise, New Orleans, La | 30.10‡ | 764.5‡ | ..... | ..... | 59 | 15.0 | 88 | NNE | ..... | .... | 2 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Fair ..... | |
| Franklin, Norfolk, Va | 30.04‡ | 763.0‡ | ..... | ..... | 51 | 10.6 | 65 | WSW | 3.8 | 1.7 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Gettysburg Valetta, Malta | 29.96‡ | 761.0‡ | ..... | ..... | 60 | 10.0 | 100 | W | ..... | ..... | 1 | ..... | 10 | ..... | WNW | Blank | Blank | ..... | ..... | Cloudy ..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.13 | 765.3 | 71 | 21.7 | 71 | 21.7 | 62 | NNE | ..... | ..... | 4 | .... .... | 2 | ..... | NE | ..... | ..... | ..... | ..... | Clear..... | |
| Marion, Smyrna, Turkey | 29.77 | 756.1 | 56 | 13.3 | 53 | 11.7 | 61 | Calm | ..... | ..... | 0 | .. ..... | 10 | ..... | N | Light | Light | Smooth | W | Cloudy..... | |
| Michigan, Erie, Pa | 29.70 | 754.4 | 76 | 24.4 | 37 | 2.8 | 71 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Monongahela. Hong-Kong, China | 30.25* | 768.3* | 65 | 18.3 | 65 | 18 3 | 94 | NW | ..... | ..... | 0–1 | ..... | 10 | ..... | ..... | Light | Light | ..... | ..... | Misty..... | |
| New Hampshire, Port Royal, S. C | 30.38 | 771.6 | 60 | 15.6 | 58 | 14.4 | 82 | WSW | 8 | 3.6 | ..... | ..... | 2 | ..... | WSW | 0 | 0 | ..... | ..... | Fair ..... | |
| Omaha, N. 9° 00′, W. 41° 09′ | 30.10* | 764.5* | 80 | 26.7 | 80 | 26.7 | 78 | ENE | 5 | 2.2 | ..... | ..... .. | 4 | ..... | E | 0 | 0 | Mod'ate | NE | ..... ..... | |
| Onward, Callao, Peru | 29.99† | 761.7† | ..... | ..... | 73 | 22.8 | 90 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, Vera Cruz, Mexico | 29.87‡ | 758.7‡ | ..... | ..... | 71 | 21.7 | 95 | NNW | ..... | ..... | 8 | ..... | 5 | ..... | NNW | ..... | ..... | Rough | NE | Fair..... | |
| Palos, Shanghai, China | 30.35* | 770.9* | 62 | 16.7 | 51 | 10.6 | 86 | E | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | ..... | ..... | Pleasant..... | |
| Pensacola, Honolulu, H. I | 30.14 | 765.5 | 70 | 21.1 | 67 | 19.4 | 100 | NE | 2 | 0.9 | ..... | ..... | 1 | ..... | NE | 0 | 0 | ..... | ..... | Clear..... | |
| Plymouth. Norfolk, Va | 30.06‡ | 763.5‡ | ..... | ..... | 50 | 10.0 | 72 | WSW | ..... | .... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | |
| Powhatan, N. 31° 35′, W. 80° 45′ | 30.21‡ | 767.3‡ | ..... | ..... | 60 | 15.6 | 100 | Calm | 0 | 0 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | Smooth | ..... | Misty..... | |
| Ranger. Amoy, China | 30.40* | 772.1* | ..... | ..... | 58 | 14.4 | 82 | E | ..... | ..... | 4 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Squally..... | |
| Rio Bravo, Brownsville, Texas | ..... | ..... | ..... | ..... | 59 | 15.0 | 94 | WNW | ..... | ..... | 2 | ..... | 10 | ..... | NW | ..... | ..... | ..... | ..... | Heavy rain. | |
| Santee. Annapolis, Md | 30.10* | 764.5* | 61 | 16.1 | 49 | 9.4 | 64 | NW | ..... | ..... | 3 | ..... | 2 | ..... | N&W | 0.05 | 1.3 | ..... | ..... | Clear..... | |
| Saratoga, Washington, D. C | 29.95* | 761.5* | .. .... | ..... | 53 | 11.7 | 93 | NW | ..... | ..... | 3 | ..... | 8ck | ..... | ..... | 0 | 0 | ..... | ..... | ..... | |
| St. Louis, League Island, Pa | 29.92 | 760.0 | 54 | 12.2 | 47 | 8.3 | 92 | WNW | 14 | 6.3 | ..... | ..... | 2 | ..... | NW | 0 | 0 | ..... | ..... | Fair..... | |
| Supply, N. 50° 12′ W. 3° 48″ | 30.55 | 776.0 | 59 | 15.0 | 52 | 11.1 | 79 | ENE | ..... | ..... | 2 | ..... | 10 | ..... | NE | ..... | ..... | Smooth | NE | Cloudy..... | |
| Swatara, Cartagena, New Grenada | 29.95* | 760.7* | ..... | ..... | 84 | 28.9 | 83 | NNE | ..... | ..... | 1 | ..... | 2 | ..... | N&E | ..... | ..... | ..... | ..... | D. clouds..... | |
| Tennessee, N. 6° 5′ 48″, E. 95° 19′ | 29.97* | 761.2* | 86 | 30.0 | 85 | 29.4 | 79 | NNE | 6 | 2.7 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | Smooth | ..... | D. clouds..... | |
| Trenton, Piraeus, Greece | 29.83‡ | 757.7‡ | ..... | ..... | 62 | 16.7 | 61 | NW | ..... | ..... | 3–5 | ..... | 5 | ..... | NW | 0 | 0 | Mod'ate | NW | Hazy..... | |
| Tuscarora, N. 24° 15, 31″ W. 110° 20′ 47″ | 30.00 | 762 0 | 69 | 20.6 | 69 | 20.6 | 31 | NW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |
| Vandalia, Naples, Italy | 29.89‡ | 759.2‡ | ..... | ..... | 58 | 14.4 | 64 | SW | ..... | ..... | 1 | ..... | 2 | ..... | SW | ..... | ..... | ..... | ..... | Clear..... | |
| Wabash, Boston, Mass | 29.75‡ | 755.6‡ | ..... | ..... | 39 | 3.9 | 64 | NW | 11 | 4.9 | ..... | ..... | 5 | ..... | Calm | 0 | 0 | ..... | ..... | Fair ..... | |
| Wyoming, N. 41° 13′ W. 66° 28′ | 29.88* | 758.9* | ..... | ..... | 44 | 6.7 | 76 | WNW | ..... | ..... | 5–6 | ..... | 8 | ..... | ..... | ..... | ..... | Mod'ate | N&W | D. clouds..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | Character. | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio, Hong-Kong, China | | | | | 65 | 18.3 | | E | | | 1 | | | | | | | Blue sky | |
| S. S. Colima, N. 7° 10', W. 80° 52' | | | 29.84† | 757.9† | 83 | 28.3 | 57 | ENE | | | 2 | | 3 | | ENE | Small | N | Misty | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. †Aneroid.

**WHITE STAR LINE MARINE SERIES.**

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, New York, N. Y. | | | 29.80† | 759.2† | 42 | 5.6 | ?? | NW | | | 1 | | 5ck | | WNW | | | Fair | Capt. W. H. Thompson |
| S. S. Celtic, N. 42° 29,' W. 57° 20' | | | 29.91† | 759.7† | 38 | 3.3 | ?? | NW | | | 5 | | | WNW | | Strong sea. | SW to NW | Squally | Capt. B. Gleadell. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Aneroid.

**OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.**

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic | | | | | | | | | | | | | | | | | | | Capt. John Metcalf. |
| S. S. Gaelic, Yokohama, Japan | | | 29.87† | 758.7† | | | | Var. | | | 2 | | 8 | | Var. | | | D. clouds | Capt. W. H. Kidley |
| S. S. Oceanic, N. 37° 48', W. 127° 20' | | | 29.56 | 750.8 | 56 | 13.3 | 100 | WSW | | | 2 | | 6 | | S | Confused. | SW | D. clouds | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid

**NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.**

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | Character | Direction From— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, N. 45° 59′ 42″, W. 38° 21′ 15″ | | | 30.26† | 768.6† | 49 | 9.4 | 100 | SSE | | | 3 | | 5 | | ESE | Light | ESE | Cloudy | Captain Sargent. |
| S. S. Ohio, N. 43° 01′, W. 50° 02′ | | | 29.32 | 744.7 | 43 | 6.1 | 92 | W | | | 6 | | 10 | | | Very rough | Con-fused | Foggy | Captain Morrison. |
| S. S. Pennsylvania | | | | | | | | | | | | | | | | | | | Captain Harris. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. †Aneroid; unreliable, corrected for elevation, instrumental error not known.

## RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland, N. 49° 46′, W. 8° 43′ | | | 30.47* | 773.9* | | | | NE | 7 | 3.1 | | | 8 | | NE | Smooth | | Cloudy | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |

*Aneroid; regulated to standard at Antwerp.

## ALLAN LINE MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Scandinavian | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

## MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller Crisfield, Md. | | | 29.94 | 760.5 | 57 | 13.9 | 69 | WNW | 5 | 2.2 | | | 8ks | | W | | | Cloudy | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.92 | 760.0 | —26 | —32.2 | 90* | Calm | 0 | 0 | | 0 | 0 | | | | | Clear | O. T. Sherman. |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Determined by use of hair hygrometer.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 21, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

## ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.14 | 765.6 | 62.1 | 16.7 | ..... | NE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair..... | Dr. Ollive. |
| Nemours | ..... | ..... | 30.15 | 765.8 | 61.7 | 16.5 | 58 | NNW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair.. | Michel. |
| Algiers | ..... | ..... | 30.10 | 764.5 | 63.3 | 17.4 | 76 | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair.. | Towillere. |
| La Calle | ..... | ..... | 30.12 | 765.1 | 58.3 | 14.6 | 78 | NW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 0.04 | 1. | Very cloudy | Boulangeot. |
| Tunis | ..... | ..... | 29.96 | 761.0 | 63.1 | 17.3 | 57 | NW | ..... | ..... | 5 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy..... | Jacques. |
| Sfax | ..... | ..... | 30.32 | 767.5 | 68.0 | 20.0 | ..... | WNW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair... | Gau. |
| Saida | ..... | ..... | 30.19 | 766.7 | 59.5 | 15.3 | 85 | NNW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Fair..... | Herbin. |
| Tebessa | ..... | ..... | 30.17 | 766.4 | ..... | ..... | ..... | Calm | ..... | ..... | 0 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy..... | Bourgeois. |
| Geriville | ..... | ..... | 30.20 | 767.1 | 48.9 | 9.4 | 86 | N | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy..... | Lemaillot. |
| Laghouat | ..... | ..... | 30.22 | 767.6 | 59.0 | 15.0 | 48 | ENE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair..... | Guyot. |
| Biskra | ..... | ..... | 30.21 | 767.3 | 68.9 | 20.5 | 37 | E | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair..... | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the Amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,380? m.; or 4,461.7? ft.

## AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.51 | 750.4 | 30.10 | 764.5 | 50.5 | 10.3 | 29 | NE | ..... | ..... | 5 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.28 | 743.8 | 30.08 | 763.9 | 39.2 | 4.0 | 55 | W | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbiski. |
| Eperies | 29.10 | 739.0 | 30.00 | 762.1 | 38.5 | 3.6 | 64 | N | ..... | ..... | 1 | ..... | 8k;s | ..... | S | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.81 | 731.8 | 30.07 | 763.7 | 51.3 | 10.7 | 39 | NW | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0.008 | 0.20 | ..... | Andreas Rospini. |
| Hermannstadt | 28.41 | 721.5 | 29.88 | 758.9 | 34.2 | 1.2 | 75 | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.041 | 1.05 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.81 | 731.7 | 30.20 | 767.1 | 37.0 | 3.3 | 95 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.055 | 1.4 | ..... | Prof. C. Wagner |
| Lemberg | 28.89 | 733.9 | 29.91 | 759.8 | 36.7 | 2.6 | 55 | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Dr. T. Stanecki. |
| Pola | 30.05 | 763.2 | 30.16 | 766.1 | 49.3 | 9.6 | 60 | WNW | ..... | ..... | 2 | ..... | 1k | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Szegedin | 29.73 | 755.2 | 30.02 | 762.5 | 42.4 | 5.8 | 58 | N | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Johann Tamas, S. J. |
| Trieste | 30.09 | 764.3 | 30.19 | 766.9 | 49.6 | 9.8 | 59 | W | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Karl Stancel. |
| Vienna | 29.39 | 746.5 | 30.12 | 765.1 | 45.1 | 7.3 | 65 | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.020 | 0.5 | Almost clear. | P. Busin. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,253.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

## BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.73 | 729.7 | 30.27 | 768.9 | 45.0 | 7.2 | 79 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. M. Passau. |
| Brussels | 30.04 | 763.1 | 30.25 | 768.3 | 46.6 | 8.1 | 83 | NW | ..... | ..... | 1 | ..... | 10 | ..... | W | 0.016 | 0.4 | Foggy ..... | Royal Observatory. |
| Furnes | 30.25 | 768.3 | 30.27 | 768.9 | 49.3 | 9.6 | 75 | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Foggy ..... | M. E. de Cae. |
| Maeseyck | 30.10 | 764.6 | 30.23 | 767.8 | 49.6 | 9.8 | 86 | WSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.043 | 1.1 | Foggy ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4? feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

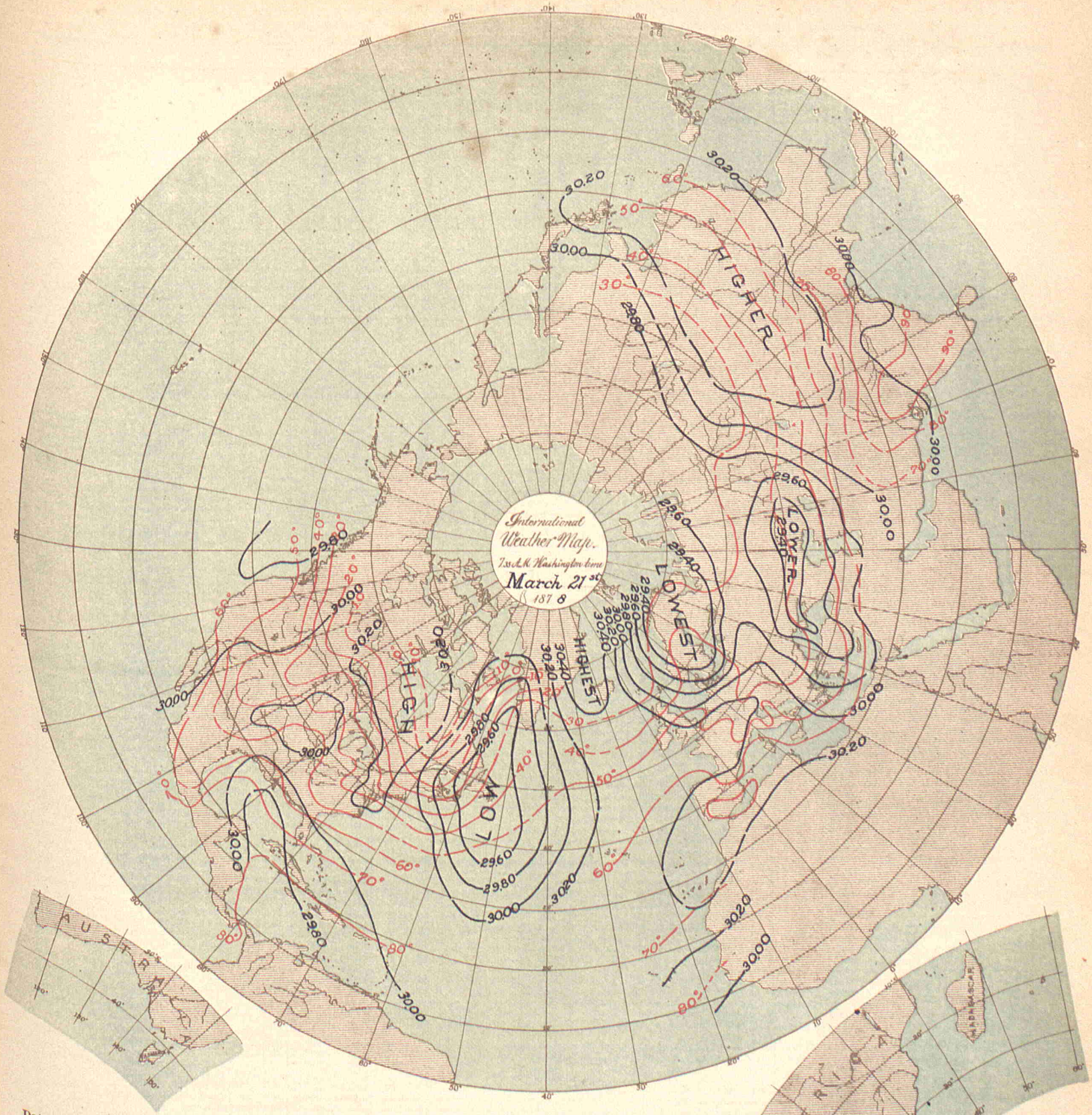
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E. Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.98 | 761.5 | 30.08 | 764.0 | 43.0 | 6.1 | ..... | WNW | 32 | 14.3 | ..... | ..... | 9 | ..... | ..... | 0.130 | 3.30 | Overcast..... | W. Boswell. |
| Ardrossan | 30.16 | 766.1 | 30.18 | 766.6 | 48 | 8.9 | ..... | WNW | ..... | ..... | 6 | ..... | 7 | ..... | ..... | ..... | ..... | Showery..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.30 | 769.6 | 51.7 | 10.9 | ..... | WNW | 11 | 4.9 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | S. Call, for Dr. Robinson. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.25 | 768.3 | 48.7 | 9.3 | ..... | W | 28 | 12.5 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 30.33 | 770.4 | 55.0 | 12.8 | ..... | WNW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | J. Dreyer. |
| Bradford, Yorkshire | 29.74 | 755.4 | 30.14 | 765.5 | 54.5 | 12.5 | ..... | S | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | D. clouds..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.97 | 761.2 | 30.00 | 762.0 | 82.0 | 27.8 | ..... | E | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 30.22 | 767.6 | 54.0 | 12.2 | ..... | NNW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | H. Todd. [H. C. |
| Cardington | ..... | ..... | 30.26 | 768.6 | 54.0 | 12.2 | ..... | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John McLaren. |
| Chatham, School M. E. | 30.13 | 765.3 | 30.26 | 768.6 | 53.2 | 11.8 | ..... | W | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.82 | 732.0 | 30.32 | 770.1 | 45.0 | 7.2 | ..... | NW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | Fine..... | Alexander Watt. |
| Donaghadee | 30.23 | 767.8 | 30.26 | 768.6 | 48 | 8.9 | ..... | NNW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 30.23 | 767.8 | 30.26 | 768.6 | 53 | 11.7 | ..... | W | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | Gloomy..... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 30.24 | 768.1 | 51.9 | 11.1 | ..... | NW | 6.6 | 0.3 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Thomas Mackereth. |
| Falmouth, Observatory | 30.13 | 765.3 | 30.36 | 771.1 | 51.7 | 10.9 | ..... | SSE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | The Staff. |
| Fort Napier, (Natal) | 27.60 | 701.0 | 29.79 | 756.7 | 89.2 | 31.8 | ..... | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.67 | 753.6 | 29.90 | 759.4 | 86 | 30.0 | ..... | W | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's College | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.08 | 764.0 | 30.14 | 765.5 | 62.8 | 17.1 | ..... | E | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Corpl. C. Aitken, A. H. C. |
| Glasgow, Observatory | 29.94 | 760.5 | 30.14 | 765.5 | 49.0 | 9.4 | ..... | WNW | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | Blue sky..... | D. G. Maclean. |
| Great Yarmouth | 30.19 | 766.8 | 30.20 | 767.1 | 52 | 11.1 | ..... | W | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Misty..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 30.08 | 764.0 | 30.26 | 768.6 | 52.2 | 11.2 | ..... | NW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Nearly overcast. | The Staff, for G. B. Airy. |
| Guernsey | 30.10 | 764.5 | 30.32 | 770.1 | 50 | 10.0 | ..... | NNW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Dr. S. E. Hoskins, F. R. S. |
| Helston | ..... | ..... | 30.38 | 771.6 | 54 | 12.2 | ..... | NE | ..... | ..... | 2 | ..... | 4c | ..... | ..... | 0 | 0 | Fine..... | M. P. Moyle. |
| Holyhead | 30.22 | 767.6 | 30.27 | 768.8 | 53 | 11.7 | ..... | W | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | John Tilston. |
| Jersey | 30.06 | 763.5 | 30.36 | 771.1 | 51.0 | 10.6 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 30.27 | 768.8 | 54.0 | 12.2 | ..... | WNW | 14 | 6.3 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Threatening | The Staff. |
| Kingstown | 30.28 | 769.1 | 30.31 | 769.9 | 51 | 10.6 | ..... | WNW | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 30.767 | 781.31 | 52.1 | 11.2 | ..... | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Wm. J. Harrison, F. G. S. |
| Malta, (Mediterranean) | 30.01 | 762.2 | 30.08 | 764.0 | 59.8 | 15.4 | ..... | N | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | Sgt. Fred. Travis, A. H. |
| Nairn | 30.07 | 763.8 | 30.17 | 766.3 | 39 | 3.9 | ..... | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 29.96 | 761.0 | 71.2 | 21.8 | ..... | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | C. S. Duncombe. |
| Nottingham, Observatory | 30.11 | 764.8 | 30.30 | 769.6 | 55.7 | 13.2 | ..... | WNW | ..... | ..... | 4 | ..... | 2k | ..... | WNW | 0 | 0 | Blue sky..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.73 | 755.1 | 30.26 | 768.6 | 49.6 | 9.8 | ..... | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.27 | 768.8 | 54 | 12.2 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Mr. Lucas. |
| Plymouth | 30.27 | 768.8 | 30.35 | 770.9 | 54.2 | 12.3 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Merrifield. |
| Roche's Point | 30.32 | 770.1 | 30.37 | 771.4 | 51 | 10.6 | ..... | SW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | Cloudy..... | W. Kennedy. |
| Saint Ann's Head | 30.19 | 766.8 | 30.35 | 770.9 | 52 | 11.1 | ..... | Calm | ..... | ..... | 0 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 30.07 | 763.8 | 35.6 | 2.0 | ..... | NW | 45 | 20.1 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | Showery..... | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.76 | 755.9 | 49.4 | 9.7 | ..... | NNE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Sergt. W. H. Lyne. |
| Sheffield | 29.92 | 760.0 | 30.20 | 767.1 | 54.9 | 12.7 | ..... | SW | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0.03 | 0.8 | Blue sky..... | W. F. Cooper. |
| Silloth Rectory | 30.13 | 765.3 | 30.16 | 766.1 | 51.6 | 10.9 | 68 | W | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | D. clouds..... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.82 | 757.4 | 30.22 | 767.6 | 50.2 | 10.1 | ..... | W | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | Squally..... | Rev. S. J. Perry. |
| Stonorway, Lews C., (Hebr.) | ..... | ..... | 30.17 | 766.3 | 40 | 4.4 | ..... | NNW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Sutherland. |
| Stratfield Turgiss | 30.09 | 764.3 | 30.32 | 770.1 | 53.3 | 11.8 | ..... | W | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. C. H. Griffith, F. M. |
| Thurso | ..... | ..... | 30.07 | 763.8 | 38 | 3.3 | ..... | NW | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 30.36 | 771.1 | 59 | 15.0 | ..... | N | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 30.39 | 771.9 | 53.6 | 12.0 | ..... | NW | 9 | 4.0 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | Misty..... | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.22 | 767.6 | 67.5 | 19.7 | 82 | S | ..... | ..... | 3 | ..... | 8k | ..... | ..... | 0 | 0 | ..... | Francis Abbott, F. R. A. S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.90 | 759.4 | 30.08 | 764.2 | 80.8 | 27.1 | 74 | E | 16.5 | 7.4 | ..... | 5 | 2 | ..... | E | 0.03 | 0.8 | Fine; squally | C. Meldrum. |
| Melbourne, Observatory | 30.24 | 768.1 | 30.33 | 770.4 | 55.1 | 12.8 | 85 | SE | 6 | 2.7 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | Fine..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1, 400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m.

| Marine Series. Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Algeria, N. 61° 5′, W. 18° 43′ | ..... | ..... | 30.27 | 768.8 | 54.0 | 12.2 | ..... | SE | ..... | ..... | 3 | ..... | 7 | E | ..... | 5* | SE | D. clouds.. | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. C. Prehn. [R. |
| S. S. Peruvian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.17 | 664.7 | ..... | ..... | 72.0 | 22.2 | 89 | NE | ..... | ..... | 2 | pc | 1ks | ..... | ..... | Inap | Inap. | ..... | Federico Maison. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.71 | 754.7 | 29.76 | 755.9 | 48.2 | 9.0 | 74 | WNW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... |
| Fanöe | 29.84 | 757.8 | 29.85 | 758.3 | 43.2 | 6.2 | 93 | W | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining. |
| Godthaab, (Greenland) | 29.73 | 755.1 | 29.77 | 756.2 | 32.9 | 0.5 | 89 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | 30.45 | 773.5 | 30.50 | 774.6 | 26.8 | — 2.9 | 96 | SE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Farõe) | 30.08 | 764.0 | 30.11 | 764.9 | 28.9 | — 1.7 | 72 | NW | ..... | ..... | 6 | ..... | 7 | ..... | ..... | ..... | ..... | Snowing. |
| Vestervig | 29.51 | 749.5 | 29.68 | 753.8 | 42.8 | 6.0 | 91 | WSW | ..... | ..... | 7 | ..... | 8 | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.89 | 759.3 | 30.45 | 773.3 | 46.4 | 8 | 58 | NE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Collignon, Director. |
| Amiens, Normal School | 30.17 | 766.4 | 30.29 | 769.3 | 50 | 10.0 | 79 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Bonvarne, Director. |
| Avignon, Normal School | 30.04 | 763.0 | 30.12 | 765.0 | 64.8 | 18.2 | 36 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Very clear | Mr. Giraud, Director |
| Bar-sur-Seine | 29.72 | 754.9 | 30.28 | 769.2 | 52.0 | 11.1 | 62 | E | ..... | ..... | 1 | ..... | 8kn | ..... | N | 0 | 0 | Very cloudy | C. Saillard. |
| Beaumette Obs'y (Angers) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Albert Cheux. |
| Beauvais | ..... | ..... | ..... | ..... | 52.3 | 11.3 | 62 | NW | ..... | ..... | 1 | ..... | 10 | ..... | NW | 0 | 0 | Covered | Normal School. |
| Besançon | 29.38 | 746.3 | 30.29 | 769.4 | 51.1 | 10.6 | 74 | ENE | ..... | ..... | 3 | ..... | 5 | ..... | NE | 0.031 | 0.8 | Cloudy | Normal School. |
| Bourg-en-Bresse | 29.37 | 745.9 | 30.29 | 769.4 | 53.2 | 11.8 | 65 | N | ..... | ..... | 4 | ..... | 5kn | ..... | N | 0 | 0 | Cloudy | Normal School. |
| Bourges, Normal School | 29.67 | 753.5 | 30.23 | 767.9 | 50.4 | 10.2 | 84 | NE | ..... | ..... | 2 | ..... | 2 | ..... | S | 0 | 0 | Slightly cov. | A. Wagner, Director. |
| Brest, Naval Observatory | 30.03 | 762.7 | 30.25 | 768.3 | 56.7 | 13.7 | 68 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | Calm | 0 | 0 | ..... | The Staff. |
| Carcassonne, Normal School | 29.78 | 756.3 | 30.23 | 767.8 | 60.4 | 15.8 | 52 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Vateau, Director. |
| Caen | 30.28 | 769.2 | 30.36 | 771.2 | 53.1 | 11.7 | 71 | W | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | Normal School. |
| Chartres, Normal School | 29.68 | 753.9 | 30.25 | 768.4 | 54.9 | 12.7 | 68 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.97 | 761.1 | 30.29 | 769.4 | 49.5 | 9.7 | 81 | N | ..... | ..... | 2 | ..... | 10ck | ..... | N | 0 | 0 | Covered | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.87 | 733.2 | 30.24 | 768.0 | 51.8 | 11.0 | 50 | N | ..... | ..... | 2 | ..... | 10 | ..... | N | 0 | 0 | Covered | Allnard, Director. |
| Commercy, Normal School | 29.40 | 746.7 | 30.30 | 769.5 | 47.5 | 8.6 | 81 | N | ..... | ..... | 2 | ..... | 10 | ..... | N | 0 | 0 | Covered | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.98 | 736.0 | 30.12 | 765.0 | 69.3 | 20.7 | 19 | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | M. Kina. |
| Grenoble | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| La Roche-sur-Yon, N. School | 30.07 | 763.8 | 30.29 | 769.4 | 57.2 | 14.0 | 50 | NW | ..... | ..... | 2 | ..... | 5 | ..... | N | 0 | 0 | Cloudy | Mouillot, Director. |
| Le Mans, Normal School | 30.00 | 761.9 | 30.31 | 769.8 | 52.2 | 11.2 | 52 | E | ..... | ..... | 2 | ..... | 8 | ..... | NE | 0 | 0 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.28 | 743.8 | 30.23 | 767.7 | 51.8 | 11 | 69 | N | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Voudes, Director. |
| Lorient, Naval Observatory | 30.24 | 768.0 | 30.34 | 770.5 | 54.7 | 12.6 | 55 | NE | ..... | ..... | 2 | ..... | 5 | ..... | NE | 0 | 0 | ⅗ Covered | T. Carré, Director. |
| Mâcon, Normal School | 29.56 | 750.8 | 30.26 | 768.6 | 51.8 | 11 | 89 | E | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | M. Marchal, Director. |
| Metz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. A. Schuster, Dir. |
| Mirecourt | 29.21 | 742.0 | 30.28 | 769.2 | 48.9 | 9.4 | 63 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | SSE | 0 | 0 | Covered | Normal School. |
| Nismes, Normal School | 29.85 | 759.3 | 30.10 | 764.5 | 64.0 | 17.8 | 40 | N | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Boyer, Director. |
| Orleans, Normal School | 29.90 | 759.4 | 30.29 | 769.3 | 52.2 | 11.2 | 50 | N | ..... | ..... | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Bernard, Director. |
| Paris, Observatory | 30.06 | 763.4 | 30.30 | 769.5 | 54.5 | 12.5 | 38 | NW | ..... | ..... | 1 | ..... | 9 | ..... | NNW | 0 | 0 | Almost cov'd | National Observatory. |
| Privas | 29.12 | 739.6 | 30.20 | 767.1 | 51.8 | 11 | 52 | N | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Normal School - |
| Puy de Dome (Summit) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Allnard, Director. |
| Rochefort, Naval Obs'y | 30.24 | 768.0 | 30.27 | 768.8 | 58.6 | 14.8 | 74 | ENE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Lt. Decante, Director. |
| Rouen, Normal School | 30.23 | 767.8 | 30.32 | 770.0 | 53.1 | 11.7 | 64 | N | ..... | ..... | 1 | ..... | 10 | ..... | NE | 0 | 0 | Covered | F. Lucard, Director. |
| Saint Malo (Port) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. H. Hercouet. |
| Tarbes, Normal School | 29.24 | 742.6 | 30.32 | 770.2 | 57.2 | 14 | 47 | SW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | T. Hugues, Director. |
| Villefranche | 29.47 | 748.5 | 30.19 | 766.7 | 55.9 | 13.3 | 59 | NNE | ..... | ..... | 2 | ..... | 2 | ..... | N | 0 | 0 | Slightly cl'dy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.82 | 757.3 | 29.84 | 758.0 | 78.8 | 26 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchesi. |
| Lyons | ..... | ..... | 30.26 | 768.6 | 53.6 | 12.0 | ..... | ..... | ..... | ..... | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | M. Jeys. |
| Marseilles, Observatory | ..... | ..... | 30.05 | 763.3 | 64.9 | 18.3 | 54 | NW | ..... | ..... | 0-1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |
| Mont-Louis | 24.94 | 633.4 | 30.25 | 768.4 | 47.5 | 8.6 | 25 | SE | 14.9 | 6.66 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Mr. Falguère. |
| Nice | 29.98 | 761.5 | 30.00 | 763.5 | 59.7 | 15.4 | 68 | W | ..... | ..... | 2 | ..... | 1 | ..... | W | 0 | 0 | Clear | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 30.01 | 762.3 | 30.29 | 769.3 | 53.1 | 11.7 | 39 | W | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Marié Davy, Director. |
| Perpignan | ..... | ..... | 30.13 | 765.4 | 66.0 | 18.9 | 33 | NE | 7.4 | 3.33 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.56 | 573.1 | ..... | ..... | 49.3 | 9.6 | ..... | ENE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 30.13 | 765.8 | 30.30 | 769.5 | 54.0 | 12.2 | 41 | NW | ..... | ..... | 1 | ..... | 10 | ..... | NW | 0 | 0 | Covered | E. Renou. |
| Toulouse, Observatory | 29.49 | 749.1 | 30.22 | 767.0 | 54.7 | 12.6 | 52 | NNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Tours | 30.16 | 766.1 | 30.36 | 771.1 | 55.4 | 13.0 | 42 | NE | ..... | ..... | 2 | ..... | 10 | ..... | NNE | 0 | 0 | ..... | C. Marquet. |
| Versailles, (near Paris) | ..... | ..... | 30.29 | 769.4 | 55.4 | 13.0 | 36 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Cloudy | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.40 | 772.1 | 30.43 | 772.8 | 45.0 | 7.2 | 90 | E | 3.8 | 1.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear. | Mare Dechevrens, S. J |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.73 | 755.2 | 30.15 | 765.8 | 49.3 | 9.6 | 49 | W | 0.7 | 0.3 | ..... | ..... | 10 | ..... | ..... | 0.016 | 0.4 | ..... | Prof. Giovanni Codig. |
| Padua | 30.04 | 762.9 | 30.15 | 765.7 | 51.4 | 10.8 | 51 | SE | 8.7 | 3.9 | ..... | ..... | 5 | SW | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.96 | 761.0 | 30.16 | 766.0 | 53.1 | 11.7 | 46 | SSE | 4.3 | 1.9 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.80 | 731.6 | 30.14 | 765.5 | 52.2 | 11.2 | 50 | SSW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.63 | 752.6 | 30.16 | 766.0 | 55.9 | 13.3 | ..... | E | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.20 | 741.6 | 30.11 | 764.9 | 58.3 | 14.6 | 44 | SSE | 4.3 | 1.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 28.18 | 715.7 | 30.11 | 764.8 | 55.9 | 13.3 | 25 | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.89 | 759.1 | 30.11 | 764.8 | 59.7 | 15.4 | 50 | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.94 | 760.4 | 30.11 | 764.8 | 57.9 | 14.4 | 65 | S | 6.3 | 2.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.84 | 758.0 | 30.17 | 766.3 | 57.2 | 14.0 | 39 | ENE | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.82 | 757.5 | 30.08 | 764.1 | 59.0 | 15.0 | 32 | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 30.01 | 762.2 | 30.10 | 764.4 | 58.3 | 14 6 | 77 | NE | 3.8 | 1.7 | ..... | ..... | 2 | S | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 30.13 | 765.2 | 30.18 | 766.5 | 49.1 | 9.5 | 65 | E | 18.6 | 8.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.54 | 724.9 | 30.11 | 764.7 | 49.5 | 9.7 | 48 | W | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 30.00 | 761.9 | 30.11 | 764.8 | 60.4 | 15.8 | 60 | SSW | ..... | ..... | 4 | ..... | 4 | SSW | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.97 | 761.1 | 30.14 | 765.6 | 57.2 | 14.0 | 63 | S | 9.4 | 4.2 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U | 29.97 | 761.1 | 30.17 | 766.2 | 58.3 | 14.6 | 38 | SSE | ..... | ..... | 2 | ..... | 5 | N | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 47.7 | 8.7 | 40 | N | 18.6 | 8.3 | ..... | ..... | 5 | N | ..... | 0.228 | 5.8 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.87 | 758.8 | 30.07 | 763.7 | 62.6 | 17.0 | 51 | NW | ..... | ..... | 4 | ..... | 2 | W | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.22 | 742.3 | 30.12 | 765.0 | 52.7 | 11.5 | 67 | NW | 8.1 | 3.6 | ..... | ..... | 0 | ..... | ..... | 0.075 | 1.9 | ..... | Prof. F. D. Conti. |
| Palermo | 29.81 | 757.2 | 30.07 | 763.7 | 55.4 | 13.0 | 73 | ENE | 4.3 | 1.9 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 30.01 | 762.2 | 30.08 | 764 1 | 57.2 | 14.0 | 57 | E | ..... | ..... | 2 | ..... | 5 | NW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.60 | 751.8 | 30.15 | 765.9 | 54.3 | 12.4 | 40 | NNW | 4.9 | 2.2 | ..... | ..... | 3 | NW | ..... | 0 | 0 | ..... | Prof. F. Brioschi |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.8 ft.; Mondovi, 556 m., or 1,824.7 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 29.97 | 761.2 | 30.04 | 763.0 | 38.9 | 3.8 | 58 | N | 7.3 | 3.3 | ..... | 0 | 1s | ..... | ..... | 0.010 | 0.25 | Fair | The Observatory. |
| Tokei (Yeddo) University | 29.94 | 760.5 | 30.04 | 763.0 | 38.5 | 3.6 | 59 | N | 7 | 3.1 | ..... | ..... | 1ks | ..... | ..... | 0.10 | 2.5 | Fair | Prof. P. V. Veeder. |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Castillo, A. E. |
| Guadalajara | 25.07 | 636.7 | 30.13 | 765 2 | 45 0 | 7.2 | 64 | SE | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Blue sky | Prof. L. Perez. |
| Guanajuato | 23.64 | 600.7 | 29.90 | 759.6 | 54.1 | 12.3 | 49 | E | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 50.0 | 10.0 | 59 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | Prof. M. Leal. |
| Mexico | 23.06 | 585.6 | 30.15 | 765.9 | 49.6 | 9.8 | 68 | Calm | 0 | 0 | ..... | 0 | 10pk | ..... | S | 0 | 0 | Covered | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 43.0 | 6 1 | 75 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | M. V. de Leon, M. E. |
| Puebla | 23.28 | 591.3 | 30.03 | 762 8 | 40.1 | 4.5 | 81 | NE | 4.5 | 2.0 | ..... | 0 | 2ks | ..... | ..... | 0 | 0 | Clear | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 30.03 | 762.8 | 30.05 | 763.1 | 68.9 | 20.5 | 70 | N | 15.4 | 6.9 | ..... | 3ck | 7k | S | N | 0.05 | 1.3 | Covered | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 30.06 | 763.4 | 30.08 | 764.1 | 71.6 | 22.0 | 61 | WNW | 11.8 | 5.3 | ..... | 3ck | 2s | W | ..... | 0 | 0 | ½ cloudy | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 39.9 | 4.4 | 73 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Spina. [M. M. D. D. |
| Morelia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Tena, F. L. Param. |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 898 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,283.5 m., or 7,488.3 ft.; Orizaba, 1,228 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,898 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.26 | 768.5 | 30 26 | 768 5 | 48.9 | 9.4 | ..... | W | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 30.04 | 762.9 | 30.09 | 764.3 | 47.8 | 8.8 | ..... | WNW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 30.13 | 765.4 | 30.13 | 765.4 | 46.0 | 7.8 | ..... | WSW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.012 | 0.3 | ..... | |
| Hellevoetsluis | 30.22 | 767.6 | 30.22 | 767.6 | 47.8 | 8.8 | 87 | WSW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 30.16 | 766 0 | 30.21 | 767.2 | 52.3 | 11.3 | 71 | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Dull | H. v d Brink. |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS | Barometer: Corrected for instrum'tal error and temperature. Inches | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.60 | 751.9 | 29.66 | 753.3 | 34.5 | 1.4 | 72 | NNW | 22.6 | 10.1 | ..... | ..... | 3 | ..... | ..... | 0.020 | 0.5 | ..... | ..... |
| Brönö | 29.23 | 742.5 | 29.27 | 743.5 | 39.6 | 4.2 | 65 | WSW | 9 | 4 | ..... | ..... | 6 | ..... | ..... | 0.189 | 4.8 | ..... | ..... |
| Christiania | 29.21 | 741.9 | 29.35 | 745.6 | 49.3 | 9.6 | 33 | WNW | 11 | 5 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | ..... |
| Tromsö | 29.17 | 741.0 | 29.22 | 742.1 | 30.9 | — 0.6 | 62 | NW | 7 | 3 | ..... | ..... | 5 | ..... | ..... | 0.004 | 0.1 | ..... | ..... |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the cooperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.01 | 762.2 | 30.20 | 767.1 | 57.2 | 14.0 | 78 | NNE | 1.8 | 0.8 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.13 | 739.9 | 30.14 | 765.5 | 69.8 | 21.0 | 29 | ESE | 1.8 | 0.8 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.11 | 764.7 | 30.19 | 766.9 | 65.7 | 18 7 | 43 | SW | 8.1 | 3.6 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.81 | 757.2 | 30.17 | 766.3 | 62.8 | 17.1 | 39 | SSW | 7.4 | 3.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.14 | 765.6 | 30.23 | 767.8 | 63.7 | 17.6 | 71 | SSE | 4.3 | 1.9 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell: Height scale 0-9 | Sea or swell: Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.74 | 755.4 | 29.74 | 755.5 | 92.1 | 33.4 | ..... | ENE | ..... | ..... | 1 | ..... | 1 | ..... | ENE | 1 | ..... | Blue sky | J. F. R. R. Bastos, Com'd't. A. J. de Mattos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Sado, N. 15° 01′, W. 23° 11′ | 30.14* | 765.5* | 30.15* | 765.8* | 72.5 | 22.5 | ..... | NE | ..... | ..... | 3 | ..... | 4 | ..... | NE | 4 | NE | Blue sky | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.83 | 757.6 | 29.84 | 757.8 | ..... | ..... | ..... | W | ..... | ..... | 1 | ..... | 9 | ..... | E | 1 | ..... | Blue sky | F. Texeira da Silva, Com'd't. F. J. Ferreina, dos Ainas, Com' |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level: the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.55 | 750.5 | 29.98 | 761.5 | 37.4 | 3.0 | 62 | WSW | 11 | 5 | ..... | ..... | 6c | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.45 | 748.0 | 29.89 | 759.1 | 32.9 | 0.5 | 73 | WSW | 2 | 1 | ..... | ..... | 10 | ..... | ..... | Heavy clouds | ..... | Astronomical Obs. |
| Dorpat | 29.38 | 746.2 | 29.63 | 752.6 | 36.1 | 2.3 | 84 | SW | 11 | 5 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.52 | 749.9 | 29.54 | 750.3 | 34.0 | 1.1 | 77 | SSW | 16 | 7 | ..... | ..... | 10n | ..... | ..... | Snowing | ..... | Central Physical Obs. |
| Kuopio | 28.97 | 735.7 | 29.20 | 744.0 | 35.8 | 2.1 | 96 | WSW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | Ch. Forsten. |
| Kieff | 29.00 | 736.7 | 29.66 | 753.3 | 31.6 | — 0.2 | 90 | N | 11 | 5 | ..... | ..... | 10n;ks | ..... | ..... | ..... | ..... | Physical Cabinet |
| Nikolaiev | 29.49 | 749.1 | 29.56 | 750.9 | 37.9 | 3.3 | 88 | N | 4 | 2 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.51 | 749.6 | 29.53 | 750.1 | 40.6 | 4.8 | 94 | S | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.17 | 740.8 | 29.72 | 755.0 | 37.8 | 3.2 | 59 | NNW | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.18 | 741.2 | 29.39 | 746.4 | 45.1 | 7.8 | 55 | E | 2 | 1 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.37 | 745.9 | 29.39 | 746.4 | 29.1 | — 1.6 | 92 | SW | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.32 | 719.4 | 29.75 | 755.7 | 46.8 | 8.2 | 33 | NW | 18 | 8 | ..... | ..... | 7ks | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 29.55 | 750.5 | 29.47 | 748.4 | 43.9 | 6.6 | 62 | W | 7 | 3 | ..... | ..... | 10k | ..... | ..... | Blank | Blank | Sebastianof. |
| Kasan | 29.30 | 744.3 | 29.58 | 751.4 | 33.3 | 0.7 | 85 | N | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.63 | 727.1 | 29.60 | 751.7 | 32.5 | 0.3 | 70 | SE | 2 | 1 | ..... | ..... | 9c;cs | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.48 | 748.8 | 29.72 | 754.8 | 50.5 | 10.3 | 75 | WSW | 20 | 9 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.32 | 719.3 | 30.02 | 762.6 | 53.6 | 12.0 | 91 | NE | 4 | 2 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.40 | 746.8 | 29.95 | 760.8 | 21.9 | — 5.6 | 85 | NE | 4 | 2 | ..... | ..... | 5 | ..... | ..... | Light clouds | ..... | Meteorological Obs |
| Yeniseisk | 29.55 | 750.5 | 29.89 | 759.1 | 26.1 | — 3.3 | 82 | SW | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Krotkowo* | 28.97 | 735.8 | 29.45 | 748.1 | 32.7 | 0.4 | 52 | NNE | 9 | 4 | ..... | ..... | 1s | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Peking, (China) | 30.17 | 766.1 | 30.32 | 770.0 | 42.4 | 5.8 | 25 | S | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.54 | 699.4 | 29.68 | 753.8 | 23.0 | — 5.0 | 62 | NW | 2 | 1 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | — 0.8 | —18.2 | 72 | W | 7 | 3 | ..... | 0 | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 52° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | ..... | ..... | 30.03 | 762.7 | 55.9 | 13.3 | 66 | SSW | 4.7 | 2.11 | ..... | 0 | 3k | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.17 | 766.3 | 30.23 | 767.8 | 58.3 | 14.6 | 70 | NW | 1.9 | 0.83 | ..... | 3 | 2 | E | ..... | 0 | 0 | Cloudy | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.17 | 690.2 | ..... | ..... | 56.5 | 13.6 | 62 | N | 7.8 | 3.47 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.88 | 708.1 | 30.07 | 763.6 | 66.6 | 19.2 | 36 | SW | 3.0 | 1.33 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Staff. |
| Murcia, Met. Obs'y | 29.96 | 761.0 | 30.11 | 764.8 | 72.7 | 22.6 | 32 | NNE | 2.7 | 1.19 | ..... | 0 | 2 | ..... | ..... | 0 | 0 | Almost clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.21 | 741.8 | 30.09 | 764.2 | 65.7 | 18.7 | 59 | SW | 2.7 | 1.19 | ..... | 2 | 0 | Calm | ..... | 0 | 0 | Clouds | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.80 | 756.9 | 29.87 | 758.6 | 71.8 | 22.1 | 90 | SE | 9.2 | 4.1 | ..... | 10k | 0 | SW | ..... | 0.980 | 24.9 | Clear | Benito Vines, S J |
| San Fernando, Naval Obs'y | 30.07 | 763.7 | 30.16 | 766.2 | 68.0 | 20.0 | 32 | SE | 3.1 | 1.4 | ..... | 2 | 3 | NE | E | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.90 | 759.4 | 29.99 | 761.7 | 79.9 | 26.6 | 88 | SE | 8.6 | 3.83 | ..... | 2cs | 2k | SE | SE | 0 | 0 | Clear | Leonardo de Tejeda, Chief of Engineers. |

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft. The barometer readings at Barcelona are published as given.

## SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS | Barometer. Corrected for instru-m'tal error and temperature. Inches | Barometer. Corrected for instru-m'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.22 | 742.3 | 29.26 | 743.3 | 34.5 | 1.4 | ..... | SW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.19 | 741.5 | 29.24 | 742.8 | 45.3 | 7.4 | 61 | NW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0.213 | 5.4 | ..... | |
| Hernosand | 29.21 | 742.0 | 29.26 | 743.3 | 47.5 | 8.6 | 40 | WSW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.20 | 741 6 | 29.37 | 746.1 | 46.8 | 8.2 | 67 | WSW | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 0.031 | 0.8 | ..... | |
| Wisby | 29.49 | 749.0 | 29.55 | 750.5 | 45.0 | 7.2 | 83 | WSW | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.28 | 743.8 | 29.36 | 745.7 | 47.1 | 8.4 | 66 | W | 9.8 | 4.4 | ..... | ..... | 6 | ..... | SW | 0.119 | 3.03 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.76 | 730.6 | 30.20 | 767.1 | 50.4 | 10.2 | 55 | N | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| Zurich | 28.60 | 726.4 | 30.27 | 768.9 | 43.7 | 6.5 | 82 | NE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | Cloudy | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +6.1 mm.; Thermometer, +1.8 cent.; Relative Humidity, —5 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.80 | 756.9 | 44.6 | 7.1 | 49 | N | 15 | 6.5 | ..... | ..... | 4 | ..... | N | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stéfanidès. |
| Valona | ..... | ..... | 29.99 | 761.8 | 46.9 | 8.3 | ..... | NW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | A. Bertrand. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria.) Lee Obs'y | 29.71 | 754.6 | 29.83 | 757.6 | 65.7 | 18.7 | 58 | SW | ..... | ..... | 3 | ..... | 4k | ..... | SW | 0.01 | 0.3 | D. clouds | Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the cooperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.80 | 756.9 | 30.18 | 766.6 | 20 | — 6.7 | ..... | N | 1 | 0.4 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | W. R. Bigg. |
| *Chatham, N B | 29.63 | 752.6 | 29.70 | 754.4 | 12 | —11.1 | 86 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | G. A. Blair. |
| Charlottetown, P. E. Island | 29.60 | 751.8 | 29.65 | 753.1 | 19 | — 7.2 | 72 | NW | 7 | 3.1 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.96 | 761.0 | 30.17 | 766.3 | 16.9 | — 8.4 | 65 | N | ..... | ..... | 2 | 10cs | 0 | ..... | ..... | 0 | 0 | Fair | James Smith, M. A |
| Dalhousie, N. B | 29.67 | 753.6 | 29.70 | 754.4 | 8.6 | —13.0 | 76 | W | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | Clear | H. A. Johnson. |
| Esquimault, B. C | 29.82 | 757.4 | 29.86 | 758.4 | 49.3 | 9.6 | 100 | Calm | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Cloudy | W. H. Bevis. |
| *Father Point, Quebec | ..... | ..... | 29.89 | 759.2 | 7 | —13.9 | 69 | N | 28 | 12.5 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | J. McWilliams. |
| Fredericton, N. B | 29.74 | 755.4 | 29.81 | 757.2 | 11.1 | —11.6 | 58 | NW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | Inap | Inap. | Clear | Prof. Harrison. |
| *Fort Garry Manitoba | 29.32 | 744.7 | 30.18 | 766.6 | 33 | 0.6 | 94 | NE | 6 | 2.7 | ..... | ..... | 10n | ..... | NE | 0 | 0 | Cloudy | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 29.06 | 738.1 | 30.22 | 767.6 | 28.2 | — 2.1 | 98 | SE | ..... | ..... | 1 | ..... | 10n | ..... | ..... | Inap. | Inap. | Snowing | James Grant. |
| *Halifax, N. S | 29.51 | 749.5 | 29.65 | 753.1 | 25 | — 3.9 | 98 | NW | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | 0.040 | 1.14 | Light snow. | F. Allison, M. A. |
| Hamilton, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.54 | 750.3 | 29.57 | 751.1 | 36 | 2.2 | 80 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast | E. Weedon. |
| *Kingston, Ontario | 29.85 | 758.2 | 30.21 | 767.3 | 22 | — 5.6 | 85 | NW | 2 | 0.9 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | S. Woods, M. A. |
| Little Glace Bay, N. S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. H. Rigby. |
| *Montreal, Quebec | 29.95 | 760.7 | 30.17 | 766.3 | 14 | —10.0 | 63 | N | 2 | 0.9 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.49 | 749.0 | 30.23 | 767.8 | 24 | — 4.4 | 67 | N | 2 | 0.9 | ..... | 2ck | 5k | NW | NW | 0 | 0 | Fair | Rev. R. Mosley. |
| Peterboro, Ontario | 29.44 | 747.8 | 30.24 | 768.1 | 25 6 | — 3.6 | 82 | NW | ..... | ..... | ..... | 0 | 4ks | ..... | ..... | 0 | 0 | Hazy | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.51 | 749.5 | 30.24 | 768.1 | 32 | 0.0 | 90 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | NW | Inap. | Inap. | Light snow. | H. Morgan. |
| Port Hastings, N. S | 29.58 | 751.3 | 29.63 | 752.6 | 22.5 | — 5.3 | ..... | NW | 7 | 3.1 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.55 | 750.6 | 30.23 | 767.8 | 31 | — 0.6 | 78 | E | 2 | 0.9 | ..... | ..... | 10ks | ..... | NW | 0 | 0 | Cloudy | M. Payne. |
| *Quebec, Quebec | 29.71 | 754.6 | 30.07 | 763.8 | 5 | —15.0 | 50 | N | ..... | ..... | 5 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.76 | 755.9 | 30.26 | 768.6 | 14 | —10.0 | 82 | W | 4 | 1.8 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 29.78 | 756.4 | 29.83 | 757.7 | 15 | — 9.4 | 70 | NW | 15 | 6.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Dr. Gove. |
| St. John, N B | 29.62 | 752.3 | 29.80 | 756.9 | 15 | — 9.4 | 100 | NW | 11 | 4.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.43 | 747.5 | 30.18 | 766.6 | 31 | — 0.6 | 89 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | ..... | 0.07 | 1.8 | Lightsnow. | K. Stewart. |
| Stayner, Ontario | 29.42 | 747.3 | 30.23 | 767.8 | 29 | — 1.7 | 68 | E | 1 | 0.4 | ..... | ..... | 10ks | ..... | W | 0 | 0 | Cloudy | R. J. Cole. |
| Stratford, Ontario | 28.87 | 733.3 | 30.22 | 767.6 | 28.3 | — 2.1 | 95 | S | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.52 | 749.8 | 29.55 | 750.6 | 26 | — 3.3 | 75 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | ..... | Inap. | Inap. | Cloudy | T. C. Hill. |
| *Toronto, Ontario | 29.84 | 757.9 | 30.24 | 768.1 | 31 | — 0.6 | 70 | N | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | Magnetic Observatory. |
| Windsor, N. S | 29.58 | 751.3 | 29.68 | 753.9 | 22.0 | — 5.6 | 100 | NW | 20 | 8.9 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Fair | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 34.0 | 1.1 | 100 | S | ..... | ..... | ..... | 5 | 5n | ..... | ..... | 0.01 | 0.3 | Cloudy | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0–10 | CLOUDS. Amount. Up'er 0–10. | CLOUDS. Amount. Low'r 0–10 | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.91 | 759.7 | 30.15 | 765.8 | 25 | — 3.9 | 50 | NW | 12 | 5.4 | ..... | 5c | Haze | W | ..... | Inap. | Inap | Fair | |
| Alpena, Michigan | 29.46 | 748.3 | 30.13 | 765.3 | 33 | 0.6 | 79 | SW | 8 | 3.6 | ..... | 2c | 2s | NW | SW | 0.07 | 1.8 | Fair | |
| Atlantic City, New Jersey | 30.18 | 766.6 | 30.20 | 767.1 | 37 | 2.8 | 62 | NW | 4 | 1.8 | ..... | 0 | Haze | ..... | Calm | Inap. | Inap. | Clear | |
| Augusta, Georgia | 29.95 | 760.7 | 30.13 | 765.3 | 49 | 9.4 | 85 | Calm | 0 | 0 | ..... | 8c | Sm'e | Calm | Calm | 0 | 0 | Cloudy | |
| Baltimore, Maryland | 30.17 | 766.3 | 30.22 | 767.6 | 42 | 5.6 | 50 | NW | 2 | 0.9 | ..... | Haze | Sm'e | Calm | Calm | 0 | 0 | Fair | |
| Barnegat, New Jersey | 30.16 | 766.1 | 30.18 | 766.6 | 36 | 2 2 | 62 | N | 8 | 3.6 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Bismarck, Dakota | 28.28 | 718.3 | 30.13 | 765.3 | 34 | 1.1 | 90 | Calm | 0 | 0 | ..... | 5cs | Fog | Calm | E | Inap. | Inap. | Foggy | |
| Boise City, Idaho | 27.04 | 686.8 | 29.92 | 760.0 | 48 | 8.9 | 62 | E | 1 | 0.4 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Boston, Massachusetts | 29.93 | 760.2 | 30.09 | 764.3 | 22 | — 5.6 | 45 | W | 12 | 5.4 | ..... | 0 | 8s | ..... | NW | 0 | 0 | Fair | |
| Brackettville, Texas | 28.89 | 733.8 | 29.93 | 760.2 | 50 | 10.0 | 71 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 29.03 | 737.3 | 30.06 | 763.5 | 33 | 0.6 | 100 | N | 3 | 1.3 | ..... | ..... | 10s | ..... | N | Inap. | Inap. | Cloudy | |
| Brownsville, Texas | 30.03 | 762.7 | 30.10 | 764.5 | 59 | 15.0 | 81 | N | 5 | 2.2 | ..... | 0 | Fog | ..... | ..... | 0.23 | 5.8 | Foggy | |
| Buffalo, New York | 29.46 | 748.3 | 30.19 | 766.8 | 31 | — 0.6 | 89 | NE | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 62 | 16.7 | 46 | E | ..... | ..... | ..... | 0 | 8s | ..... | Calm | 0 | 0 | Fair | |
| Burlington, Vermont | 29.38 | 758.9 | 30.16 | 766.1 | 17 | — 8.3 | 50 | N | 10 | 4.5 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Cairo, Illinois | 29.64 | 752.8 | 30.03 | 762.7 | 56 | 13.3 | 63 | Calm | 0 | 0 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Camp Grant, Arizona | 25.22 | 640.6 | 30.02 | 762.5 | 51 | 10.6 | 40 | NE | ..... | ..... | 3 | 10c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Camp Verde, Arizona | 26.75 | 679.4 | 30.21 | 768.1 | 50 | 10.0 | 72 | W | ..... | ..... | ..... | 10c | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Campo, California | 27.32 | 693.9 | 29.80 | 759.2 | 40 | 4.4 | 83 | NE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.17 | 766.3 | 30.18 | 766.6 | 52 | 11.1 | 73 | NE | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Henry, Virginia | 30.14 | 765.5 | 30.17 | 766.3 | 50 | 10.0 | 58 | N | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 30.13 | 765.3 | 30.15 | 765 8 | 57 | 13.9 | 69 | NE | 21 | 9.4 | ..... | 5cs | 0 | W | ..... | 0 | 0 | Fair | |
| Cape May, New Jersey | 30.20 | 767.1 | 30.22 | 767.6 | 42 | 5.6 | 49 | E | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 30.10 | 764.5 | 30.16 | 766.1 | 58 | 14.4 | 88 | N | 2 | 0.9 | ..... | 8c;cs | Haze | W;Calm | Calm | 0 | 0 | Fair | |
| Cheyenne, Wyoming | 24.15 | 613.4 | 30.09 | 764.3 | 28 | — 2.2 | 66 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.34 | 745.2 | 30.04 | 763.0 | 39 | 3.9 | 91 | E | 11 | 4.9 | ..... | ..... | 10n | ..... | E | 0.30 | 7.6 | Light rain | |
| Cincinnati Ohio | 29.30 | 746.5 | 30.05 | 763.3 | 44 | 6.7 | 80 | E | 1 | 0.4 | ..... | 9c | Fog | W | Calm | 0 | 0 | Cloudy | |
| Clevelana, Ohio | 29.43 | 747.5 | 30.18 | 766.6 | 34 | 1.1 | 70 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Concho, Texas | 28.23 | 717.0 | 29.97 | 761.2 | 40 | 4.4 | 18 | SW | 1 | 0.4 | ..... | 8cs | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Corsicana, Texas | 29.55 | 750 6 | 30.02 | 762.5 | 52 | 11.1 | 66 | Calm | 0 | 0 | ..... | 2cs | Haze | Calm | Calm | 0 | 0 | Fair | |
| Davenport, Iowa | 29.34 | 745.2 | 29.98 | 761.5 | 45 | 7.2 | 76 | E | 2 | 0.9 | ..... | ..... | 10ks | ..... | E | Inap. | Inap. | Cloudy | |
| Deadwood, Dakota | 25.52 | 648.3 | ..... | ..... | 29 | — 1.7 | 89 | S | 1 | 0.4 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Denison, Texas | 29.24 | 742.7 | 30.03 | 762.7 | 55 | 12.8 | 56 | N | 4 | 1.8 | ..... | ..... | Haze | ..... | ..... | 0 | 0 | Hazy | |
| Denver, Colorado | 24.90 | 632.4 | 30.12 | 765.0 | 35 | 1.7 | 61 | S | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Detroit, Michigan | 29.44 | 747.8 | 30.13 | 765.3 | 36 | 2.2 | 71 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Dodge City, Kansas | 27.12 | 656.5 | 29.72 | 754 9 | 46 | 7.8 | 69 | N | 18 | 8.0 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Dubuque, Iowa | 29.30 | 744.2 | 30.01 | 762.2 | 41.5 | 5.3 | 96 | SE | 6 | 2.7 | ..... | ..... | 10n | ..... | E | 0.20 | 5.1 | Light rain | |
| Duluth, Minnesota | 29.37 | 746.0 | 30.07 | 763.8 | 35 | 1.7 | 80 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Eagle Pass, Texas | 29.50 | 744.2 | 30.05 | 763.3 | 49 | 9.4 | 93 | Calm | 0 | 0 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Hazy | |
| Eastport, Maine | 29.73 | 755.1 | 29.81 | 757.2 | 14 | —10.0 | 64 | NW | 21 | 9.4 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Erie, Pennsylvania | 29.46 | 748.3 | 30.20 | 767.1 | 36 | 2.2 | 90 | Calm | 0 | 0 | ..... | 10cs | Haze | W | ..... | 0 | 0 | Cloudy | |
| Escanaba, Michigan | 29.42 | 747.3 | 30.09 | 764.3 | 37 | 2.8 | 71 | SE | 5 | 2.2 | ..... | 5c | 0 | SE | ..... | 0 | 0 | Fair | |
| Florence, Arizona | 28.24 | 717.3 | 29.84 | 757.9 | 61 | 16.1 | 50 | SE | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | 24.16 | 613.6 | 30.16 | 766.1 | 39 | 3.9 | 63 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.55 | 649.7 | ..... | ..... | 38 | 3.3 | 72 | SW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.43 | 747.5 | 29.97 | 761.2 | 51 | 10.6 | 79 | E | 2 | 0.9 | ..... | 2c | Sm'e | Calm | ..... | 0 | 0 | Smoky | |
| Fort Griffin, Texas | 28.77 | 730.7 | 30.07 | 763.8 | 44 | 6.7 | 68 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.55 | 750.8 | 29.60 | 751.8 | —11 | —23.9 | 100 | NE | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Sill, Indian Territory | 28.80 | 731.5 | 29.91 | 759.7 | 49 | 9.4 | 71 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Smoky | |
| Galveston, Texas | 29.93 | 760.2 | 29.97 | 761.2 | 63 | 17.2 | 67 | N | 11 | 4.9 | ..... | 2cs; hz | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Grand Haven, Michigan | 29.43 | 747.5 | 30.10 | 764.5 | 39 | 3.9 | 82 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Indianapolis, Indiana | 29.24 | 742.7 | 30.02 | 762.5 | 47 | 8.3 | 62 | SE | 6 | 2.7 | ..... | ..... | 10s;sm' | ..... | Calm | 0 | 0 | Cloudy | |
| Indianola, Texas | 30.00 | 762.0 | 30.02 | 762.5 | 62 | 16.7 | 72 | NW | 10 | 4.5 | ..... | 2k | 2s | W | Calm | 0 | 0 | Fair | |
| Jacksboro, Texas | 28.90 | 734.0 | 30.04 | 763.0 | 49 | 9.4 | 44 | S | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.03 | 762.7 | 30.06 | 763.5 | 64 | 17.8 | 68 | E | 5 | 2.2 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Keokuk, Iowa | 29.26 | 743.2 | 29.86 | 758.4 | 53 | 11.7 | 80 | Calm | 0 | 0 | ..... | 0 | Haze | ..... | Calm | Inap. | Inap. | Clear | |
| Key West, Florida | 29.85 | 758.2 | 29.88 | 758.9 | 72 | 22.2 | 90 | E | 16 | 7.2 | ..... | ..... | 10s | ..... | SE | 0.50 | 14.2 | Cloudy | |
| Kittyhawk, North Carolina | 30.16 | 766.1 | 30.18 | 766.6 | 50 | 10.0 | 72 | NE | 13 | 5.8 | ..... | 8c | 0 | SW | ..... | 0 | 0 | Fair | |
| Knoxville, Tennessee | 29.09 | 738.9 | 30.12 | 765.0 | 43 | 6.1 | 75 | E | 1 | 0.4 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Smoky | |
| La Crosse, Wisconsin | 29.24 | 742.7 | 29.98 | 761.5 | 45 | 7.2 | 76 | E | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| La Mesilla, New Mexico | 26.15 | 664.2 | 30.30 | 769.6 | 36 | 2.2 | 80 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.62 | 752.3 | 29.96 | 761.0 | 51 | 10.6 | 72 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.10 | 4.8 | Clear | |
| Leavenworth, Kansas | 29.07 | 738.4 | 29.90 | 759.4 | 56 | 13.3 | 73 | NW | 6 | 2.7 | ..... | 5ck | 0 | SW | ..... | 0.04 | 1.0 | Fair | |
| Los Angeles, California | 29.54 | 750.3 | 29.88 | 758.9 | 53 | 11.7 | 90 | N | 14 | 6.3 | ..... | ..... | 10n | ..... | Calm | 0.50 | 12.7 | Light rain | |
| Louisville, Kentucky | 29.46 | 748.3 | 30.02 | 762.5 | 48 | 8.9 | 62 | SE | 4 | 1.8 | ..... | Haze | Sm'e | Calm | Calm | 0 | 0 | Smoky | |
| Lynchburg, Virginia | 29.50 | 749.3 | 30.20 | 767.1 | 43 | 6.1 | 58 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.35 | 745.5 | 30.07 | 763.8 | 38 | 3.3 | 63 | S | 1 | 0.4 | ..... | 5c | 2s | SE | Calm | 0 | 0 | Cloudy | |
| Mason, Texas | 28.42 | 721.9 | 30.21 | 767.3 | 46 | 7.8 | 69 | W | 2 | 0.9 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.72 | 754.9 | 30.04 | 763.0 | 54 | 12.2 | 68 | SE | 1 | 0.4 | ..... | Haze | Hz';sm | Calm | Calm;8E | 0 | 0 | Hazy | |
| Milwaukee, Wisconsin | 29.36 | 745.7 | 30.07 | 763.8 | 37 | 2.8 | 100 | E | 5 | 2.2 | ..... | ..... | 10n | ..... | ..... | 0.01 | 0.3 | Light rain | |
| Mobile, Alabama | 29.94 | 760.5 | 29.99 | 761.7 | 57.5 | 14.2 | 78 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Montgomery, Alabama | 29.81 | 757.2 | 30.05 | 763.3 | 52 | 11.1 | 82 | NE | 1 | 0.4 | ..... | 10c | Haze | W | Calm | 0 | 0 | Cloudy | |
| Morgantown, West Virginia | 29.08 | 738.6 | 30.18 | 766.6 | 34 | 1.1 | 70 | Calm | 0 | 0 | ..... | 5c | Sm'e | SW | ..... | 0 | 0 | Fair | |
| Mt. Washington, N. H. | 23.19 | 589.0 | 29.55 | 750.6 | —10 | —23.3 | 54 | NW | 114 | 51.0 | ..... | 0 | 0 | ..... | ..... | 0.83 | 21.1 | Clear | |
| Nashville, Tennessee | 29.53 | 750.0 | 30.07 | 763.8 | 47 | 8.3 | 85 | E | 1 | 0.4 | ..... | ..... | Haze | ..... | Calm | 0 | 0 | Hazy | |
| New Haven, Connecticut | 30.04 | 763.0 | 30.17 | 766.3 | 32 | 0.0 | 40 | NW | 6 | 2.7 | ..... | 10cs | 0 | ..... | ..... | 0 | 0 | Cloudy | |
| New London, Connecticut | 30.09 | 764.3 | 30.14 | 765.5 | 30 | — 1.1 | 68 | NW | 12 | 5.4 | ..... | 2cs | 8k;ks | W | NW | 0 | 0 | Cloudy | |
| New Orleans, Louisiana | 29.83 | 757.7 | 29.89 | 759.2 | 61 | 16.1 | 66 | NE | 14 | 6.3 | ..... | 5k | 0 | NE | ..... | 0 | 0 | Fair | |
| Newport, Rhode Island | 30.07 | 763.8 | 30.12 | 765.0 | 28 | — 2.2 | 66 | NW | 8 | 3.6 | ..... | ..... | 10ks | ..... | NW | 0 | 0 | Cloudy | |
| New York, New York | 29.93 | 761.7 | 30.17 | 766.3 | 33 | 0.6 | 42 | W | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Norfolk, Virginia | 30.13 | 765.3 | 30.19 | 766.8 | 48 | 8.9 | 56 | E | 4 | 1.8 | ..... | Haze | Haze | ..... | ..... | 0 | 0 | Hazy | |
| North Platte, Nebraska | 27.21 | 691.1 | 29.82 | 757.4 | 43 | 6.1 | 83 | NW | 12 | 5.4 | ..... | 5k | 0 | NW | ..... | 0 | 0 | Fair | |
| Olympia, Washington Ter. | 29.80 | 756.9 | 29.84 | 757.9 | 47 | 8.3 | 93 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Omaha, Nebraska | 29.88 | 733.5 | 29.96 | 761.0 | 48 | 8.9 | 93 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0.27 | 6.9 | Cloudy | |
| Oswego, New York | 29.88 | 758.9 | 30.22 | 767.6 | 29 | — 1.7 | 67 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Pembina, Dakota | 29.28 | 743.7 | 30.14 | 765.5 | 31.5 | — 0.3 | 84 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Philadelphia, Pennsylvania | 30.17 | 766.3 | 30.22 | 767.6 | 36 | 2.2 | 62 | N | 11 | 4.9 | ..... | 5c | Haze | NW | Calm | 0 | 0 | Fair | |
| Phœnix, Arizona | 28.75 | 730.2 | 30.54 | 775.7 | 58 | 14.4 | 58 | Calm | ..... | ..... | ..... | 2c | 5s | Calm | Calm | 0 | 0 | Fair | |
| Pike's Peak, Colorado | 17.88 | 454.1 | 30.08 | 764.0 | 17 | — 8.3 | 51 | NE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Ploche, Nevada | 23.95 | 608.3 | 29.72 | 754.9 | 48 | 8.9 | 49 | S | 11 | 4.9 | ..... | 5k | 5s | S | S | 0 | 0 | Cloudy | |
| Pittsburg, Pennsylvania | 29.34 | 745.2 | 30.19 | 766.8 | 33 | 0.6 | 79 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Port Huron, Michigan | 29.47 | 748.5 | 30.16 | 766.1 | 33 | 0.6 | 70 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Portland, Maine | 29.95 | 760.7 | 30.00 | 762.0 | 24 | — 4.4 | 61 | NW | 10 | 4.5 | ..... | 2c;ck | Haze | NW | ..... | 0 | 0 | Fair | |
| Portland, Oregon | 29.80 | 756.9 | 29.90 | 759.4 | 52 | 11.1 | 86 | W | 3 | 1.3 | ..... | ..... | 8s | ..... | W | 0 | 0 | Cloudy | |
| Prescott, Arizona | 24.75 | 628.6 | 30.11 | 764.8 | 41 | 5.0 | 65 | W | ..... | ..... | ..... | 5c | c | Calm | ..... | 0 | 0 | Fair | |
| Punta Rassa, Florida | 29.90 | 759.4 | 29.91 | 759.7 | 67 | 19.4 | 84 | E | 24 | 10.7 | ..... | ..... | 10s | ..... | E | 0.01 | 0.3 | Cloudy | |
| Red Bluff, California | 29.52 | 749.8 | 29.87 | 758.7 | 54 | 12.2 | 87 | SW | 12 | 5.4 | ..... | 2c | 2s | S | Calm | 0 | 0 | Fair | |
| Rochester, New York | 29.56 | 750.8 | 30.21 | 767.3 | 30 | — 1.1 | 57 | NE | 5 | 2.2 | ..... | 8cs | 0 | Calm | ..... | 0 | 0 | Fair | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roseburg, Oregon | 29.28 | 743.7 | 29.84 | 757.9 | 50.5 | 10.3 | 93 | Calm | 0 | 0 | ..... | Haze | 8s | ..... | Calm | 0 | 0 | Cloudy | |
| Sacramento, California | 29.76 | 755.9 | 29.85 | 758.2 | 63 | 11.7 | 80 | SE | 4 | 1.8 | ..... | 2c | 0 | SE | ..... | 0.01 | 0.3 | Fair | |
| St. Louis, Missouri | 29.42 | 747.3 | 29.99 | 761.7 | 56 | 13.3 | 63 | N | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| St. Marks, Florida | 29.99 | 761.7 | 30.01 | 762.2 | 68 | 14.4 | 76 | E | 7 | 3.1 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| St. Paul, Minnesota | 29.14 | 740.1 | 29.97 | 761.2 | 43 | 6.1 | 83 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.60 | 650.2 | 29.93 | 760.2 | 49 | 9.4 | 51 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Antonio, Texas | 29.34 | 745.2 | 29.92 | 760.0 | 54 | 12.2 | 67 | W | 2 | 0.9 | ..... | 2c | 8s | W | Calm | 0 | 0 | Cloudy | |
| San Diego, California | 29.90 | 759.4 | 29.97 | 761.2 | 53 | 11.7 | 93 | E | 6 | 2.7 | ..... | 0 | 5s | ..... | S | 0 | 0 | Fair | |
| Sandusky, Ohio | 29.46 | 748.3 | 30.14 | 765.5 | 41 | 5.0 | 74 | SE | 11 | 4.9 | ..... | 2cs | 7s | Calm | Calm | 0 | 0 | Cloudy | |
| Sandy Hook, New Jersey | 30.16 | 766.1 | 30.18 | 766.6 | 35 | 1.7 | 53 | NW | 28 | 12.5 | ..... | 10k | 0 | NW | ..... | 0 | 0 | Cloudy | |
| San Francisco, California | 29.74 | 755.4 | 29.81 | 757.2 | 54 | 12.2 | 83 | SE | 8 | 3.6 | ..... | 2c | 5s | SE | SE | 0.46 | 11.7 | Fair | |
| Santa Fé, New Mexico | 23.36 | 593.3 | 29.90 | 759.4 | 35 | 1.7 | 70 | NE | 1 | 0.4 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 30.00 | 762.0 | 30.09 | 764.3 | 56 | 13.3 | 81 | E | 5 | 2.2 | ..... | 0 | 8s; sm | ..... | SE | 0 | 0 | Cloudy | |
| Shreveport, Louisiana | 29.81 | 757.2 | 30.03 | 762.7 | 55 | 12.8 | 87 | Calm | 0 | 0 | ..... | 5cs | Sm'e | Calm | Calm | 0 | 0 | Fair | |
| Smithville, North Carolina | 30.12 | 765.0 | 30.15 | 765.8 | 54 | 12.2 | 93 | S | 1 | 0.4 | ..... | 8cs | Sm'e | W | Calm | 0 | 0 | Cloudy | |
| Springfield, Massachusetts | 29.96 | 761.0 | 30.10 | 764.5 | 28 | — 2.2 | 54 | W | 4 | 1.8 | ..... | 5c | 0 | NW | ..... | Inap | Inap. | Fair | |
| Stockton, Texas | 27.04 | 686.8 | 30.04 | 763.0 | 40 | 4.4 | 56 | SW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.99 | 761.7 | 30.05 | 763.3 | 23 | — 5.0 | 60 | NW | 24 | 10.7 | ..... | 8cs; k | 0 | NW | ..... | 0 | 0 | Fair | |
| Toledo, Ohio, | 29.43 | 747.5 | 30.12 | 765.0 | 43 | 6.1 | 67 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 57 | 13.9 | 38 | SE | ..... | ..... | 5 | 10cs | 0 | S | ..... | 0 | 0 | Cloudy | |
| Tybee Island, Georgia | 30.05 | 763.3 | 30.08 | 764.0 | 61 | 16.1 | 83 | E | 12 | 5.4 | ..... | 5cs | 5s | Calm | SE | 0 | 0 | Cloudy | |
| Umatilla, Oregon | 29.53 | 750.0 | ..... | ..... | 43 | 6.1 | 100 | SE | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Vicksburg, Mississippi | 29.887 | 758.92 | 30.147 | 765.52 | 58 | 14.4 | 58 | Calm | 0 | 0 | ..... | 8c | Sm'e | Calm | Calm | 0 | 0 | Fair | |
| Virginia City, Montana | 24.28 | 616.7 | 29.76 | 755.9 | 41 | 5.0 | 41 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Visalia, California | 29.50 | 749.3 | 29.86 | 758.4 | 53 | 11.7 | 73 | E | 6 | 2.7 | ..... | 2ck | 5s | SE | SE | 0.07 | 1.8 | Cloudy | |
| Washington, D. C | 30.11 | 764.8 | 30.22 | 767.6 | 40 | 4.4 | 56 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 50 | 10.0 | 52 | N | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.06 | 763.5 | 30.14 | 765.5 | 51 | 10.6 | 100 | S | 5 | 2.2 | ..... | ..... | Fog | ..... | S | 0 | 0 | Dense fog | |
| Winnemucca Nevada | 25.43 | 645.9 | 29.79 | 756.7 | 46 | 7.8 | 54 | NE | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Wood's Holl, Mass | 30.05 | 763.3 | 30.10 | 764.5 | 30 | — 1.1 | 68 | NW | 20 | 8.9 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Clear | |
| Yankton, Dakota | 28.73 | 729.7 | 30.09 | 764.3 | 43 | 6.1 | 87 | N | 14 | 6.3 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Yuma, Arizona | 29.60 | 753.4 | 29.83 | 757.7 | 68 | 17.2 | 57 | SE | 3 | 1.3 | ..... | 10cs | 0 | W | ..... | 0 | 0 | Cloudy | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 30.23 | 767.8 | 30.28 | 769.1 | 1.5 | —16.9 | 100 | E | 10 | 4.5 | ..... | 3c | 6s | SE | ..... | 0.25 | 6.3 | Cloudy | J. Fortescue, W. Wood |
| Havana, Cuba, W. I | 29.82 | 757.4 | 29.84 | 757.9 | 73 | 22.8 | 86 | SE | 7.2 | 3.2 | ..... | 0 | 0 | ..... | ..... | 1.04 | 26.4 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | 29.99 | 761.7 | 30.00 | 762.0 | 82 | 27.8 | 87 | SE | 15 | 6.7 | ..... | 2c | 2s | SE | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I | 29.86 | 758.4 | 29.94 | 760.5 | 82 | 27.8 | ..... | SE | 20 | 8.9 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | ..... | ..... | 30.02 | 762.5 | 82 | 27.8 | 83 | NE | ..... | ..... | 3 | 5k | 6ks | E | ..... | 0.100 | 2.54 | ⅜ Cloudy | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | 30.06 | 763.4 | 30.07 | 763.6 | 87.8 | 31 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.87 | 22. | Raining | Dr. H. Groot. |
| Medellin, Colombia, S. A | 25.17 | 639.3 | ..... | ..... | 67.5 | 19.7 | 75 | Calm | ..... | ..... | 0 | 5cs; k | 0 | ..... | ..... | 0 | 0 | ..... | Thomas Herran |

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medillin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,400 (?) ft., or 1,036.3 (?) m.; Camp o, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,152 ft., or 1,573.4 m.; Fodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,676 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,916.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,400 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,100.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,862.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3,488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.83 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er —10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.79 | 756.7 | 52 | 11.1 | 51 | 10.6 | 86 | ENE | 5 | 2.2 | ..... | ..... | 2c | ..... | S | 0.22 | 5.6 | ..... | ..... | Clear..... | |
| Navy Yard, Pensacola, Fla. | 30.19 | 766.8 | 63 | 17.2 | 63 | 17.2 | 94 | ENE | 4 | 1.8 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy ... ... | |
| Navy Yard, Portsmouth, N.H. | 30.11 | 764.8 | 73 | 22.8 | 21 | — 6.1 | 86 | NW | 6 | 2.7 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Naval Hospital, Yokohama, Japan | 29.94* | 760.5* | 54.5 | 12.5 | 42 | 5.6 | 60 | NNE | ..... | ..... | 6 | ..... | 2k | ..... | WSW | 0.05 | 1.3 | ..... | ..... | Fair..... | |
| Adams. Panama | 29.87 | 758 7 | 82 | 27.8 | 82 | 27.8 | 87 | NW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Alliance, Piraeus, Greece | 29.85‡ | 758.2‡ | ..... | ..... | 49 | 9.4 | 57 | NNW | ..... | ..... | 4–6 | ..... | 4 | ..... | NNW | ..... | ..... | ..... | ..... | Pleasant.... | |
| Ashuelot. Shanghai, China | 30.44* | 773.2* | 54 | 12.2 | 48 | 8.9 | 85 | ESE | ..... | ..... | 1 | ..... | 3 | ..... | Calm | ..... | ..... | ..... | ..... | D clouds.... | |
| Canonicus, New Orleans, La. | 29.91 | 759.7 | 47 | 8.3 | 63 | 17.2 | 62 | N | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Colorado. New York, N. Y. | 30.14‡ | 765.5‡ | ..... | ..... | 34 | 1.1 | 71 | WNW | 21 | 9.4 | ..... | ..... | 8 | ..... | WNW | 0 | 0 | ..... | ... .... | Cloudy..... | |
| Constitution, N. 49° 38′ W. 12° 34′ | 30.42‡ | 772.7‡ | ..... | ..... | 50 | 10.0 | 79 | ESE | ..... | ..... | 4 | ..... | 10 | ..... | SE | ..... | ..... | Smooth | SE | Overcast..... | |
| Despatch, Sulina, Bulgaria | 29.78 | 756.4 | 74 | 23.3 | 35 | 1.7 | 90 | NW | ..... | ..... | 4 | ..... | 10 | ..... | NW | ..... | ..... | Smooth | ..... | Rain & snow | |
| Enterprise, New Orleans, La. | 29.96‡ | 761.0‡ | ..... | ..... | 62 | 16.7 | 77 | NE | ..... | ..... | 2 | ..... | 8 | ..... | S | ..... | ..... | ..... | ..... | Cloudy..... | |
| Franklin. Norfolk, Va. | 30.17‡ | 766.3‡ | ..... | ..... | 48 | 8.9 | 100 | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Gettysburg Valetta, Malta | 30.09‡ | 764.3‡ | ..... | ..... | 61 | 16.1 | ?? | WNW | ..... | ..... | 1 | ..... | 2 | ..... | Calm | Blank | Blank | ..... | ..... | Clear ..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.11 | 764.8 | 71 | 21.7 | 71 | 21.7 | 62 | NNE | ..... | ..... | 5 | ..... | 2 | ..... | NE | ..... | ..... | ..... | ..... | Clear..... | |
| Marion, Smyrna, Turkey | 29.72 | 754.9 | 54 | 12.2 | 44 | 6.7 | 92 | SW | ..... | ..... | 1 | ..... | 10 | ..... | SW | Mod'ate | Mod'ate | Smooth | SW | Cloudy..... | |
| Michigan, Erie, Pa. | 29.68 | 753.9 | 62 | 16.7 | 35 | 1.7 | 90 | S | ..... | ..... | 2 | ..... | 8 | ..... | S | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monongahela. Hong-Kong, China | 30 31* | 769.9* | 62 | 16.7 | 62 | 16.7 | 83 | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | Mod'ate | Mod'ate | ..... | ..... | D. clouds.... | |
| New Hampshire, Port Royal, S. C. | 30.30 | 769.6 | 63 | 17.2 | 61 | 16.1 | 82 | E | 7 | 3.1 | ..... | ..... | 2 | ..... | E | 0 | 0 | ..... | ..... | Fair ..... | |
| Omaha, N. 10° 15′, W. 43° 38′. | 30.12* | 765.0* | 78 | 25.6 | 78 | 25.6 | 78 | NE | 4 | 1.8 | ..... | ..... | 4 | ..... | E | 0 | 0 | Mod'ate | NE | ..... | |
| Onward, Callao, Peru | 29.98† | 761.5† | ..... | ..... | 73 | 22.8 | 85 | SE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, Vera Cruz, Mexico | 30.09‡ | 764.3‡ | ..... | ..... | 71 | 21.7 | 80 | NW | ..... | ..... | 3 | ..... | 5 | ..... | WNW | ..... | ..... | Rough | NE | Fair ..... | |
| Palos, Shanghai, China | 30.46* | 773.7* | 62 | 16.7 | 53 | 11.7 | 73 | ENE | ..... | ..... | 2 | ..... | 3 | ..... | N&E | ..... | ..... | ..... | ..... | Clear ..... | |
| Pensacola, Honolulu, H. I. | 30.11 | 764.8 | 72 | 22.2 | 70 | 21.1 | 75 | W | 3 | 1.3 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | ..... | ..... | |
| Plymouth. Norfolk, Va. | 30.19‡ | 766.8‡ | ..... | ..... | 49 | 9.4 | 78 | E | ..... | ..... | 0–1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Powhatan, Port Royal, S, C. | 30.14‡ | 765.5‡ | ..... | ..... | 62 | 16.7 | 94 | E | 3.6 | 1.6 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | Smooth | ..... | Misty..... | |
| Ranger. Amoy, China | 30.42* | 772.7* | ..... | ..... | 56 | 13.3 | 81 | ENE | ..... | ..... | 3 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | D. clouds.... | |
| Rio Bravo, Brownsville, Texas | ..... | ..... | ..... | ..... | 55 | 12.8 | 93 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | |
| Santee. Annapolis, Md | 30.31* | 769.9* | 69 | 20.6 | 47 | 8.3 | 55 | N | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | ..... | Clear ..... | |
| Saratoga, Washington, D. C. | 30.11* | 764.8* | ..... | ..... | 43 | 6.1 | 83 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| St. Louis, League Island, Pa | 30.12 | 765.0 | 55 | 12.8 | 38 | 3.3 | 100 | NW | 6 | 2.7 | ..... | ..... | 8 | ..... | NNW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Supply, N. 50° W. 2° 16″ | 30.44 | 773.2 | 54 | 12.2 | 49 | 9.4 | 85 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | NE | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Swatara, Cartagena, New Grenada | 29.87* | 758.7* | ..... | ..... | 84 | 28.9 | 67 | WNW | ..... | ..... | 1 | ..... | 5 | ..... | N&E | ..... | ..... | ..... | ..... | D. clouds.... | |
| Tennessee, N. 6° 15′, E. 91° 19′ | 29.98* | 761.5* | 86 | 30.0 | 85 | 29.4 | 79 | NNW | 5 | 2.2 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | Smooth | ..... | D. clouds.... | |
| Trenton, Piraeus, Greece | 29.85‡ | 758.2‡ | ..... | ..... | 52 | 11.1 | 73 | NNW | ..... | ..... | 3–4 | ..... | 2 | ..... | NW | 0.3 | 8. | Mod'ate | ..... | Clearing..... | |
| Tuscarora, N. 24° 15, 31″ W. 110° 20′ 47″ | 29.96 | 761.0 | 69 | 20.6 | 70 | 21.1 | 70 | SSE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear. ..... | |
| Vandalia, Naples, Italy | 30 05‡ | 763.3‡ | ..... | ..... | 57 | 13.9 | 50 | S | ..... | ..... | 1 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Clear..... | |
| Wabash, Boston, Mass. | 30.08‡ | 764.0‡ | ..... | ..... | 22 | — 5.6 | ..... | WNW | 12 | 5.4 | ..... | ..... | 8 | ..... | Calm | 0 | 0 | ..... | ..... | Cloudy..... | |
| Wyoming, N. 39° 21′ W. 66° 16′ | 30.04* | 763.0* | ..... | ..... | 36 | 2.2 | 70 | NNW | ..... | ..... | 5–6 | ..... | 3 | ..... | N&W | ..... | ..... | Rough | N&W | Squally..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0 10. | From— | From— | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Panama, N. 39° 50′, W. 124° 20″ | | | 29.83* | 757.7* | | | | E | | | 2 | | 4 | | S | Mod'ate | SE | Fair. | Capt. Seabury. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, Hong-Kong, China | | | | | 60 | 15.6 | | E | | | 3 | | | | | | | Blue sky | Capt. Maury. |
| S. S. Colima, N. 8° 34′, W. 79° 30′ | | | 29.78† | 756.4† | 79 | 26.1 | 95 | ENE | | | 1 | | 5 | | E | Small | N | D. clouds | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, New York, N. Y. | | | 30.17† | 766.3† | 37 | 2.8 | ?? | WNW | | | 4 | | 10k | | NW | | | Fair | Capt. W. H. Thompson |
| S. S. Celtic, N. 41° 22′, W. 64° 8′ | | | 29.78† | 756.4† | 52 | 11.1 | | NW | | | 6 | | 10 | WNW | | Strong sea. | WNW | Squally | Capt. B. Gleadell. |
| S. S. Germanic, Mersey River | | | 30.25† | 768.3† | 50 | 10.0 | 79 | NW | | | 3 | | | | N | | | D. clouds | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Aneroid.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic | | | | | | | | | | | | | | | | | | | Capt. John Metcalf. |
| S. S. Gaelic, N. 33° 50′, E. 138° 00′ | | | 30.02† | 762.5† | 49 | 9.4 | ?? | NE | | | 3 | | 8 | | SE | Smooth | W | D. clouds | Capt. W. H. Kidley |
| S. S. Oceanic, N. 37° 35′, W. 132° 06′ | | | 29.83 | 757.7 | 52 | 11.1 | 86 | WNW | | | 3 | | 2 | | NW | | W | D. clouds | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAME OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Upper. | Lower. | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | Character | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, N. 48° 23′ 36″, W. 31° 59′ 15″ | | | 30.03† | 762.7† | 54 | 12.2 | 100 | SE | | | 2 | | 6 | | E | Light | E | Cloudy.. | Captain Sargent. |
| S. S. Ohio, N. 42° 41′, W. 56° 04′ | | | 29.42 | 747.3 | 39 | 3.9 | 91 | NNW | | | 4 | | 10 | | NNW | Mod'ate | SW | Misty | Captain Morrison. |
| S. S. Pennsylvania | | | | | | | | | | | | | | | | | | | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. †Aneroid; unreliable, corrected for elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Rendle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
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**ALLAN LINE MARINE SERIES.**

Furnished by the coöperation of A. Schumacher, & Co., Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Scandinavian | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.)**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller Crisfield, Md. | | | 29.99 | 761.7 | 52 | 11.1 | 60 | NE | 6 | 2.7 | | | 0 | | | | | Clear | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.91 | 759.7 | —24 | —31.1 | 90* | Calm | 0 | 0 | | | 10s | | SE | | | Cloudy | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Determined by use of hair hygrometer.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 22, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.23 | 767.7 | 61.0 | 16.6 | ..... | NE | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair. | Dr. Ollive. |
| Nemours | ..... | ..... | 30.14 | 765.6 | 64.4 | 18.0 | 65 | NNW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair. | Michel. |
| Algiers | ..... | ..... | 29.97 | 761.2 | 64.4 | 18.0 | 62 | WNW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Towilliere. |
| La Calle | ..... | ..... | 30.01 | 762.2 | 58.6 | 14.8 | 80 | ENE | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy. | Boulangeot. |
| Tunis | ..... | ..... | 30.07 | 763.6 | 67.3 | 19.6 | 48 | WSW | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0 | 0 | Very cloudy | Jacques. |
| Sfax | ..... | ..... | 30.10 | 764.5 | 66.2 | 19.0 | ..... | E | ..... | ..... | 1 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy. | Gau. |
| Saida | ..... | ..... | 30.13 | 765.4 | 57.9 | 14.4 | 84 | S | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair. | Herbin. |
| Tebessa | ..... | ..... | 30.08 | 764.0 | ..... | ..... | ..... | Calm | ..... | ..... | 0 | ..... | 7 | ..... | ..... | 0 | 0 | Very cloudy | Bourgeois. |
| Geriville | ..... | ..... | 30.19 | 766.7 | 51.1 | 10.6 | 84 | N | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0.04 | 1. | Pretty fair. | Lemaillot. |
| Laghouat | ..... | ..... | 30.16 | 766.1 | 63.7 | 17.6 | 47 | W | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy. | Guyot. |
| Biskra | ..... | ..... | 30.10 | 764.6 | 69.8 | 21.0 | 41 | N | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | Clear. | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,380? m.; or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.34 | 745.3 | 29.89 | 759.2 | 55.4 | 13.0 | 37 | SW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozu |
| Cracow, I. R. Observatory | 29.00 | 736.6 | 29.77 | 756.2 | 46.4 | 8.0 | 78 | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.189 | 4.8 | ..... | Dr. Wierzbiski. |
| Eperies | 28.92 | 734.5 | 29.81 | 757.1 | 45.3 | 7.4 | 61 | S | ..... | ..... | 2 | ..... | 10s | ..... | Calm | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.63 | 727.1 | 29.87 | 758.8 | 51.6 | 10.9 | 45 | WNW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.46 | 722.8 | 29.92 | 759.9 | 41.0 | 5.0 | 62 | WNW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.52 | 724.5 | 29.88 | 759.0 | 44.6 | 7.0 | 66 | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner |
| Lemberg | 28.72 | 729.6 | 29.73 | 755.1 | 40.6 | 4.8 | 74 | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.028 | 0.7 | ..... | Dr. T. Stanecki. |
| Pola | 29.87 | 758.7 | 29.98 | 761.5 | 55.4 | 13.0 | 53 | S | ..... | ..... | 3 | ..... | 1s | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Johann Tamas, S. J. |
| Szegedin | 29.63 | 752.7 | 29.92 | 759.9 | 50.4 | 10.2 | 60 | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Karl Stanecl. |
| Trieste | 29.88 | 758.9 | 29.98 | 761.5 | 51.1 | 10.6 | 63 | N | ..... | ..... | 1 | ..... | 0? | ..... | ..... | 0.228 | 5.8 | Raining? | P. Busin. |
| Vienna | 29.14 | 740.2 | 29.86 | 758.5 | 49.5 | 9.7 | 53 | W | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.39 | 721.0 | 29.92 | 759.9 | 42.6 | 5.9 | 81 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.346 | 8.8 | ..... | Prof. M. Passau. |
| Brussels | 29.70 | 754.4 | 29.91 | 759.6 | 41.4 | 5.2 | 84 | NW | ..... | ..... | 2 | ..... | 10 | ..... | N | 0.035 | 0.9 | ..... | Royal Observatory. |
| Furnes | 29.93 | 760.2 | 29.95 | 760.8 | 41.7 | 5.4 | 84 | NNE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.043 | 1.1 | Light rain | M. E. de Cae. |
| Maeseyck | 29.79 | 756.7 | 29.92 | 759.9 | 40.6 | 4.8 | 84 | N | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0.016 | 0.4 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4? set. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

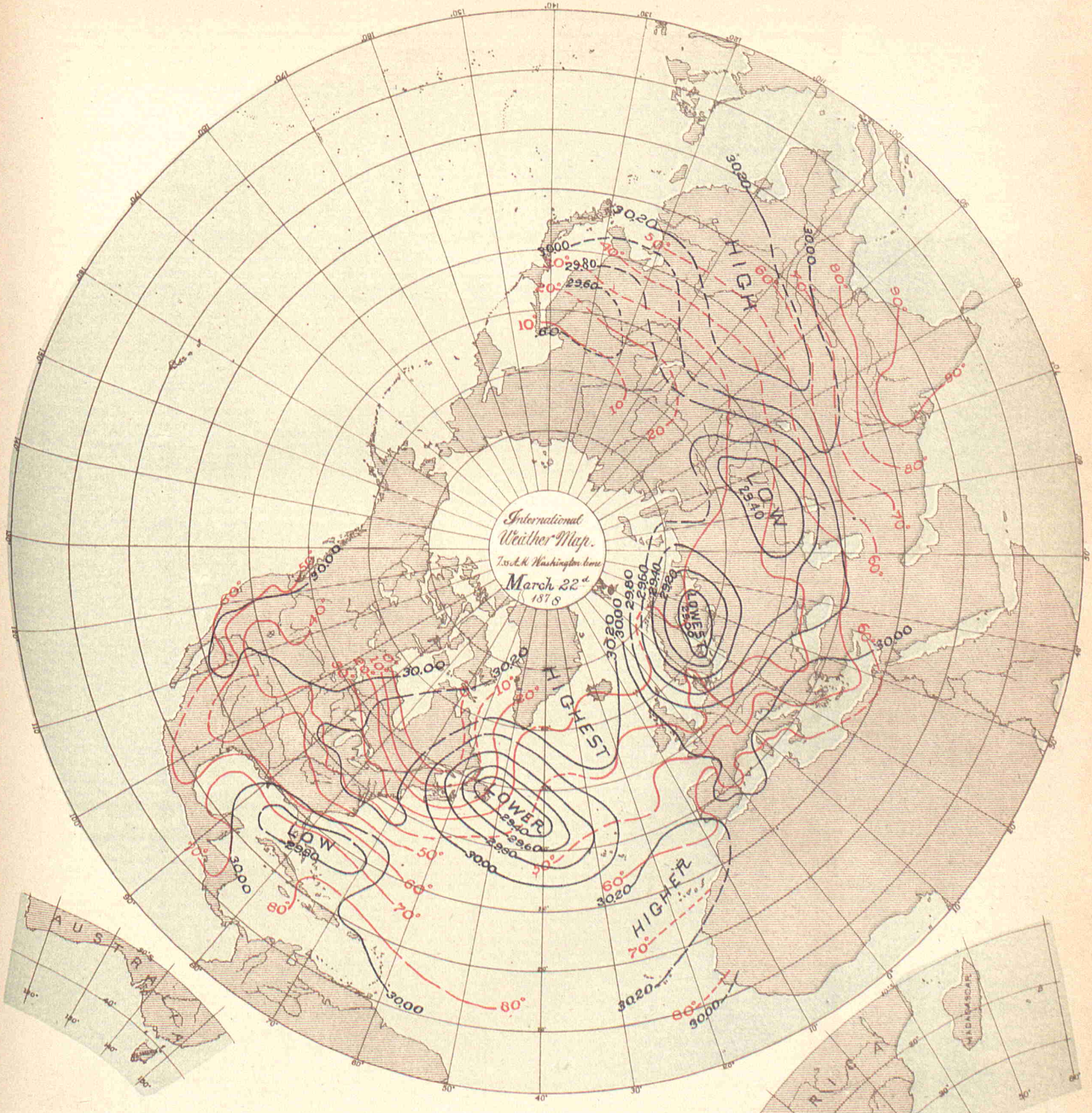
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E. Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. Rhumb. | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.84 | 757.9 | 29.94 | 760.5 | 36.7 | 2.6 | ..... | NW | 28 | 12.5 | ..... | ..... | 4 | ..... | ..... | 0.130 | 3.30 | Blue sky..... | W. Boswell. |
| Ardrossan | 30.02 | 762.5 | 30.03 | 762.7 | 42 | 5.6 | ..... | NW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.14 | 765.5 | 38.9 | 3.8 | ..... | NNW | 7 | 3.1 | ..... | ..... | 6 | ..... | ..... | Blank | Blank | D. clouds..... | S. Call, for Dr. Robinson. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.02 | 762.5 | 42.0 | 5.6 | ..... | NW | 12 | 5.4 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 30.14 | 765.5 | 41.9 | 5.5 | ..... | NNW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | J. Dreyer. |
| Bradford, Yorkshire | 29.53 | 750.0 | 29.92 | 760.0 | 40.5 | 4.7 | ..... | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.97 | 761.2 | 30.00 | 762.0 | 83.0 | 28.3 | ..... | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.97 | 761.2 | 40.6 | 4.4 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | H. Todd. [H. C. |
| Cardington | ..... | ..... | 29.99 | 761.7 | 43.4 | 6.3 | ..... | N | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | John McLaren. |
| Chatham, School M. E. | 29.84 | 757.9 | 29.97 | 761.2 | 40.2 | 4.6 | ..... | NW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.50 | 723.9 | 30.00 | 762.0 | 43.0 | 6.1 | ..... | NW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | Fine..... | Alexander Watt. |
| Donaghadee | 30.05 | 763.3 | 30.08 | 764.0 | 43 | 6.1 | ..... | NNE | ..... | ..... | 5 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 29.92 | 760.0 | 29.94 | 760.5 | 43 | 6.1 | ..... | NE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.99 | 761.7 | 43.7 | 6.5 | ..... | NNE | 1.4 | 0.6 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | Thomas Mackereth. |
| Falmouth, Observatory | 29.82 | 757.4 | 30.05 | 763.3 | 45.0 | 7.2 | ..... | N | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | The Staff. |
| Fort Napier, (Natal) | 27.38 | 695.4 | 29.59 | 751.6 | 84.2 | 29.0 | ..... | NW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.71 | 754.6 | 29.94 | 760.5 | 88 | 31.1 | ..... | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | |
| Galway, Queen's College | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.10 | 764.5 | 30.15 | 765.8 | 65.5 | 18.6 | ..... | W | ..... | ..... | 6 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | Corpl. C. Aitken, A. H. C. |
| Glasgow, Observatory | 29.81 | 757.2 | 30.02 | 762.5 | 39.6 | 4.2 | ..... | NNW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | D. G. Maclean. |
| Great Yarmouth | 29.95 | 760.7 | 29.96 | 761.0 | 38 | 3.3 | ..... | NNW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | Snowing..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.81 | 757.2 | 29.98 | 761.5 | 43.3 | 6.3 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | The Staff, for G. B. Airy. |
| Guernsey | 29.77 | 756.1 | 30.00 | 762.0 | 44 | 6.7 | ..... | NE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 30.09 | 764.3 | 48 | 8.9 | ..... | NE | ..... | ..... | 6 | ..... | 6c | ..... | ..... | 0 | 0 | Fine..... | M. P. Moyle. |
| Holyhead | 30.00 | 762.0 | 30.06 | 763.5 | 41 | 5.0 | ..... | N | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | John Tilston. |
| Jersey | 29.72 | 754.9 | 30.02 | 762.5 | 46.1 | 7.8 | ..... | NW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Showery..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 29.99 | 761.7 | 42.5 | 5.8 | ..... | NNW | 14 | 6.3 | ..... | ..... | 8k | ..... | ..... | ..... | ..... | Threatening | The Staff. |
| Kingstown | 30.09 | 764.3 | 30.12 | 765.0 | 41 | 5.0 | ..... | N | ..... | ..... | 5 | ..... | 3 | ..... | ..... | Blank | Blank | Blue sky..... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 30.00 | 762.0 | 39.2 | 4.0 | ..... | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 30.02 | 762.5 | 30.10 | 764.5 | 61.8 | 16.6 | ..... | SW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Sgt. Fred. Travis, A. H. |
| Nairn | 29.93 | 760.2 | 30.02 | 762.5 | 37 | 2.8 | ..... | W | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded... | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 29.86 | 758.4 | 75.2 | 24.0 | ..... | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | C. S. Duncombe. |
| Nottingham, Observatory | 29.81 | 757.2 | 30.01 | 762.2 | 39.6 | 4.2 | ..... | N | ..... | ..... | 1 | ..... | 8k | ..... | WNW | 0.001 | 0.03 | D. clouds..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.45 | 748.0 | 29.99 | 761.7 | 39.9 | 4.4 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.00 | 762.0 | 43 | 6.1 | ..... | NNW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | Mr. Lucas. |
| Plymouth | 29.95 | 760.7 | 30.03 | 762.7 | 46.6 | 8.1 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Merrifield. |
| Roche's Point | 30.10 | 764.5 | 30.14 | 765.5 | 48 | 8.9 | ..... | NNE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Cloudy ..... | W. Kennedy. |
| Saint Ann's Head | 30.037 | 762.77 | 30.05 | 763.3 | 43 | 6.1 | ..... | NW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Showery..... | John C. Walker. |
| Sandwick Manse, (Orkneys.) | ..... | ..... | 29.96 | 761.0 | 33.2 | 0.7 | ..... | N | 34 | 15.2 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | Showery..... | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.95 | 760.7 | 45.8 | 7.7 | ..... | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | Sergt. W. H. Lyne. |
| Sheffield | 29.73 | 755.1 | 30.02 | 762.5 | 41.1 | 5.1 | ..... | NW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | Inap. | Inap | D. clouds..... | W. F. Cooper. |
| Silloth Rectory | 29.97 | 761.2 | 30.00 | 762.0 | 42.3 | 5.7 | 59 | N | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | D. clouds..... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.69 | 751.6 | 30.00 | 762.0 | 39.6 | 4.2 | ..... | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | Blank | Blank | D. clouds..... | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 30.06 | 763.5 | 37 | 2.8 | ..... | N | ..... | ..... | 5 | ..... | 2 | ..... | ..... | ..... | ..... | ¼ clouded... | John Sutherland. |
| Stratfield Turgiss | 29.78 | 756.4 | 30.00 | 762.0 | 45.8 | 7.7 | ..... | N | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. C. H. Griffith, F. M. |
| Thurso | ..... | ..... | 29.96 | 761.0 | 36 | 2.2 | ..... | NNW | ..... | ..... | 6 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 30.05 | 763.3 | 49 | 9.4 | ..... | NE | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 30.16 | 766.1 | 47.3 | 8.5 | ..... | NE | 13 | 5.8 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.22 | 767.6 | 66.0 | 18.9 | 82 | S | ..... | ..... | 3 | ..... | 3k | ..... | ..... | 0 | 0 | Hazy..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.90 | 759.4 | 30.08 | 764.1 | 81.9 | 27.7 | 74 | ESE | 19.5 | 8.7 | ..... | 4 | 6 | ..... | E | 0.34 | 8.6 | Cloudy; squally | C. Meldrum. |
| Melbourne, Observatory | 30.12 | 765.0 | 30.21 | 767.3 | 57.0 | 13.9 | 92 | SE | 2 | 0.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Heavy dew.. | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1, 400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m.

| MARINE SERIES. VESSELS. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather | Observer |
|---|---|---|---|---|
| S. S. Algeria, N. 51° 31′, W. 10° 43′ | 5* | NNW | D. clouds... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | Capt. C. C. Prehn. |
| S. S. Peruvian, N. 55° 40′, W. 4° 40′ | ..... | ..... | ..... | [R. Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire | ..... | ..... | ..... | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.20 | 665.5 | | | 71.2 | 21.8 | 91 | E | | | 1 | 3pc | 6ks;d | | E | | | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.40 | 746.7 | 29.45 | 747.9 | 39.2 | 4.0 | 47 | NW | | | 6 | | 2 | | | | | | |
| Fanöe | 29.57 | 751.1 | 29.59 | 751.6 | 41.0 | 5.0 | 75 | N | | | 7 | | 6 | | | | | | |
| Godthaab, (Greenland) | 30.28 | 769.2 | 30.33 | 770.3 | 36.3 | 2.4 | 84 | ENE | | | 2 | | 8 | | | | | | |
| Stykkisholm, (Iceland) | 30.29 | 769.4 | 30.34 | 770.5 | 35.1 | 1.7 | 100 | SE | | | 2 | | 8 | | | | | | |
| Thorshavn, (Faröe) | 30.10 | 764.5 | 30.13 | 765.4 | 30.0 | — 1.1 | 67 | N | | | 4 | | 10 | | | | | | |
| Vestervig | 29.34 | 745.3 | 29.51 | 749.6 | 40.6 | 4.8 | 84 | NW | | | 7 | | 8 | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.49 | 749.1 | 30.04 | 763.1 | 48.2 | 9 | 82 | NE | | | 1 | | 5 | | | 0 | 0 | Cloudy | Collignon, Director. |
| Amiens, Normal School | 29.33 | 757.6 | 29.94 | 760.4 | 48.2 | 9 | 81 | W | | | 2 | | 5 | | W | 0 | 0 | Cloudy | Bonvarne, Director. |
| Avignon, Normal School | 29.89 | 759.1 | 29.97 | 761.1 | 66.2 | 19 | 39 | N | | | 1 | | 0 | | | 0 | 0 | Very clear | Mr. Giraud, Director |
| Bar-sur-Seine | 29.41 | 746.9 | 29.97 | 761.2 | 47.8 | 8.8 | 69 | SW | | | 1 | | 10 | | | 0 | 0 | Covered | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 52.2 | 11.2 | 57 | WNW | | | 2 | | 10 | | WNW | 0 | 0 | Covered | Normal School. |
| Besançon | 29.12 | 739.6 | 30.02 | 762.4 | 51.8 | 11 | 65 | WNW | | | 3 | | 5 | | SW | 0 | 0 | Cloudy | Normal School. |
| Bourg-en-Bresse | 29.11 | 739.5 | 30.02 | 762.6 | 54.3 | 12.4 | 63 | W | | | 4 | | 2k | | W | 0 | 0 | Slightly cl'dy | Normal School. |
| Bourges, Normal School | 29.75 | 755.6 | 30.31 | 769.9 | 50.0 | 10 | 82 | NE | | | 2 | | 10 | | SW | 0 | 0 | Covered | A. Wagner, Director. |
| Brest, Naval Observatory | 29.73 | 755.2 | 29.95 | 760.8 | 54.5 | 12.5 | 63 | W | | | 2 | | 9 | | W | 0 | 0 | | The Staff. |
| Carcassonne, Normal School | 29.53 | 750.0 | 29.94 | 760.4 | 66.2 | 19 | 53 | W | | | 2 | | 0 | | | 0 | 0 | Clear. | Vateau, Director. |
| Caen | 29.88 | 759.0 | 29.96 | 760.9 | 44.6 | 7 | 97 | NW | | | 2 | | 10 | | | 0 | 0 | Covered | Normal School. |
| Chartres, Normal School | 29.36 | 745.7 | 29.93 | 760.2 | 51.8 | 11 | 83 | SW | | | 2 | | 10 | | | 0 | 0 | Covered | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.61 | 752.0 | 29.93 | 760.2 | 50.9 | 10.5 | 70 | NNE | | | 2 | | 5n | | NNE | 0.157 | 4.0 | Cloudy | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.56 | 725.3 | 29.89 | 759.1 | 60.8 | 16.0 | 32 | NE | | | 2 | | 2 | | W | 0 | 0 | Slightly cl'dy | Alluard, Director. |
| Commercy, Normal School | 29.08 | 738.6 | 29.97 | 761.3 | 47.5 | 8.6 | 67 | W | | | 4 | | 8 | | W | 0 | 0 | Very cloudy | Dr. Goulet, Director. |
| Commune de Grésque* | 28.96 | 733.0 | 30.00 | 762.0 | 63.9 | 17.7 | 41 | W | | | 2 | | 2 | | SW | 0 | 0 | ¼ covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 29.84 | 757.8 | 30.05 | 763.3 | 53.6 | 12.0 | 57 | N | | | 2 | | 10 | | | 0 | 0 | Covered | Mouillot, Director. |
| Le Mans, Normal School | 29.68 | 753.9 | 29.99 | 761.7 | 50.7 | 10.4 | 56 | NE | | | 2 | | 2 | | NNE | 0 | 0 | Slightly cl'dy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.98 | 736.2 | 29.91 | 759.8 | 51.1 | 10.6 | 59 | N | | | 2 | | 0 | | | 0 | 0 | Clear | Voudez, Director. |
| Lorient, Naval Observatory | 29.95 | 760.8 | 30.05 | 763.2 | 53.2 | 11.8 | 56 | S | | | 3 | | 5 | | S | 0 | 0 | ½ covered | T. Carré, Director. |
| Mâcon, Normal School | 29.30 | 744.3 | 29.97 | 761.1 | 50.9 | 10.5 | 80 | Calm | | | 0 | | 5 | | W | 0 | 0 | Cloudy | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | 28.90 | 734.1 | 29.95 | 760.8 | 50.5 | 10.3 | 48 | WNW | | | 2 | | 10 | | ESE | 0 | 0 | Covered | Normal School. |
| Nismes, Normal School | 29.76 | 756.0 | 29.97 | 761.1 | 70.9 | 21.6 | 37 | W | | | 1 | | 0 | | | 0 | 0 | Clear | Boyer, Director. |
| Orleans, Normal School | 29.54 | 750.4 | 29.93 | 760.2 | 49.3 | 9.6 | 71 | E | | | 1 | | 10 | | | 0 | 0 | Covered | Bernard, Director. |
| Paris, Observatory | 29.72 | 754.8 | 29.96 | 760.9 | 52.0 | 11.1 | 40 | W | | | 1 | | 5 | | W | 0 | 0 | Cloudy | National Observatory. |
| Privas | 28.91 | 734.3 | 29.98 | 761.5 | 53.6 | 12 | 44 | N | | | 2 | | 0 | | | 0 | 0 | Clear | Normal School |
| Puy de Dome (Summit) | | | | | | | | | | | | | | | | | | | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.09 | 761.9 | 30.03 | 762.7 | 60.1 | 15.6 | 66 | NE | | | 1 | | 2 | | NE | 0.08 | 2. | ¼ covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.88 | 759.0 | 29.97 | 761.2 | 46.9 | 8.3 | 82 | NNW | | | 1 | | 10 | | W | 0 | 0 | Covered | F. Lucard, Director. |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | M. H. Hercouet. |
| Tarbes, Normal School | 28.92 | 734.6 | 30.00 | 762.0 | 57.2 | 14 | 57 | SE | | | 2 | | 0 | | | 0 | 0 | Clear | T. Hugues, Director. |
| Villefranche | 29.28 | 743.8 | 30.00 | 761.9 | 56.3 | 13.5 | 58 | E | | | 1 | | 2 | | NNW | 0 | 0 | Slightly cl'dy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.82 | 757.3 | 29.84 | 758.0 | 79.5 | 26.4 | | | | | | | | | | 0.12 | 3. | | L'Abbé Marchési. |
| Lyons | | | 29.95 | 760.8 | 55.8 | 13.2 | | | | | | | 2 | | | 0 | 0 | Clear | M. Jeys. |
| Marseilles, Observatory | | | 29.94 | 760.5 | 61.9 | 16.6 | 56 | WSW | | | 1–2 | | 0 | | | 0 | 0 | | The Staff. |
| Mont-Louis | 24.80 | 629.8 | 30.11 | 764.8 | 48.2 | 9.0 | 42 | SE | 13.0 | 5.83 | | | 0 | | | 0 | 0 | | Mr. Falguère. |
| Nice | 29.88 | 759.0 | 29.96 | 761.0 | 60.8 | 16.0 | 81 | SW | | | 3 | | 1 | | SW | 0 | 0 | Clear | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.67 | 753.6 | 29.95 | 760.6 | 54.0 | 12.2 | 40 | W | | | 2 | | 4 | | WNW | 0 | 0 | | Marié Davy, Director |
| Perpignan | | | 29.96 | 761.0 | 61.2 | 16.2 | 52 | SE | 5.6 | 2.50 | | | 0 | | | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.43 | 569.7 | | | 40.6 | 4.8 | | WNW | | | 1 | | 0 | | | 0 | 0 | Clear | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.79 | 756.6 | 29.95 | 760.8 | 55.6 | 13.1 | 89 | W | | | 1 | | 7 | | WNW | 0.220 | 5.6 | Raining | E. Renou. |
| Toulouse, Observatory | 29.28 | 743.8 | 30.00 | 762.1 | 57.4 | 14.1 | 50 | N | | | 1 | | | | | 0.061 | 1.55 | | The Staff. |
| Tours | 29.79 | 756.6 | 29.98 | 761.6 | 54.0 | 12.2 | 59 | WNW | | | 1 | | 10 | | W | 0 | 0 | | C. Marquet. |
| Versailles, (near Paris) | | | 29.95 | 760.6 | 53.2 | 11.8 | 45 | NW | | | 1 | | 6 | | | 0 | 0 | Cloudy | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.24 | 768.1 | 30.27 | 768.8 | 46.6 | 8.1 | 88 | SE | 8.3 | 3.7 | | | 0 | | | 0 | 0 | Clear | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferraud, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 29.55 | 750.6 | 29.72 | 754.9 | 43.7 | 6.5 | 63 | NW | | | 3 | | 7 | | | 0.036 | 0.91 | | Prof. Arndt. |
| Breslau | 29.24 | 742.6 | 29.76 | 756.0 | 34.3 | 1.3 | 100 | NW | | | 4 | | 0 | | | 0.069 | 1.49 | | Royal University Obs'y |
| Carlsruhe | 29.47 | 748.5 | 29.90 | 759.4 | 49.8 | 9.9 | 52 | SW | | | 3 | | 10 | | | 0 | 0 | | Albert Senz. |
| Cassel | 29.25 | 742.9 | 29.85 | 758.2 | 43.2 | 6.2 | 79 | NNW | | | 4 | | 10 | WNW | | 0.075 | 1.90 | | Dr. H. Möhl. |
| Crefeld | 29.72 | 755.0 | 29.89 | 759.1 | 41.9 | 5.5 | 66 | N | | | 5 | | 7 | | | 0.04 | 1. | | Director Lose. |
| Emden | 29.94 | 760.4 | 29.97 | 761.3 | 41.9 | 5.5 | 58 | NW | | | 2 | | 1 | | | 0.024 | 0.6 | | Prof. Prestel. |
| Frankfort on the Main | 29.56 | 750.9 | 29.93 | 760.3 | 44.6 | 7 | 70 | W | | | 1 | | 10 | | | 0.008 | 0.2 | Raining | Physical Society. |
| Friedrichshafen | 28.51 | 724.1 | 29.96 | 760.9 | 48.2 | 9.0 | 77 | S | | | 2 | | 8 | SW | | 0.563 | 14.3 | | M. Wilhelm. |
| Hamburg | 29.65 | 753.2 | 29.72 | 755.0 | 40.3 | 4.6 | 45 | NW | | | 6 | | 4k | | | 0.094 | 2.4 | Squally | Captain F. Hegemann. |
| Kiel | 29.63 | 752.7 | 29.65 | 753.1 | 40.6 | 4.8 | 55 | W | | | 7 | | 2 | | | 0.062 | 1.58 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.39 | 746.5 | 29.47 | 748.5 | 38.3 | 3.5 | 61 | W | | | | | | | | 0.055 | 1.40 | Fair | Prof. E. Luther. |
| Köslin | | | 29.51 | 749.6 | 38.5 | 3.6 | | W | | | 6 | | 2 | | | 0.071 | 1.8 | | H. Müller. |
| Leipsic, Observatory | 29.43 | 747.4 | 29.86 | 758.4 | 38.5 | 3.6 | 82 | NW | | | 3 | | 10 | NW | | 0.031 | 0.8 | Light snow | Prof. Bruhns. |
| Memel, Naval School | 29.34 | 745.2 | 29.38 | 746.3 | 37.6 | 3.1 | 71 | SW | | | 8 | | 10ks | | | | | | Reinbrecht von Skalweit. |
| Neufahrwasser | 29.49 | 749.0 | 29.50 | 749.4 | 40.1 | 4.5 | 57 | W | | | 5 | | 4 | | | 0.055 | 1.4 | | A. Lothes. |
| Posen | 29.72 | 754.9 | 30.02 | 762.5 | 41.4 | 4.2 | 54 | NW | | | 5 | | 4 | | | 0.038 | 0.96 | Fair | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.40 | 746.7 | 29.95 | 760.7 | 52.0 | 11.1 | 46 | SW | | | 1 | | 9 | | | 0 | 0 | | Dr. Schur. |
| Stuttgart | 28.97 | 735.7 | 29.91 | 759.8 | 49.1 | 9.5 | 51 | W | | | 2 | | 8 | NW | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | 29.29 | 744.0 | 29.81 | 757.2 | 46.4 | 8.0 | 73 | W | | | 5 | | 10 | | | 0.178 | 4.51 | Foggy | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.37 | 720.6 | 29.90 | 759.4 | 43.9 | 6.6 | 68 | W | 7 | 3 | | | 10 | | WNW | 0 | 0 | Covered | Dr. Von Bebber. |
| Wustrow, Naval School | 29.63 | 752.6 | 29.66 | 753.4 | 34.5 | 1.4 | 91 | WNW | | | 5 | | 7 | | | | | Snowing | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.66 | 753.4 | 30.06 | 763.5 | 54.3 | 12.4 | | W | | | 2.0 | | | | | | | Clear | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.94 | 760.5 | 29.99 | 761.8 | 81.0 | 27.2 | 69 | WSW | 22.07 | 9.87 | | | 10 | | | 0 | 0 | Overcast | |
| Deesa | 29.51 | 749.6 | 29.98 | 761.4 | 95.8 | 35.4 | 23 | Calm | | | | | 7 | W | | 0 | 0 | D. clouds | |
| Bombay | 29.86 | 758.5 | 29.90 | 759.4 | 85.7 | 29.8 | 58 | NNW | 28.0 | 12.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.90 | 708.8 | 29.86 | 758.4 | 92.3 | 33.5 | 30 | E | | | | | 5 | | NE | 0 | 0 | Dust-whirl | |
| Lahore | 29.24 | 742.8 | 29.99 | 761.7 | 84.0 | 28.9 | 31 | N | 4.5 | 2.0 | | | 8 | | | 0 | 0 | Cloudy | |
| Belgaum | 27.40 | 696.0 | 29.88 | 758.9 | 90.0 | 32.2 | 34 | E | 3.0 | 1.3 | | | 6 | N | N | 0 | 0 | D. clouds | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 29.03 | 737.3 | 29.93 | 760.1 | 81.8 | 27.7 | 30 | NW | 1.8 | 0.8 | | | 2 | | | 0 | 0 | | |
| Agra | 29.41 | 747.0 | 29.96 | 761.1 | 91.7 | 33.2 | 19 | NW | | | | | | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.87 | 733.4 | 29.89 | 759.2 | 94.6 | 34.7 | 22 | Calm | 3.0 | 1.3 | | | | | | 0 | 0 | Blue sky | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.56 | 750.9 | 29.93 | 760.3 | 84.3 | 29.1 | 54 | W | 3.3 | 1.5 | | | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.61 | 752.1 | 29.92 | 759.9 | 88.7 | 31.5 | 30 | Calm | 1.9 | 0.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.72 | 754.9 | 29.90 | 759.4 | 87.2 | 30.7 | 19 | W | 2.1 | 0.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.94 | 709.6 | 29.94 | 760.5 | 82.3 | 27.9 | 21 | WNW | 8.9 | 4.0 | | | 02 | | | 0.02 | 0.5 | Drizzling? | |
| Cuttack | 29.85 | 758.3 | 29.93 | 760.3 | 89.1 | 31.7 | 56 | SSW | 1.9 | 0.8 | | | 4 | | | 0 | 0 | D. clouds | |
| Calcutta (Alipore) | 29.93 | 760.3 | 29.96 | 760.8 | 82.9 | 28.3 | 49 | W | 4.0 | 1.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.55 | 750.4 | 29.94 | 760.4 | 80.4 | 26.9 | 37 | Calm | 3.2 | 1.4 | | | 1 | | | 0 | 0 | D. clouds | |
| Chittagong | 29.88 | 758.9 | 29.97 | 761.3 | 81.9 | 27.7 | 87 | WSW | 5.5 | 2.5 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.64 | 752.8 | 29.98 | 761.4 | 74.9 | 23.8 | 68 | ENE | 1.0 | 0.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.63 | 727.1 | 29.97 | 761.3 | 90.0 | 32.2 | 29 | NW | 3.9 | 1.7 | | | | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.52 | 749.9 | 29.94 | 760.5 | 52.0 | 11.1 | 41 | NE | 0.7 | 0.3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 29.82 | 757.5 | 29.93 | 760.3 | 53.2 | 11.8 | 48 | NW | 1.3 | 0.6 | ..... | ..... | 10 | W | ..... | 0 | 0 | ..... | Prof. Pott. Lorenzoni |
| Vicenza | 29.78 | 756.1 | 29.93 | 760.1 | 53.1 | 11.7 | 43 | E | 2.5 | 1.1 | ..... | ..... | 6 | W | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.61 | 726.6 | 29.94 | 760.5 | 50.4 | 10.2 | 50 | SW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.44 | 747.7 | 29.97 | 761.1 | 57.4 | 14.1 | ..... | N | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.157 | 4.0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.02 | 737.1 | 29.94 | 760.4 | 55.0 | 12.8 | 47 | ENE | 4.9 | 2.2 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 27.99 | 711.0 | 29.93 | 760.1 | 52.8 | 11.3 | 42 | NW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.75 | 755.6 | 29.97 | 761.3 | 57.2 | 14.0 | 68 | SW | ..... | ..... | 4 | ..... | 5 | SW | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.82 | 757.3 | 30.00 | 761.9 | 56.3 | 13.5 | 64 | S | 8.1 | 3.6 | ..... | ..... | 10 | SE | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.65 | 753.1 | 29.97 | 761.3 | 55.8 | 13.2 | 52 | NNW | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.73 | 755.2 | 29.99 | 761.8 | 60.8 | 16.0 | 57 | W | ..... | ..... | 2 | ..... | 9 | SW | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 29.94 | 760.4 | 30.02 | 762.6 | 57.6 | 14.2 | 76 | W | 11.2 | 5.0 | ..... | ..... | 4 | S | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 29.99 | 761.7 | 30.04 | 763.0 | 53.8 | 12.1 | 77 | N | 12.5 | 5.6 | ..... | ..... | 1 | SW | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.43 | 722.2 | 30.00 | 762.0 | 53.2 | 11.8 | 56 | SW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.94 | 760.5 | 30.06 | 763.4 | 60.8 | 16.0 | 67 | SSE | ..... | ..... | 4 | ..... | 4 | SSE | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.89 | 759.3 | 30.07 | 763.8 | 58.3 | 14.6 | 52 | SW | 5.6 | 2.5 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U. | 29.92 | 759.9 | 30.12 | 765.0 | 59.7 | 15.4 | 53 | SW | ..... | ..... | 4 | ..... | 6 | NW | ..... | 0.012 | 0.3 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 52.7 | 11.5 | 60 | NNW | 4.9 | 2.2 | ..... | ..... | 3 | NNW | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.82 | 757.5 | 30.02 | 762.4 | 60.8 | 16.0 | 67 | SW | ..... | ..... | 2 | ..... | 8 | SW | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.21 | 741.9 | 30.10 | 764.6 | 56.5 | 13.6 | 71 | SW | 8.1 | 3 6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.80 | 756.9 | 30.06 | 763.4 | 56.1 | 13.4 | 70 | E | 2.5 | 1.1 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.98 | 761.6 | 30.06 | 763.5 | 62.2 | 16.8 | 62 | SE | ..... | ..... | 4 | ..... | 6 | SW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.56 | 750.7 | 30.11 | 764.8 | 53.1 | 11.7 | 65 | SSW | 5.6 | 2.5 | ..... | ..... | 6 | W | ..... | 0.079 | 2.0 | ..... | Prof. F. Brioschi |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.7 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 30.22 | 767.6 | 30.29 | 769.3 | 40.7 | 4.8 | 78 | SSW | 4.0 | 1.8 | ..... | 0 | 7s | ..... | ..... | 0 | 0 | Cloudy | The Observatory. |
| Tokei (Yeddo) University | 30.17 | 766.3 | 30.27 | 768.8 | 43.6 | 6.4 | 70 | S | 3 | 1.3 | ..... | ..... | 4s | ..... | ..... | 0 | 0 | Fair | Prof. P. V. Veeder. |

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Castillo, A. E. |
| Guadalajara | 25.03 | 635.8 | 30.09 | 764.3 | 44.6 | 7.0 | 57 | SW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Blue sky | Prof. L. Perez. |
| Guanajuato | 23.67 | 601.2 | 29.93 | 760.2 | 57.2 | 14.0 | 58 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 52.3 | 11.3 | 57 | Calm | 0 | 0 | ..... | 0 | 1ks | ..... | ..... | 0 | 0 | Clear | Prof. M. Leal. |
| Mexico | 23.10 | 586.6 | 30.23 | 767.7 | 50.9 | 10.5 | 61 | Calm | 0 | 0 | ..... | 0 | 2s | ..... | ..... | 0 | 0 | Clear | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 42.6 | 5.9 | 56 | W | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | M. V. de Leon, M. E. |
| Puebla | 23.33 | 592.6 | 30.09 | 764.5 | 41.5 | 5.3 | 79 | E | ..... | ..... | ..... | 5ks | 5kn | ..... | W | 0 | 0 | Covered | Prof. B. Gonzales. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 30.10? | 764.0 | 30.09 | 764.3 | 64.4 | 18.0 | 86 | S | 1.8 | 0.8 | ..... | 8ck | 0 | SW | ..... | 0 | 0 | Cloudy | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 30.10 | 764.4 | 30.13 | 765.1 | 68.0 | 20.0 | 72 | NW | ..... | ..... | ..... | 2c | 3s | ..... | ..... | 0 | 0 | ½ cloudy | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 46.4 | 8.0 | 60 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Spina. [M. M. D. D. |
| Morelia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Tena, F. L. Param. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.95 | 760.6 | 29.95 | 760.6 | 42.1 | 5.6 | ..... | N | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 30.49? | 774.4? | 30.51? | 775.8? | ..... | ..... | ..... | NW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.055 | 1.4 | ..... | |
| Helder | 29.88 | 758.9 | 29.88 | 758.9 | 39.2 | 4.0 | ..... | WNW | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0.016 | 0.4 | ..... | |
| Hellevoetsluis | 29.93 | 760.2 | 29.93 | 760.2 | 40.1 | 4.5 | 83 | WNW | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.83 | 757.7 | 29.92 | 759.9 | 44.1 | 6.7 | 66 | NW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0.055 | 1.4 | Very cloudy | H. v d Brink. |

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.50 | 749.3 | 29.56 | 750.7 | 36.7 | 2.6 | 68 | NNW | 27.3 | 12.2 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.27 | 743.4 | 29.31 | 744.4 | 34.5 | 1.4 | 74 | NNW | 13 | 8 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.17 | 740.9 | 29.32 | 744.6 | 43.0 | 6.1 | 22 | NNE | 20 | 9 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.36 | 745.7 | 29.40 | 746.8 | 31.3 | — 0.4 | 70 | NE | 7 | 3 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.76 | 755.8 | 29.95 | 760.7 | 59.0 | 15.0 | 93 | S | 11.9 | 5.3 | ..... | ..... | 10 | ..... | ..... | 1.024 | 26.0 | Raining ..... | Dr. J. A. Sampaio |
| Campo Major | 29.12 | 739.7 | 30.16 | 766.0 | 58.1 | 14.5 | 46 | WNW | 16.8 | 7.5 | ..... | ..... | 7 | WNW | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.21 | 767.4 | 30.30 | 769.6 | 63.9 | 17.7 | 53 | SE | 2.5 | 1.1 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.84 | 757.9 | 30.20 | 767.1 | 57.6 | 14.2 | 69 | WSW | 17.4 | 7.8 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 29.98 | 761.8 | 30.07 | 763.8 | 59.0 | 15.0 | 93 | SSW | 21.7 | 9.7 | ..... | ..... | 10 | ..... | ..... | 0.047 | 1.2 | Light rain... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols: the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.77 | 756.1 | 29.77 | 756.2 | 89.6 | 32.0 | ..... | ESE | ..... | ..... | 2 | ..... | 2 | ..... | ESE | 1 | ..... | Blue sky..... | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Sado, rto Praya, Cape Verde Islands | 30.12* | 765.0* | 30.13* | 765.3* | 75.2 | 24.0 | ..... | NE | ..... | ..... | 5 | ..... | 3 | ..... | NE | 3 | NE | D. clouds..... | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.77 | 756.1 | 29.77 | 756.2 | ..... | ..... | ..... | W | ..... | ..... | 2 | ..... | 1 | ..... | W | 1 | ..... | Blue sky..... | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreina, dos Anas, Com' |

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.20 | 741.7 | 29.63 | 752.6 | 40.5 | 4.7 | 73 | WNW | 18 | 8 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.07 | 738.4 | 29.50 | 749.3 | 36.9 | 2.7 | 60 | WSW | 2 | 1 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Heavy clouds... | Astronomical Obs. |
| Dorpat | 28.91 | 734 3 | 29.15 | 740.5 | 35.1 | 1.7 | 77 | SW | 18 | 8 | ..... | ..... | 3k | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.09 | 738.9 | 29.11 | 739.3 | 35.4 | 1.9 | 88 | SW | 9 | 4 | ..... | ..... | 9n;ks | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 28.57 | 725.6 | 28.89 | 733 8 | 31.6 | — 0.2 | 100 | SW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Ch. Forsten. |
| Kieff | 29.02 | 737.1 | 29.65 | 753.2 | 37.8 | 3.2 | 70 | W | 4 | 2 | ..... | ..... | 3c | ..... | ..... | ..... | ..... | Light clouds | Physical Cabinet |
| Nikolaiev | 29.72 | 755.0 | 29.80 | 756.8 | 35.8 | 2.1 | 94 | N | 4 | 2 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.74 | 755.5 | 29.76 | 756.0 | 45.7 | 7.6 | 72 | NE | 2 | 1 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.00 | 736.7 | 29.56 | 750.9 | 38.8 | 3.8 | 68 | S | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.38 | 746.3 | 29.59 | 751.6 | 38.3 | 3.5 | 77 | W | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.18 | 741.2 | 29.20 | 741 7 | 32.7 | 0.4 | 85 | ESE | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.29 | 718.5 | 29.71 | 754.7 | 47.1 | 8.4 | 38 | NW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 29.71 | 754.5 | 29.62 | 752.4 | 40.6 | 4.8 | 82 | WNW | 9 | 4 | ..... | ..... | 10n | ..... | ..... | Blank | Blank | ..... | Sebastianof. |
| Kasan | 29.26 | 743.2 | 29.53 | 750.1 | 38.8 | 3.8 | 55 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.50 | 723.8 | 29.45 | 748.0 | 36.5 | 2.5 | 54 | NE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.53 | 750.1 | 29.76 | 756.0 | 56.8 | 13.8 | 76 | NW | 16 | 7 | ..... | ..... | 7n | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.37 | 720.5 | 30.08 | 763.9 | 54.1 | 12.3 | 82 | NE | 4 | 2 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.08 | 738.7 | 29.62 | 752.3 | 33.6 | 1.9 | 95 | S | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs |
| Yeniseisk | 29.27 | 743.5 | 29.61 | 752.0 | 28.0 | — 2.2 | 82 | SE | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Krotkowo* | 29.03 | 737.4 | 29.51 | 749.5 | 40.6 | 4.8 | 55 | NE | 7 | 3 | ..... | ..... | 1s | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Peking, (China) | 29.80 | 756.8 | 29.94 | 760.4 | 44.8 | 7.1 | 42 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.49 | 698.2 | 29.63 | 752.7 | 21.2 | — 6.0 | 71 | Calm | 0 | 0 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 4.6 | —15.2 | 77 | E | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light clouds | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.5 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | ..... | ..... | 29.87 | 758.8 | 57.2 | 14 | 66 | S | 4.2 | 1.89 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.99 | 761.8 | 30.05 | 763.2 | 61.9 | 16.6 | 59 | W | 2.9 | 1.28 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.06 | 687.2 | ..... | ..... | 60.8 | 16.0 | 58 | SW | 3.2 | 1.44 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.78 | 705.7 | 29.98 | 761.4 | 64.0 | 17.8 | 37 | SW | 14.2 | 6.33 | ..... | 0 | 1 | ..... | ..... | 0 | 0 | Almost clear | The Staff. |
| Murcia, Met. Obs'y | 29.89 | 759.1 | 30.04 | 762.9 | 72.0 | 22.2 | 34 | S | 2.1 | 0.96 | ..... | 0 | 3 | ..... | ..... | 0 | 0 | Almost clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.15 | 740.4 | 30.05 | 763.3 | 54.9 | 12.7 | 79 | SSW | 17.4 | 7.78 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Covered ..... | R. Gil Villanueva, Dir. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.83 | 757.7 | 29.90 | 759.4 | 68.7 | 20.4 | 86 | SSW | 5.4 | 2.4 | ..... | 5c | 3k | W | W | 0.106 | 2.7 | Fair..... | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 30.12 | 764.9 | 30.22 | 767 5 | 59.9 | 15.5 | 66 | W | 16.7 | 7.4 | ..... | 2 | 3 | WNW | W | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.90 | 759.4 | 29.99 | 761.7 | 81.0 | 27.2 | 81 | SE | 1.1 | 0.50 | ..... | 3cs | 2k | SE | SE | 0 | 0 | Clear..... | Leonardo de Tejeda, Chief of Engineers. |

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft. The barometer readings at Barcelona are published as given.

## SWEDISH SERIES.



Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.10 | 739.2 | 29.14 | 740.2 | 28.4 | — 2.0 | ..... | NNE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.07 | 738.3 | 29.12 | 739.6 | 30.9 | — 0.6 | 66 | NE | ..... | ..... | 6 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.04 | 737.6 | 29.09 | 738 9 | 34.9 | 1.6 | 59 | NNE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0.024 | 0.6 | ..... | |
| Stockholm | 28.82 | 731.9 | 28.99 | 736.4 | 32.0 | 0.0 | 89 | NW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.055 | 1.4 | ..... | |
| Wisby | 29.13 | 739.9 | 29.19 | 741 4 | 34.5 | 1.4 | 72 | NW | ..... | ..... | 7 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 28.96 | 735.5 | 29.03 | 737.4 | 31.1 | — 0.5 | 89 | NNW | 21.3 | 9.5 | ..... | ..... | 10 | ..... | ..... | 0.066 | 1.67 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.50 | 723.9 | 29.92 | 759.9 | 57.6 | 14.2 | 46 | WSW | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| Zurich | 28.32 | 719.3 | 29.98 | 761.4 | 48.2 | 9.0 | 70 | NE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.322 | 8.2 | Cloudy | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —0.6 mm.; Thermometer, +5.6 cent.; Relative Humidity, —14 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.00 | 762.1 | 46.4 | 8.0 | 65 | SW | 7 | 9.0 | ..... | ..... | 10 | ..... | NW | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 30.05 | 763.3 | 53.1 | 11.7 | ..... | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | B. Stefanides. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | Imperial Observatory. |
| Beirut, (Syria.) Lee Obs'y | 29.78 | 756.4 | 29.90 | 759.4 | 59.5 | 15.3 | 57 | W | ..... | ..... | 4 | ..... | 6ks | ..... | W | 0.763 | 19.43 | D. clouds | Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.85 | 758.2 | 29.92 | 760.0 | 9.7 | —12.4 | 66 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | ..... | ..... | Fine | Hon. J. Ferguson. |
| Brockville, Ontario | 29.96 | 761.0 | 30.29 | 769.4 | 24 | — 4.4 | ..... | NW | 1 | 0.4 | ..... | ..... | 8s | ..... | NW | 0 | 0 | Cloudy. | W. R. Bigg. |
| *Chatham, N B | 29.88 | 758.9 | 29.95 | 760.7 | 10 | —12.2 | 81 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | G. A. Blair. |
| Charlottetown, P. E. Island | 29.83 | 757.7 | 29.88 | 758.9 | 15 | — 9.4 | 68 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | H. J. Cundall, C. E. |
| Cornwall, Ontario | 30.01 | 762.2 | 30.22 | 767.6 | 20.9 | — 6.2 | 60 | N | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | James Smith, M. A. |
| Dalhousie, N. B | 29.84 | 757.9 | 29.87 | 758.7 | 8.2 | —13.2 | 93 | W | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | Clear | H. A. Johnson. |
| Esquimault, B. C | 30.00 | 762.0 | 30.05 | 763.3 | 46.3 | 7.4 | 100 | NE | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Frosty | W. H. Bevis. |
| *Father Point, Quebec | ..... | ..... | 30.09 | 764.3 | 8 | —13.3 | 67 | N | 19 | 8.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | J. McWilliams. |
| Fredericton, N. B | 30.00 | 762.0 | 30.07 | 763.8 | 11.3 | —11.5 | 70 | W | 10 | 4.5 | ..... | 4ck | 0 | NW | ..... | 0 | 0 | Fair | Prof. Harrison. |
| *Fort Garry Manitoba | 29.14 | 740.1 | 30.00 | 762.0 | 33 | 0.6 | 94 | S | 8 | 3.6 | ..... | 0 | 2krs | ..... | S | 0 | 0 | Fair | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 29.09 | 738.9 | 30.24 | 768.1 | 32 | 0.0 | 100 | Calm | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Grant. |
| *Halifax, N. S | 29.80 | 756.9 | 29.94 | 760.5 | 19 | — 7.2 | 78 | W | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Foggy | F. Allison, M. A. |
| Hamilton, Ontario | 29.89 | 759.2 | 30.28 | 768.8 | 34.7 | 1.5 | 89 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.33 | 745.0 | 29.36 | 745.7 | 21 | — 6.1 | 85 | W | ..... | ..... | 1 | 10cs | ..... | ..... | ..... | 0 | 0 | Cloudy | E. Weedon. |
| *Kingston, Ontario | 29.80 | 759.2 | 30.25 | 768.3 | 27 | — 2.8 | 92 | NE | 1 | 0.4 | ..... | 5 | 3ks | ..... | W | 0.40 | 10.2 | Cloudy | S. Woods, M. A. |
| Little Glace Bay, N. S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 10 | 4.5 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | C. H. Rigby. |
| *Montreal, Quebec | 30.01 | 762.2 | 30.22 | 767.6 | 20 | — 6.7 | 55 | Calm | 0 | 0 | ..... | 4k | 0 | NW | ..... | 0 | 0 | Blustering | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.53 | 750.0 | 30.27 | 768.8 | 23 | — 5.0 | 87 | E | 3 | 1.3 | ..... | 0 | Sm'o | ..... | ..... | 0 | 0 | Clear | Rev. R. Mosley. |
| Peterboro, Ontario | 29.47 | 748.5 | 30.25 | 768 3 | 31.9 | — 0.1 | 75 | W | ..... | ..... | ..... | 2cs | 2ks | NE | NE | 0 | 0 | Fair | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.55 | 750.6 | 30.27 | 768.8 | 32 | 0.0 | 90 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Bright | H. Morgan. |
| Port Hastings, N. S | 29.77 | 756.1 | 29.82 | 757.4 | 16.9 | — 8.4 | ..... | NW | 12 | 5.4 | ..... | 8k | 0 | N | ..... | 0.02 | 0.5 | Fair | Peter Grant. |
| Port Stanley, Ontario | 29.58 | 751.3 | 30.26 | 768.6 | 32 | 0.0 | 97 | NW | 1 | 0.4 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | M. Payne. |
| *Quebec, Quebec | 29.83 | 757.7 | 30.19 | 766.8 | 6 | —14.4 | 52 | W | ..... | ..... | ..... | ..... | ..... | Fog | ..... | ..... | ..... | Foggy | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.77 | 756.1 | 30.26 | 768.6 | 21 | — 6.1 | 85 | Calm | 1 | 0 | ..... | ..... | ..... | ..... | NW | 0 | 0 | Clear | W. H. McIntyre. |
| St. Andrews, N. B | 30.03 | 762.7 | 30.08 | 764.0 | 15 | — 9.4 | 69 | NW | 0 | 0 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair | Dr. Grove. |
| St. John, N. B | 29.88 | 758.9 | 30.00 | 762.0 | 13 | —10.6 | 90 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.51 | 749.5 | 30.20 | 767.6 | 29 | — 1.7 | 80 | Calm | 6 | 2.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | K. Stewart. |
| Stayner, Ontario | 29.45 | 748.0 | 30.27 | 768.8 | 32 | 0.0 | 85 | Calm | 0 | 0 | ..... | 5cs | 0 | ..... | ..... | 0 | 0 | Fair | R. J. Cole. |
| Stratford, Ontario | 29.89 | 759.3 | 30.27 | 768.8 | 32 | 0.0 | 85 | Calm | 0 | 0 | ..... | 8k | 0 | Calm | ..... | 0.03 | 0.8 | Cloudy | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.89 | 733.8 | 30.23 | 767.8 | 32.2 | 0.1 | 97 | NW | 2 | 0.9 | ..... | ..... | 10 | ..... | ..... | 0.05 | 1.3 | Foggy | T. C. Hill. |
| *Toronto, Ontario | 29.75 | 755.6 | 29.78 | 756.4 | 16 | — 8.9 | 62 | W | 18 | 8.0 | ..... | 0 | 8ks | ..... | NW | Inap. | Inap. | Fair | Magnetic Observatory. |
| Windsor, N. S | 29.88 | 758.9 | 30.26 | 769.1 | 34 | 1.1 | 78 | S | 1 | 0.4 | ..... | ..... | 10ks | ..... | NW | Inap | Inap. | Cloudy | Prof. John E. Oram. |
| Woodstock, Ontario | 29.87 | 758.7 | 29.96 | 761.0 | 17.5 | — 8.1 | 92 | NW | 14 | 6.3 | ..... | 1cs | 0 | ..... | ..... | 0 | 0 | Clear | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 29.0 | — 5.0 | ..... | SW | ..... | ..... | ..... | 5 | 5n | ..... | ..... | 0.70 | 17.8 | Overcast | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | Millimeters. | Reduced to sea-level. Inches. | Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | Velocity. Miles per hour. | Meters per second. | Force. 0–10. | CLOUDS. Amount. Up'er 0–10 | Low'r 0–10. | Direction. Upper. From— | Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.97 | 761.2 | 30.21 | 767.3 | 29 | — 1.7 | 67 | N | 2 | 0.9 | ..... | 1cs | 0 | W | ..... | 0 | 0 | Clear | |
| Alpena, Michigan | 29.56 | 750.8 | 30.24 | 768.1 | 33 | 0.6 | 79 | NE | 3 | 1.3 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Atlantic City, New Jersey | 30.17 | 766.3 | 30.19 | 766.8 | 41 | 5.0 | 65 | N | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Augusta, Georgia | 29.85 | 758.2 | 30.04 | 763.0 | 55 | 12.8 | 80 | NW | 1 | 0.4 | ..... | 5c;ck | Sm'e | W;NW | Calm | 0 | 0 | Fair | |
| Baltimore, Maryland | 30.15 | 765.8 | 30.20 | 767.1 | 44 | 6.7 | 84 | E | 3 | 1.3 | ..... | 2ck | 2ks | NW | E | Inap. | Inap. | Fair | |
| Barnegat, New Jersey | 30.18 | 766.6 | 30.21 | 767.3 | 39 | 3.9 | 72 | NE | 16 | 7.2 | ..... | 5k | 0 | N | ..... | 0 | 0 | Fair | |
| Bismarck, Dakota | 28.13 | 714.5 | 29.99 | 761.7 | 39 | 3.9 | 82 | SE | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boise City, Idaho | 27.08 | 687.8 | 29.96 | 761.0 | 47 | 8.3 | 77 | Calm | 0 | 0 | ..... | 2k | 2s | Calm | Calm | Inap. | Inap. | Fair | |
| Boston, Massachusetts | 30.02 | 762.5 | 30.19 | 766.8 | 28 | — 2.2 | 32 | NW | 11 | 4.9 | ..... | 1c | Haze | NW | ..... | 0 | 0 | Clear | |
| Brackettville, Texas | 28.89 | 733.8 | 29.94 | 760.5 | 47 | 8.3 | 77 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 29.03 | 737.3 | 30.06 | 763.5 | 34 | 1.1 | 100 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Brownsville, Texas | 30.05 | 763.3 | 30.12 | 765.0 | 61 | 16.1 | 83 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 29.40 | 749.0 | 30.22 | 767.6 | 34 | 1.1 | 90 | NE | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 61 | 16.1 | 50 | W | ..... | ..... | ..... | 8cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Burlington, Vermont | 29.95 | 760.7 | 30.23 | 767.8 | 20 | — 6.7 | 55 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cairo, Illinois | 29.59 | 754.1 | 30.08 | 764.0 | 56 | 13.3 | 75 | N | 4 | 1.8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Camp Grant, Arizona | 25.14 | 638.5 | 29.94 | 760.5 | 67 | 18.9 | 41 | E | ..... | ..... | 1 | 10ck | 0 | Calm | ..... | 0 | 0 | Fair | |
| Camp Verde, Arizona | 26.61 | 675.9 | 30.11 | 764.5 | 58 | 14.4 | 37 | E | ..... | ..... | ..... | 10c | 0 | SE | ..... | 0 | 0 | Cloudy | |
| Camp ——, California | 27.35 | 694.7 | 29.92 | 760.0 | 45 | 7.2 | 100 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | W | Inap. | Inap. | Fair | |
| Cape Hatteras, N. Carolina | 30.05 | 763.3 | 30.04 | 763.5 | 50 | 10.0 | 100 | NE | 18 | 8.0 | ..... | 2ck | 8s | SW | Calm | 0 | 0 | Cloudy | |
| Cape Henry, Virginia | 30.12 | 765.0 | 30.14 | 765.5 | 45 | 7.2 | 76 | NE | 28 | 12.5 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Cape Lookout, N. Carolina | 30.04 | 763.0 | 30.05 | 763.3 | 55 | 12.8 | 93 | NE | 15 | 6.7 | ..... | 10cs | Haze | W | ..... | 0 | 0 | Cloudy | |
| Cape May, New Jersey | 30.16 | 766.1 | 30.19 | 766.8 | 43 | 6.1 | 66 | NE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 29.96 | 761.0 | 30.02 | 762.5 | 62 | 16.7 | 83 | NE | 4 | 1.8 | ..... | 8c;cs | 0 | SW;Calm | ..... | 0 | 0 | Fair | |
| Cheyenne, Wyoming | 24.05 | 610.9 | 29.99 | 761.7 | 30 | — 1.1 | 78 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.48 | 748.8 | 30.20 | 767.1 | 38 | 3.3 | 91 | E | 4 | 1.8 | ..... | ..... | Fog | ..... | ..... | 0.08 | 2.0 | Foggy | |
| Cincinnati, Ohio | 29.49 | 749.0 | 30.15 | 765.8 | 40 | 4.4 | 82 | NE | 8 | 3.6 | ..... | 0 | Fog | ..... | Calm | Inap. | Inap. | Clear | |
| Cleveland, Ohio | 29.52 | 749.8 | 30.28 | 769.1 | 33 | 0.6 | 89 | SE | 2 | 0.9 | ..... | ..... | 10s;fg | ..... | Calm | 0.12 | 3.0 | Cloudy | |
| Concho, Texas | 28.11 | 714.0 | 29.81 | 757.1 | 40 | 4.4 | 26 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.56 | 750.8 | 30.03 | 762.7 | 53 | 11.7 | 73 | Calm | 0 | 0 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear | |
| Davenport, Iowa | 29.56 | 750.8 | 30.22 | 767.6 | 39 | 3.9 | 82 | E | 8 | 3.6 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Deadwood, Dakota | 25.38 | 644.6 | ..... | ..... | 34 | 1.1 | 79 | Calm | 0 | 0 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Denison, Texas | 29.26 | 743.2 | 30.04 | 763.0 | 65 | 18.3 | 44 | NE | 4 | 1.8 | ..... | ..... | 10ks | ..... | SW | 0.02 | 0.5 | Cloudy | |
| Denver, Colorado | 24.80 | 629.9 | 30.02 | 762.5 | 37 | 2.8 | 63 | S | 2 | 0.9 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Detroit, Michigan | 29.53 | 750.0 | 30.23 | 767.8 | 35 | 1.7 | 90 | W | 2 | 0.9 | ..... | ..... | 10s;fg | ..... | Calm | Inap. | Inap. | Cloudy | |
| Dodge City, Kansas | 27.52 | 699.0 | 29.86 | 758.4 | 42 | 5.6 | 92 | SE | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Dubuque, Iowa | 29.50 | 749.3 | 30.21 | 767.8 | 37 | 2.8 | 90 | NE | 1 | 0.4 | ..... | ..... | Fog | ..... | Calm | 0.04 | 1.0 | Foggy | |
| Duluth, Minnesota | 29.41 | 747.0 | 30.11 | 765.0 | 34 | 1.1 | 90 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Eagle Pass, Texas | 29.26 | 743.2 | 30.02 | 762.5 | 49 | 9.4 | 86 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Eastport, Maine | 29.93 | 760.1 | 30.09 | 764.5 | 15 | — 9.4 | 56 | NW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.48 | 748.8 | 30.23 | 767.8 | 37 | 2.8 | 81 | Calm | 0 | 0 | ..... | 10k | Sm'e | NW | ..... | 0 | 0 | Cloudy | |
| Escanaba, Michigan | 29.54 | 750.3 | 30.23 | 767.8 | 32 | 0.0 | 79 | NE | 3 | 1.3 | ..... | 0 | 5s | ..... | NE | 0 | 0 | Fair | |
| Florence, Arizona | 28.19 | 716.0 | 29.79 | 756.7 | 60 | 15.6 | 44 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Fort Bayard, New Mexico | 24.10 | 612.1 | 30.10 | 764.5 | 47 | 8.3 | 48 | SW | 8 | 3.6 | ..... | 10c | 0 | ..... | ..... | 0 | 0 | Cloudy | |
| Fort Craig, New Mexico | 25.48 | 647.2 | ..... | ..... | 42 | 5.6 | 74 | S | 1 | 0.4 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Fort Gibson, Indian Ter | 29.48 | 748.8 | 30.02 | 762.5 | 52 | 11.1 | 85 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.75 | 730.2 | 30.01 | 763.0 | 45 | 7.2 | 61 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.48 | 748.8 | 29.52 | 749.8 | — 9 | —22.8 | 100 | NE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Sill, Indian Territory | 28.84 | 732.5 | 29.95 | 760.7 | 51 | 10.6 | 72 | NW | 8 | 3.6 | ..... | 5k | 0 | W | ..... | 0 | 0 | Fair | |
| Galveston, Texas | 30.00 | 762.0 | 30.01 | 763.0 | 60 | 15.6 | 76 | SW | 4 | 1.8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Hazy | |
| Grand Haven, Michigan | 29.55 | 750.6 | 30.22 | 767.6 | 37 | 2.8 | 90 | SW | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Indianapolis, Indiana | 29.37 | 746.0 | 30.17 | 766.3 | 39 | 3.9 | 82 | NE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Indianola, Texas | 30.01 | 763.0 | 30.07 | 763.8 | 61 | 16.1 | 61 | NW | 1 | 0.4 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.88 | 733.5 | 30.01 | 762.2 | 57 | 13.9 | 47 | SE | 10 | 4.5 | ..... | 8ck | 0 | SE | ..... | 0 | 0 | Fair | |
| Jacksonville, Florida | 29.88 | 758.9 | 29.91 | 759.7 | 62 | 16.7 | 88 | N | 7 | 3.1 | ..... | ..... | 10n | ..... | NE | 0.50 | 12.7 | Light rain | |
| Keokuk, Iowa | 29.52 | 749.8 | 30.15 | 765.8 | 46 | 7.8 | 84 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Key West, Florida | 29.80 | 756.9 | 29.83 | 757.7 | 74 | 23.3 | 81 | SW | 10 | 4.5 | ..... | 0 | 2ks;hz | ..... | SW | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 30.10 | 764.5 | 30.12 | 765.0 | 47 | 8.3 | 92 | NE | 28 | 12.5 | ..... | ..... | 10ks | ..... | NE | 0 | 0 | Cloudy | |
| Knoxville, Tennessee | 29.04 | 737.6 | 30.01 | 763.5 | 47 | 8.3 | 77 | Calm | 0 | 0 | ..... | ..... | Sm'e | ..... | Calm | 0 | 0 | Dense smoke | |
| La Crosse, Wisconsin | 29.43 | 747.5 | 30.19 | 766.8 | 39 | 3.9 | 82 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 26.06 | 661.9 | 30.20 | 767.1 | 38 | 3.3 | 90 | Calm | 0 | 0 | ..... | 0 | 8s | ..... | Calm | 0 | 0 | Cloudy | |
| Laredo, Texas | 29.64 | 752.8 | 29.90 | 761.7 | 49 | 9.4 | 78 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 29.28 | 743.2 | 30.11 | 764.8 | 51 | 10.6 | 86 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Los Angeles, California | 29.62 | 752.3 | 29.96 | 761.0 | 50 | 10.0 | 86 | N | 4 | 1.8 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.55 | 750.6 | 30.12 | 765.0 | 44 | 6.7 | 60 | NE | 11 | 4.9 | ..... | 0 | Sm'e | ..... | NE | 0 | 0 | Clear | |
| Lynchburg, Virginia | 29.46 | 748.3 | 30.15 | 765.8 | 47 | 8.3 | 62 | NE | 4 | 1.8 | ..... | 0 | 8ks | ..... | Calm | 0 | 0 | Cloudy | |
| Marquette, Michigan | 29.41 | 747.8 | 30.16 | 766.1 | 36 | 2.2 | 71 | SE | 8 | 3.6 | ..... | 1ck | 0 | SE | ..... | 0 | 0 | Clear | |
| Mason, Texas | 28.49 | 721.3 | 30.16 | 766.1 | 53 | 11.7 | 54 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.72 | 754.9 | 30.03 | 762.7 | 57 | 13.9 | 76 | Calm | 0 | 0 | ..... | Haze | 8m';hz | Calm | Calm;N | 0 | 0 | Hazy | |
| Milwaukee, Wisconsin | 29.51 | 749.5 | 30.23 | 767.8 | 34 | 1.1 | 90 | W | 4 | 1.8 | ..... | 0 | Sm'e | ..... | ..... | 0.01 | 0.3 | Clear | |
| Mobile, Alabama | 29.97 | 761.2 | 30.01 | 762.2 | 61 | 16.1 | 71 | N | 8 | 3.6 | ..... | 2ck | 2s | Calm | Calm | Inap. | Inap. | Fair | |
| Montgomery, Alabama | 29.80 | 756.9 | 30.04 | 763.0 | 57.5 | 14.2 | 72 | NE | 2 | 0.9 | ..... | 10ck;hz | Haze | Calm | Calm | 0 | 0 | Cloudy | |
| Morgantown, West Virginia | 29.12 | 739.6 | 30.22 | 767.6 | 35 | 1.7 | 90 | N | 9 | 4.0 | ..... | ..... | 10s | ..... | N | 0.28 | 7.1 | Cloudy | |
| Mt. Washington, N. H. | 23.34 | 593.3 | 29.72 | 754.9 | — 8 | —22.2 | 56 | NW | 84 | 37.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Nashville, Tennessee | 29.52 | 749.8 | 30.05 | 763.3 | 52 | 11.1 | 79 | N | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| New Haven, Connecticut | 30.10 | 764.5 | 30.22 | 767.6 | 35 | 1.7 | 81 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New London, Connecticut | 30.17 | 766.3 | 30.22 | 767.6 | 37 | 2.8 | 45 | N | 4 | 1.8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| New Orleans, Louisiana | 29.95 | 760.7 | 30.01 | 762.2 | 61 | 16.1 | 66 | N | 8 | 3.6 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Fair | |
| Newport, Rhode Island | 30.14 | 765.5 | 30.19 | 766.8 | 30 | — 1.1 | 57 | N | 5 | 2.2 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| New York, New York | 30.03 | 762.7 | 30.22 | 767.6 | 38 | 3.3 | 80 | N | 8 | 3.6 | ..... | 0 | 8ks | ..... | N | 0 | 0 | Fair | |
| Norfolk, Virginia | 30.11 | 764.8 | 30.17 | 766.3 | 46 | 7.8 | 69 | E | 12 | 5.4 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| North Platte, Nebraska | 27.22 | 691.4 | 29.84 | 757.7 | 42 | 5.6 | 95 | SW | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Olympia, Washington Ter. | 30.02 | 762.5 | 30.06 | 763.5 | 43 | 6.1 | 100 | S | 1 | 0.4 | ..... | 0 | Fog | ..... | Calm | 0.01 | 0.3 | Clear | |
| Omaha, Nebraska | 29.02 | 737.1 | 30.11 | 764.8 | 51 | 10.6 | 79 | Calm | 0 | 0 | ..... | 5k | 5s | SW | Calm | 0 | 0 | Cloudy | |
| Oswego, New York | 29.92 | 760.0 | 30.25 | 768.3 | 36 | 2.2 | 61 | NE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pembina, Dakota | 29.11 | 739.4 | 29.99 | 761.0 | 33 | 0.6 | 89 | S | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Philadelphia, Pennsylvania | 30.18 | 766.6 | 30.23 | 767.8 | 38 | 3.3 | 54 | NE | 10 | 4.5 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Phœnix, Arizona | 28.67 | 728.2 | 30.44 | 773.2 | 58 | 14.4 | 58 | S | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.87 | 453.9 | 30.08 | 764.0 | 16 | — 8.9 | 49 | SE | 21 | 9.4 | ..... | 8c | 0 | SE | ..... | 0 | 0 | Fair | |
| Pioche, Nevada | 23.91 | 607.3 | 29.68 | 753.9 | 33 | 0.6 | 100 | W | 2 | 0.9 | ..... | 0 | 2s | ..... | S | 0.35 | 8.9 | Fair | |
| Pittsburg, Pennsylvania | 29.38 | 746.2 | 30.23 | 767.8 | 33 | 0.6 | 89 | NE | 1 | 0.4 | ..... | ..... | Fog | ..... | Calm | 0.07 | 1.8 | Foggy | |
| Port Huron, Michigan | 29.53 | 750.0 | 30.22 | 767.6 | 36 | 2.2 | 90 | SW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Portland, Maine | 30.09 | 764.3 | 30.14 | 765.5 | 26 | — 3.3 | 52 | W | 8 | 3.6 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Portland, Oregon | 30.04 | 763.0 | 30.15 | 765.8 | 50 | 10.0 | 93 | Calm | 0 | 0 | ..... | ..... | 8ks | ..... | W | 0 | 0 | Cloudy | |
| Prescott, Arizona | 24.61 | 625.1 | 29.97 | 761.2 | 49 | 9.4 | 57 | SE | ..... | ..... | ..... | 10cs | 0 | SE | ..... | 0 | 0 | Cloudy | |
| Punta Rassa, Florida | 29.73 | 755.1 | 29.75 | 755.6 | 71 | 21.7 | 90 | S | 24 | 10.7 | ..... | 2k | 2s | S | S | 0.10 | 2.5 | Fair | |
| Red Bluff, California | 29.66 | 753.4 | 30.03 | 762.7 | 51 | 10.6 | 86 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Rochester, New York | 29.59 | 751.6 | 30.23 | 767.8 | 34 | 1.1 | 90 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | NW | Inap | Inap. | Cloudy | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roseburg, Oregon | 29.55 | 750.6 | 30.12 | 765.0 | 46 | 7.8 | 96 | Calm | 0 | 0 | ..... | 5ck | 0 | Calm | ..... | 0 | 0 | Fair | |
| Sacramento, California | 29.92 | 760.0 | 30.00 | 762.0 | 54 | 12.2 | 87 | Calm | 0 | 0 | ..... | 1c | 0 | N | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.54 | 750.3 | 30.12 | 765.0 | 47 | 8.3 | 77 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Marks, Florida | 29.88 | 758.9 | 29.90 | 759.4 | 60 | 15.6 | 94 | NE | 10 | 4.5 | ..... | ..... | 10n | ..... | NE | 0.64 | 16.3 | Light rain | |
| St. Paul, Minnesota | 29.26 | 743.2 | 30.11 | 764.8 | 38 | 3.3 | 90 | SE | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.55 | 649.0 | 29.88 | 758.9 | 60 | 10.0 | 52 | N | 8 | 3.6 | ..... | 10k | 0 | SW | ..... | 0 | 0 | Cloudy | |
| San Antonio, Texas | 29.35 | 745.5 | 29.94 | 760.5 | 51 | 10.6 | 86 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Diego, California | 29.94 | 760.5 | 30.01 | 762.2 | 55 | 12.8 | 93 | N | 3 | 1.3 | ..... | ..... | 10s | ..... | NW | 0.19 | 4.8 | Cloudy | |
| Sandusky, Ohio | 29.57 | 751.1 | 30.27 | 768.8 | 37 | 2.8 | 95 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.33 | 8.4 | Foggy | |
| Sandy Hook, New Jersey | 30.20 | 767.1 | 30.22 | 767.6 | 38 | 3.3 | 45 | NE | 11 | 4.9 | ..... | 10ck | 0 | NW | ..... | 0 | 0 | Cloudy | |
| San Francisco, California | 29.97 | 761.2 | 30.04 | 763.0 | 53 | 11.7 | 86 | W | 4 | 1.8 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Santa Fé, New Mexico | 23.30 | 591.8 | 29.84 | 757.9 | 44 | 6.7 | 45 | E | 4 | 1.8 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Savannah, Georgia | 29.89 | 759.2 | 29.98 | 761.5 | 61 | 16.1 | 82 | NE | 6 | 2.7 | ..... | 2ck | 5s | W | NE | 0 | 0 | Fair | |
| Shreveport, Louisiana | 29.84 | 757.9 | 30.06 | 763.5 | 56 | 13.3 | 87 | Calm | 0 | 0 | ..... | Haze | Sm'e | ..... | ..... | 0 | 0 | Fair | |
| Smithville, North Carolina | 30.01 | 762.2 | 30.05 | 763.3 | 57 | 13.9 | 94 | N | 6 | 2.7 | ..... | 5cs | Haze | W | Calm | 0 | 0 | Hazy | |
| Springfield, Massachusetts | 30.00 | 762.0 | 30.14 | 765.5 | 35 | 1.7 | 61 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | |
| Stockton, Texas | 27.00 | 685.8 | 30.00 | 762.0 | 45 | 7.2 | 60 | SW | 5 | 2.2 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Thatcher's Island, Mass | 30.12 | 765.0 | 30.17 | 766.3 | 28 | — 2.2 | 54 | NW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Toledo, Ohio, | 29.53 | 750.0 | 30.23 | 767.8 | 39 | 3.9 | 91 | E | 3 | 1.3 | ..... | ..... | 10s | ..... | E | 0.03 | 0.8 | Cloudy | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 56 | 13.3 | 62 | SE | ..... | ..... | 1 | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Tybee Island, Georgia | 29.95 | 760.7 | 29.98 | 761.5 | 63 | 17.2 | 88 | E | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Umatilla, Oregon | 29.71 | 754.6 | ..... | ..... | 46 | 7.8 | 84 | E | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.80 | 756.9 | 30.06 | 763.5 | 57 | 13.9 | 58 | Calm | 0 | 0 | ..... | 2c | Sm'e | Calm | Calm | 0 | 0 | Smoky | |
| Visalia, California | 29.67 | 753.6 | 30.04 | 763.0 | 50 | 10.0 | 93 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C. | 30.10 | 764.5 | 30.22 | 767.6 | 43 | 6.1 | 83 | N | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.10 | 2.5 | Cloudy | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 45 | 7.2 | 61 | NE | ..... | ..... | ..... | ..... | 10ks | ..... | N | Inap. | Inap. | Cloudy | |
| Wilmington, N. Carolina | 29.96 | 761.0 | 30.04 | 763.0 | 56 | 13.3 | 87 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Winnemucca, Nevada | 25.57 | 649.5 | 29.93 | 760.2 | 42 | 5.6 | 91 | Calm | 0 | 0 | ..... | 2c | Fog | Calm | Calm | 0 | 0 | Fair | |
| Wood's Holl, Mass | 30.13 | 765.3 | 30.19 | 766.8 | 34 | 1.1 | 61 | NW | 10 | 4.5 | ..... | ..... | 10n | ..... | Calm | 0.19 | 4.8 | Light rain | |
| Yankton, Dakota | 28.84 | 732.5 | 30.19 | 766.8 | 31 | — 0.6 | 89 | SE | 1 | 0.4 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Clear | |
| Yuma, Arizona | 29.71 | 754.6 | 29.87 | 758.7 | 60 | 15.6 | 48 | NW | 25 | 11.2 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Sub-Series. | | | | | | | | | | | | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| York Factory, B. A. | 29.85 | 758.2 | 29.90 | 759.4 | 0.5 | —17.5 | 100 | SE | 24 | 10.7 | ..... | ..... | 10n | ..... | E | 0.45 | 11.4 | Snowing | J. Fortescue, W. Wood |
| Havana, Cuba, W. I. | 29.86 | 758.4 | 29.88 | 758.9 | 72 | 22.2 | 75 | SW | 6.0 | 2.7 | ..... | 8c | 2ks | W | SW | 0.17 | 4.3 | Fair | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.04 | 763.0 | 30.05 | 763.3 | 79 | 26.1 | 90 | Calm | 0 | 0 | ..... | 8c | 0 | Calm | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.86 | 758.4 | 29.94 | 760.5 | 82 | 27.8 | ..... | E | 20 | 8.9 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | ..... | ..... | 30.00 | 762.0 | 81 | 27.2 | 87 | E | ..... | ..... | 3 | 4c | 5k | E | ..... | 0 | 0 | Fair | C. J. Hering. |
| Batavia, Dutch Guiana, S. A. | 30.06 | 763.5 | 30.07 | 763.7 | 84.2 | 29 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.18 | 639.6 | ..... | ..... | 71.0 | 21.7 | 81 | Calm | ..... | ..... | 0 | ..... | 9ks; s | ..... | ..... | 0.07 | 1.8 | ..... | Thomas Herran. |

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medillin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,460 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,623 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,100 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er —10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.98 | 761.5 | 53 | 11.7 | 52 | 11.1 | 79 | SW | 17 | 7.6 | ..... | ..... | 5 | ..... | SW | 0 | 0 | ..... | ..... | ..... | |
| Navy Yard, Pensacola, Fla. | 30.08 | 764.0 | 62 | 16.7 | 62 | 16.7 | 94 | NNW | 2 | 0.9 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy ..... | |
| Navy Yard, Portsmouth, N.H. | 30.20 | 767.1 | 74 | 23.3 | 24 | — 4.4 | 61 | WNW | 3 | 1.3 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan | 30.20* | 767.1* | 52.5 | 11.4 | 44.5 | 6.9 | 60 | Calm | ..... | ..... | 0 | ..... | Haze | ..... | Calm | 0 | 0 | ..... | ..... | Fair..... | |
| Adams, Panama | 29.88 | 758.9 | 83 | 28.3 | 82 | 27.8 | 91 | NW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Alliance, Piraeus, Greece | 30.07‡ | 763.8‡ | ..... | ..... | 51 | 10.6 | 72 | SW | ..... | ..... | 0–1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Ashuelot, Shanghai, China | 30.32* | 770.1* | 62 | 16.7 | 48 | 8.9 | 85 | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Blue sky..... | |
| Canonicus, New Orleans, La | 29.94 | 760.5 | 47 | 8.3 | 61 | 16.1 | 82 | NW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | Pleasant..... | |
| Colorado, New York, N. Y. | 30.20‡ | 767.1‡ | ..... | ..... | 36 | 2.2 | 55 | NNE | 4 | 1.8 | ..... | ..... | 8 | ..... | NW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Constitution, N. 49° 27′ W. 11° 36′ | 30.09‡ | 764.3‡ | ..... | ..... | 50 | 10.0 | 79 | E | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Overcast..... | |
| Despatch, N. 44° 12′ E. 29° 41′ | 30.04 | 763.0 | 85 | 29.4 | 40 | 4.4 | 73 | NNW | ..... | ..... | 4 | ..... | 10 | ..... | NW | ..... | ..... | Mod'ate | NW | Cloudy..... | |
| Enterprise, New Orleans, La | 30.00‡ | 762.0‡ | ..... | ..... | 63 | 17.2 | 83 | NNW | ..... | ..... | 1 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Fair ..... | |
| Franklin, Norfolk, Va | 30.13‡ | 765.3‡ | ..... | ..... | 44 | 6.7 | ?? | ENE | 8.4 | 3.8 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | D. clouds..... | |
| Gettysburg Valetta, Malta | 30.08‡ | 764.0‡ | ..... | ..... | 67 | 19.4 | 100 | WSW | ..... | ..... | 1 | ..... | 5 | ..... | Ca m | 0 | 0 | ..... | ..... | Fair ..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.16 | 766.1 | 72 | 22.2 | 72 | 22.2 | 68 | NNE | ..... | ..... | 4 | ..... | 2 | ..... | NE | ..... | ..... | ..... | ..... | Clear..... | |
| Marion, Smyrna, Turkey | 30.01 | 762.2 | 55 | 12.8 | 41 | 5.0 | ?? | WSW | ..... | ..... | 2 | ..... | 5 | ..... | WNW | 0 | 0 | Smooth | W | Fair..... | |
| Michigan, Erie, Pa | 29.69 | 754.1 | 59 | 15.0 | 35 | 1.7 | 90 | SW | ..... | ..... | 2 | ..... | 10 | ..... | SW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monongahela, Hong-Kong, China | 30.31* | 769.9* | 62 | 16.7 | 62 | 16.7 | 83 | E | ..... | ..... | 1–2 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | D. clouds..... | |
| New Hampshire, Port Royal, S. C | 30.18 | 766.6 | 63 | 17.2 | 62 | 16.7 | 88 | ENE | 10 | 4.5 | ..... | ..... | 5 | ..... | E | 0 | 0 | ..... | ..... | Fair..... | |
| Omaha, N. 11° 45′, W. 46° 40′ | 30.12* | 765.0* | 81 | 27.2 | 80.5 | 26.9 | 70 | NE | 5 | 2.2 | ..... | ..... | 4 | ..... | NE | 0 | 0 | Mod'ate | NE | ..... | |
| Onward, Callao, Peru | 29.98† | 761.5† | ..... | ..... | 74 | 23.3 | 86 | ESE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, Vera Cruz, Mexico | 30.12‡ | 765.0‡ | ..... | ..... | 68 | 20.0 | 95 | SW | ..... | ..... | 1 | ..... | 5 | ..... | WSW | ..... | ..... | Long | NE | Fair ..... | |
| Palos, Shanghai, China | 30.33* | 770.4* | 58 | 14.4 | 50 | 10.0 | 72 | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Pensacola, Honolulu, H. I. | 30.19 | 766.8 | 72 | 22.2 | 69 | 20.6 | 80 | N | 3 | 1.3 | ..... | ..... | 4 | ..... | ..... | 0.01 | 0.3 | ..... | ..... | Fair..... | |
| Plymouth, Norfolk, Va | 30.15‡ | 765.8‡ | ..... | ..... | 47 | 8.3 | 77 | ENE | ..... | ..... | 3 | ..... | 10 | ..... | ENE | ..... | ..... | ..... | ..... | Squally..... | |
| Powhatan, Port Royal, S, C | 30.02‡ | 762.5‡ | ..... | ..... | 62 | 16.7 | 100 | ENE | 2.4 | 1.1 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Ranger, Amoy, China | 30.39* | 771.9* | ..... | ..... | 60.5 | 15.8 | 80 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Blue sky..... | |
| Rio Bravo, Brownsville, Texas | ..... | ..... | ..... | ..... | 55 | 12.8 | 93 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Santee, Annapolis, Md | 30.24* | 768.1* | 59 | 15.0 | 43 | 6.1 | 83 | NE | ..... | ..... | 1 | ..... | 10 | ..... | N | 0 | 0 | ..... | ..... | Overcast..... | |
| Saratoga, Washington, D. C | 30.11* | 764.8* | ..... | ..... | 45 | 7.2 | 100 | NE | ..... | ..... | 1 | ..... | 8 | ..... | Calm | 0 | 0 | ..... | ..... | Cloudy..... | |
| St. Louis, League Island, Pa | 30.12 | 765.0 | 57 | 13.9 | 43 | 6.1 | 59 | NE | 8 | 3.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear ..... | |
| Supply, N. 49° 40′ W. 0° 16′ | 30.06 | 763.5 | 61 | 16.1 | 46 | 7.8 | 77 | NNE | ..... | ..... | 4 | ..... | 10 | ..... | NNE | ..... | ..... | Smooth | ENE | Cloudy..... | |
| Swatara, Cartagena, New Grenada | 29.92* | 760.0* | ..... | ..... | 86 | 30.0 | 80 | NW | ..... | ..... | 1 | ..... | 7 | ..... | N&W | ..... | ..... | ..... | ..... | D. clouds..... | |
| Tennessee, N. 6° 16′, E. 89° 6′ | 29.95* | 760.7* | 87 | 30.6 | 86 | 30.0 | 80 | NE | 7 | 3.1 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | Slight | NE | D. clouds..... | |
| Trenton, Piraeus, Greece | 30.09‡ | 764.3‡ | ..... | ..... | 55 | 12.8 | 68 | WSW | ..... | ..... | 1–2 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Hazy..... | |
| Tuscarora, N. 24° 15, 31″ W. 110° 20′ 47″ | 29.98 | 761.5 | 69 | 20.6 | 68 | 20.0 | 74 | SSE | ..... | ..... | 2 | ..... | 2 | ..... | Calm | ..... | ..... | Smooth | ..... | Fair ..... | |
| Vandalia, Naples, Italy | 30.04‡ | 763.0‡ | ..... | ..... | 58 | 14.4 | 70 | S | ..... | ..... | 2 | ..... | 5 | ..... | SW | ..... | ..... | ..... | ..... | Threatening | |
| Wabash, Boston, Mass | 30.20‡ | 767.1‡ | ..... | ..... | 28 | — 2.2 | ..... | NW | 10 | 4.5 | ..... | ..... | 2 | ..... | Calm | 0 | 0 | ..... | ..... | Fair ..... | |
| Wyoming, N. 39° 28′ W. 68° 18′ | 30.31* | 769.9* | ..... | ..... | 38 | 3.3 | 63 | NW | ..... | ..... | 4 | ..... | 6 | ..... | N&W | ..... | ..... | Smooth | N&W | D. clouds..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | |
| S. S. City of Panama, N. 43° 45′, W. 124° 44″ | | | 30.16* | 766.1* | | | | NW | | | 2 | | 10 | | | Mod'ate | SW | Foggy | Capt. Seabury. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, Hong-Kong, China | | | | | 60 | 15.6 | | ENE | | | 3 | | | | | | | Blue sky | Capt. Maury. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Corrected for temperature and elevation; instrumental error not known.

**WHITE STAR LINE MARINE SERIES.**

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, New York, N. Y. | | | 30.22† | 767.6† | 38 | 3.3 | ?? | NE | | | 3 | | 8c | | NW | | | Fair | Capt. W. H. Thompson |
| S. S. Celtic, N. 40° 35′, W. 70° 50′ | | | 30.15† | 765.8† | 30 | —1.1 | ?? | WNW | | | 5 | | 10 | WNW | | None | | D clouds | Capt. B. Gleadell. |
| S. S. Germanic, Off Mine Head | | | 30.14† | 765.5† | 54 | 12.2 | 93 | N | | | 2 | | | | N | None | | D. clouds | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Aneroid.

**OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.**

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, N. 37° 09′, E. 143° 38′ | | | 30.09* | 764.8* | | | | W | | | 3 | | Light | | WSW | Smooth | | D. clouds | Capt. John Metcalf. |
| S. S. Gaelic, N. 38° 10′, E. 135° 34′ | | | 30.12† | 765.0† | 53 | 11.7 | ?? | Var. | | | 2 | | os | | Var. | Smooth | W | D. clouds | Capt. W. H. Kidley |
| S. S. Oceanic, N. 38° 00′, W. 137° 55′ | | | 29.68 | 753.9 | 56 | 13.3 | 100 | S | | | 6 | | 8 | | SW | Heavy | W | Raining | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

**NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.**

Furnished by the coöperation of A. Schumacher & Co., Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | Character | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, N. 49° 56′ 56″, W. 25° 02′ 15″ | | | 30.18† | 766.6† | 44 | 6.7 | 92 | E | | | 4 | | 8 | | SSE | Light | ESE | Cloudy | Captain Sargent. |
| S. S. Ohio, N. 42° 18′, W. 61° 31′ | | | 29.90 | 759.4 | 33.5 | 0.8 | 90 | W | | | 6 | | 2 | | W | Mod'ate | W | Clear | Captain Morrison. Captain Harris. |
| S. S. Pennsylvania | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. †Aneroid; unreliable, corrected for elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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**ALLAN LINE MARINE SERIES.**

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Scandinavian | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES.** (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller Crisfield, Md. | | | 29.99 | 761.7 | 56 | 13.3 | 69 | ENE | 4 | 1.8 | | | 10s | | | | | Overcast | Capt. James Jorgensen |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 30.07 | 763.8 | 9 | —12.8 | 100* | S | 5 | 2.2 | | | 10s | | Calm | | | Gusty | O. T. Sherman. |
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NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Determined by use of hair hygrometer.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 23, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

## ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.26 | 768.7 | 61.7 | 16.5 | ..... | NE | ..... | ..... | 5 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Dr. Ollive. |
| Nemours | ..... | ..... | 30.04 | 763.0 | 67.3 | 19.6 | 58 | Calm | ..... | ..... | 0 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Michel. |
| Algiers | ..... | ..... | 29.87 | 758.6 | 65.8 | 18.8 | 53 | SW | ..... | ..... | 8 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Towilliere. |
| La Calle | ..... | ..... | 29.86 | 758.5 | 71.1 | 21.7 | 41 | NNW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Boulangeot. |
| Tunis | ..... | ..... | 29.90 | 759.5 | 69.8 | 21.0 | 33 | W | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Jacques. |
| Sfax | ..... | ..... | 29.94 | 760.5 | 48.2 | 9.0 | ..... | W | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | Very cloudy | Gau. |
| Saida | ..... | ..... | 30.02 | 762.6 | 59.5 | 15.3 | 89 | SSE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Herbin. |
| Tebessa | ..... | ..... | 29.95 | 760.8 | ..... | ..... | ..... | W | ..... | ..... | 7 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Bourgeois. |
| Geriville | ..... | ..... | 30.18 | 766.5 | 55.8 | 13.2 | 84 | NNE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Lemaillot. |
| Laghouat | ..... | ..... | 30.10 | 764.5 | 65.3 | 18.5 | 25 | W | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0.12 | 3. | Clear | Guyot. |
| Biskra | ..... | ..... | 29.98 | 761.4 | 72.5 | 22.5 | 40 | N | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

## AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.04 | 737.6 | 29.58 | 751.4 | 55.0 | 12.8 | 42 | SW | ..... | ..... | 6 | ..... | 9 | ..... | ..... | 0.031 | 0.8 | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 28.74 | 730.1 | 29.52 | 749.8 | 41.7 | 5.4 | 91 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.130 | 3.3 | ..... | Dr. Wierzbiski. |
| Eperies | 28.68 | 728.5 | 29.56 | 750.9 | 46.6 | 8.1 | 71 | S | ..... | ..... | 2 | ..... | 10k;s | ..... | N | 0.030 | 0.76 | ..... | Julius Mikolik. |
| Gratz | 28.24 | 717.3 | 29.46 | 748.3 | 55.2 | 12.9 | 47 | SW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.20 | 716.6 | 29.71 | 754.7 | 49.3 | 9.6 | 51 | ESE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.11 | 714.0 | 29.45 | 748.1 | 44.6 | 7.0 | 74 | WNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.197 | 5.0 | ..... | Prof. C. Wagner |
| Lemberg | 28.54 | 724.9 | 29.53 | 750.1 | 44.1 | 6.7 | 73 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Dr. T. Stanecki. |
| Pola | 29.52 | 749.9 | 29.63 | 752.7 | 55.6 | 13.1 | 77 | SSE | ..... | ..... | 6 | ..... | 10cs | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Szegedin | 29.35 | 745.6 | 29.63 | 752.7 | 53.6 | 12.0 | 63 | S | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | Johann Tamas, S. J. |
| Trieste | 29.53 | 750.1 | 29.63 | 752.7 | 60.7 | 10.4 | 84 | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Karl Stancel. |
| Vienna | 28.69 | 728.8 | 29.39 | 746.6 | 55.9 | 13.3 | 46 | NNE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0.402 | 10.2 | Rainy | P. Busin. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.4 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

## BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.09 | 713.4 | 29.63 | 752.7 | 34.3 | 1.3 | 68 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.047 | 1.2 | ..... | Prof. M. Passau. |
| Brussels | 29.42 | 747.2 | 29.62 | 752.4 | 38.1 | 3.4 | 61 | WNW | ..... | ..... | 4 | ..... | 10 | ..... | WNW | 0.039 | 1.0 | Snowing | Royal Observatory. |
| Furnes | 29.66 | 753.4 | 29.69 | 754.0 | 38.8 | 3.8 | 65 | NW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | 0.039 | 1.0 | ..... | M. E. de Cae. |
| Maseyck | 29.47 | 748.4 | 29.59 | 751.6 | 39.0 | 3.9 | 88 | W | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.087 | 2.2 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E. Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 1—10. | Clouds. Amount. Upper. 0—10. | Clouds. Amount. Low'r. 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.58 | 751.3 | 29.68 | 753.9 | 36.5 | 2.5 | ..... | N | 18 | 8.0 | ..... | ..... | 10 | ..... | ..... | 0.190 | 4.83 | Snowing..... | W. Boswell. |
| Ardrossan | 29.72 | 754.9 | 29.74 | 755.4 | 41 | 5.0 | ..... | NW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.86 | 758.4 | 41.7 | 5.4 | ..... | W | 11 | 4.9 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | Overcast..... | S. Call; for Dr. Robinson. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.76 | 755.9 | 39.0 | 3.9 | ..... | NW | 12 | 5.4 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 29.92 | 760.0 | 38.0 | 3.3 | ..... | WNW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Hail-showers | J. Dreyer. |
| Bradford, Yorkshire | 29.27 | 743.4 | 29.66 | 753.4 | 41.3 | 5.2 | ..... | N | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | D. clouds.... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.96 | 761.0 | 30.00 | 762.0 | 84.0 | 28.9 | ..... | NE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.72 | 754.9 | 44.0 | 6.7 | ..... | NNW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | H. Todd. [H.C. |
| Cardington | ..... | ..... | 29.73 | 755.1 | 42.0 | 5.6 | ..... | N | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | John McLaren. |
| Chatham, School M. E. | 29.60 | 751.8 | 29.73 | 755.1 | 39.2 | 4.0 | ..... | NW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.33 | 719.6 | 29.84 | 757.9 | 35.0 | 1.7 | ..... | N | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | Snowing..... | Alexander Watt. |
| Donaghadee | 29.75 | 755.6 | 29.79 | 756.7 | 40 | 4.4 | ..... | NW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | J. Mac Gowan. |
| Dover | 29.68 | 753.9 | 29.70 | 754.4 | 40 | 4.4 | ..... | NW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | ¾ clouded... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.72 | 754.9 | 41.0 | 5.0 | ..... | NNW | 4.6 | 2.1 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | Thomas Mackereth. |
| Falmouth, Observatory | 29.70 | 754.4 | 29.93 | 760.2 | 42.5 | 5.8 | ..... | NW | ..... | ..... | 5 | ..... | 7 | ..... | ..... | ..... | ..... | Overcast..... | The Staff. |
| Fort Napier, (Natal) | 27.68 | 703.1 | 29.89 | 759.2 | 77.0 | 25.0 | ..... | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.66 | 753.4 | 29.89 | 759.2 | 88 | 31.1 | ..... | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Prof. A. H. Curtis. |
| Galway, Queen's College | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Corpl. C. Aitken, A.H.C. |
| Gibraltar, (Mediterranean) | 30.06 | 763.5 | 30.11 | 764.8 | 59.2 | 15.1 | ..... | W | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | D. G. Maclean. |
| Glasgow, Observatory | 29.53 | 750.0 | 29.73 | 755.1 | 39.9 | 4.4 | ..... | NNW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | Gloomy..... | G. T. Watson. |
| Great Yarmouth | 29.65 | 753.1 | 29.66 | 753.4 | 36 | 2.2 | ..... | NW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | Snowing..... | The Staff, for G. B. Airy. |
| Greenwich, Royal Obs'y | 29.57 | 751.1 | 29.74 | 755.4 | 40.9 | 4.9 | ..... | NNW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | Dr. S. E. Hoskins, F.R.S. |
| Guernsey | 29.62 | 752.3 | 29.84 | 757.9 | 42 | 5.6 | ..... | NNW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | Hailing..... | M. P. Moyle. |
| Helston | ..... | ..... | 29.98 | 761.5 | 45 | 7.2 | ..... | NW | ..... | ..... | 6 | ..... | 8c | ..... | ..... | 0.06 | 1.5 | Fine..... | John Tilston. |
| Holyhead | 29.74 | 755.4 | 29.80 | 756.9 | 41 | 5.0 | ..... | NW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | J. Fisher. |
| Jersey | 29.59 | 751.6 | 29.89 | 759.2 | 38.0 | 3.3 | ..... | N | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | Snowing..... | The Staff. |
| Kew, Observatory | ..... | ..... | 29.97 | 761.2 | 39.2 | 4.0 | ..... | NW | 15 | 6.7 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | Threatening | George Mitchell. |
| Kingstown | 29.84 | 757.9 | 29.87 | 758.7 | 39 | 3.9 | ..... | NW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Wm. J. Harrison, F.G.S. |
| Leicester, Museum | ..... | ..... | 29.73 | 755.1 | 40.0 | 4.4 | ..... | NW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | Sgt. Fred. Travis, A. H. |
| Malta, (Mediterranean) | 29.81 | 757.2 | 29.88 | 758.9 | 64.6 | 18.1 | ..... | SW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | W. D. Penny. [C. |
| Nairn | 29.66 | 753.4 | 29.76 | 755.9 | 37 | 2.8 | ..... | WNW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded... | C. S. Duncombe. |
| Nassau, (Bahamas) | ..... | ..... | 29.90 | 759.4 | 76.5 | 24.7 | ..... | S | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | E. J. Lowe, F. R. S. |
| Nottingham, Observatory | 29.55 | 750.6 | 29.74 | 755.4 | 42.3 | 5.7 | ..... | NNW | ..... | ..... | 3 | ..... | 4k | ..... | N | 0 | 0 | D. clouds.... | Rev. Stephen Whitty. |
| Oscott, St. Mary's College | 29.21 | 741.9 | 29.74 | 755.4 | 40.7 | 4.8 | ..... | NW | ..... | ..... | 4–5 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | Mr. Lucas. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.76 | 755.9 | 39 | 3.9 | ..... | NW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | Blue sky..... | John Merrifield. |
| Plymouth | 29.82 | 757.4 | 29.89 | 759.2 | 39.8 | 4.3 | ..... | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Cloudy..... | W. Kennedy. |
| Roche's Point | 29.92 | 760.0 | 29.97 | 761.2 | 46 | 7.2 | ..... | NW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | John C. Walker. |
| Saint Ann's Head | 29.77 | 756.1 | 29.93 | 760.2 | 41 | 5.0 | ..... | NW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | Blue sky..... | Rev. C. Clouston, LL. D. |
| Sandwick Manse, (Orkneys | ..... | ..... | 29.70 | 754.4 | 36 | 2.2 | ..... | N | 27 | 12.1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. W. H. Lyne. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 29.92 | 760.0 | 54.2 | 12.3 | ..... | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | W. F. Cooper. |
| Sheffield | 29.43 | 747.5 | 29.71 | 754.6 | 43.2 | 6.2 | ..... | N | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Blue sky..... | Rev. F. Redford, M. A. |
| Silloth Rectory | 29.70 | 754.4 | 29.73 | 755.1 | 43.4 | 6 3 | 59 | NW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0.010 | 0.25 | D. clouds.... | Rev. S. J. Perry. |
| Stonyhurst, Observatory | 29.32 | 744.7 | 29.73 | 755.1 | 39.4 | 4.1 | ..... | W | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | John Sutherland. |
| Stornorway, Lews C., (Hebr.) | ..... | ..... | 29.76 | 755.9 | 38 | 3.3 | ..... | NNE | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded... | Rev. C. H. Griffith, F.M. |
| Stratfield Turgiss | 29.56 | 750.8 | 29.78 | 756.4 | 41.8 | 5.4 | ..... | NW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | Blue sky..... | John Trotter. |
| Thurso | ..... | ..... | 29.71 | 754.6 | 35 | 1.7 | ..... | NW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | W. Newcombe. |
| Truro, Royal Institution | ..... | ..... | 29.93 | 760.2 | 47 | 8.3 | ..... | NW | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff. |
| Valencia, Observatory | ..... | ..... | 30.01 | 762.2 | 45.4 | 7.4 | ..... | NW | 14 | 6.3 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | Henry Mercer. |
| Gulf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Francis Abbott, F.R.A.S. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.94 | 760.5 | 72.0 | 22.2 | 88 | NW | ..... | ..... | 2 | ..... | 5k | ..... | ..... | 0 | 0 | ..... | Andrew Gibb. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Meldrum. |
| Mauritius, Observatory | 29.84 | 757.9 | 30.02 | 762.6 | 83.0 | 28.7 | 66 | E | 13.5 | 6.0 | ..... | 3 | 4 | ..... | E | 0.02 | 0.5 | Cloudy; fine | R. L. J. Ellery. |
| Melbourne, Observatory | 29.98 | 761.5 | 30.07 | 763.8 | 66.4 | 19.1 | 65 | N | 8 | 3.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Fine..... | J. Youngclause. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1, 400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m.

| Marine Series. Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 1—10. | Clouds. Amount. Upper. 0—10. | Clouds. Amount. Low'r. 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Algeria, N. 53° 30′, W. 8° 40′ | ..... | ..... | 29.75 | 755.6 | 38.0 | 3.3 | ..... | NNW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | Smooth | Snowing..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. E. Monland. |
| Ship Camperdown | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. C. Prehn. |
| S. S. Peruvian, N. 54° 40′, W. 13° 10′ | ..... | ..... | 29.95 | 760.7 | 47 | 8.3 | ..... | NW | ..... | ..... | 5 | ..... | 6 | ..... | ..... | 5 | NW | D. clouds.... | Capt. W. H. Smith, R. N. [R. |
| Royal Alice | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Longley. |

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.22 | 666.0 | | | 71.2 | 21.8 | 89 | NE | | | 2 | | 10nd | | E | 0.7* | 18.* | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation. *Rain-fall in 48 hours.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.30 | 744.3 | 29.35 | 745.5 | 39.9 | 4.4 | 45 | WNW | | | 4 | | 3 | | | | | | |
| Faröe | 29.37 | 746.0 | 29.39 | 746.5 | 39.0 | 3.9 | 70 | W | | | 4 | | 5 | | | | | | |
| Godthaab, (Greenland) | 29.27 | 741.2 | 30.01 | 762.3 | 33.4 | 0.8 | 83 | ENE | | | 4 | | 3 | | | | | | |
| Stykkisholm, (Iceland) | 30.22 | 767.5 | 30.26 | 768.6 | 33.6 | 0.9 | 89 | E | | | 6 | | 0 | | | | | | |
| Thorshavn, (Faröe) | 29.84 | 758.0 | 29.88 | 758.9 | 32.4 | 0.2 | 65 | N | | | 5 | | 10 | | | | | | |
| Vestervig | 29.17 | 740.9 | 29.34 | 745.2 | 40.3 | 4.6 | 79 | NW | | | 4 | | 3 | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.34 | 745.1 | 29.89 | 759.1 | 46.4 | 8 | 77 | N | | | 1 | | 5 | | | 0.322 | 8.2 | Cloudy | Collignon, Director. |
| Amiens, Normal School | 29.61 | 752.0 | 29.72 | 754.8 | 42.1 | 5.6 | 61 | W | | | 2 | | 2 | | W | 0 | 0 | Slightly cl'dy | Bonvarne, Director. |
| Avignon, Normal School | 29.57 | 751.0 | 29.65 | 753.0 | 56.1 | 13.4 | 55 | SW | | | 2 | | 10 | | | 0.071 | 1.8 | Covered | Mr. Giraud, Director |
| Bar-sur-Seine | 29.11 | 739.5 | 29.69 | 754.0 | 37.0 | 2.8 | 71 | NE | | | 1 | | 10 | | | 0.205 | 5.2 | Covered | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Chenx. |
| Beauvais | | | | | 40.1 | 4.5 | 35 | NNW | | | 3 | | 8 | | NNW | 0.043 | 1.10 | Very cloudy | Normal School. |
| Besançon | 28 72 | 729.5 | 29.63 | 752.7 | 36.5 | 2.5 | 91 | NNW | | | 3 | | 10 | | | 0.346 | 8.8 | Covered | Normal School. |
| Bourg-en-Bresse | 28.75 | 730.3 | 29.65 | 753.2 | 34.7 | 1.5 | 96 | N | | | 4 | | 10n | | N | | | Rain & snow | Normal School. |
| Bourges, Normal School | 29.34 | 745.2 | 29.91 | 759.6 | 42.8 | 6 | 52 | NE | | | 1 | | 8 | | S | 0.016 | 0.4 | Very cloudy | A. Wagner, Director. |
| Brest, Naval Observatory | 29.73 | 755.2 | 29.95 | 760.7 | 44.4 | 6.9 | 65 | NNW | | | 2 | | 2 | | NNW | 0.089 | 2.26 | Snow-squalls | The Staff. |
| Carcassonne, Normal School | 29.30 | 744.2 | 29.71 | 754.7 | 50.7 | 10.4 | 86 | W | | | 2 | | 2 | | NW | 0 | 0 | Slightly cl'dy | Vateau, Director. |
| Caen | 29.76 | 755.8 | 29.83 | 757.7 | 41.0 | 5 | 70 | WNW | | | 4 | | 5 | | N | 0.24 | 6. | Cloudy | Normal School. |
| Chartres, Normal School | 29.17 | 740.9 | 29.76 | 755.8 | 34.5 | 1.4 | 96 | N | | | 4 | | 10 | | | 0.252 | 6.4 | Covered | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.34 | 745.1 | 29.66 | 753.4 | 38.3 | 3.5 | 73 | NW | | | 3 | | 8n | | NW | 0 | 0 | Very cloudy | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.26 | 717.8 | 29.67 | 753.5 | 37.8 | 3.2 | 83 | NW | | | 3 | | 10 | | NW | 0.008 | 0.2 | Covered | Alluard, Director. |
| Commercy, Normal School | 28.78 | 731.0 | 29.69 | 754.0 | 35.2 | 1.8 | 87 | NNW | | | 4 | | 8 | | NNW | 0.110 | 2.8 | Very cloudy | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.93 | 734.9 | 29.68 | 753.9 | 52.0 | 11.1 | 80 | W | | | 2 | | 10 | | W | 0.244 | 6.2 | Covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 29.63 | 752.6 | 29.93 | 760.1 | 43.5 | 6.4 | 60 | W | | | 4 | | 8 | | W | 0.059 | 1.5 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.50 | 749.3 | 29.82 | 757.3 | 39.9 | 4.4 | 69 | NE | | | 2 | | 5 | | NE | 0.150 | 3.8 | Cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.62 | 726.9 | 29.54 | 750.4 | 37.4 | 3 | 93 | NE | | | 2 | | 10 | | NE | 0.071 | 1.80 | Snowing | Voudez, Director. |
| Lorient, Naval Observatory | 29.83 | 757.6 | 29.93 | 760.2 | 44.6 | 7.0 | 62 | NW | | | 4 | | 8 | | NW | 0.094 | 2.4 | ¾ covered | T. Carré, Director. |
| Mâcon, Normal School | 28.89 | 733.9 | 29.59 | 751.5 | 46.2 | 7.9 | 83 | N | | | 2 | | 5 | | N | 0 | 0 | Cloudy | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | 28.66 | 725.4 | 29.64 | 752.9 | 34.3 | 1.3 | 85 | NNW | | | 2 | | 10 | | SSE | 0.181 | 4.6 | Covered | Normal School. |
| Nismes, Normal School | 29.43 | 747.4 | 29.63 | 752.5 | 60.4 | 15.8 | 53 | SW | | | 2 | | 5 | | SW | 0.04 | 1. | Covered | Boyer, Director. |
| Orleans, Normal School | 29.35 | 745.4 | 29.73 | 755.1 | 40.3 | 4.6 | 56 | N | | | 2 | | 10 | | | 0.08 | 2. | Covered | Bernard, Director. |
| Paris, Observatory | 29.49 | 749.1 | 29.74 | 755.4 | 37.6 | 3.1 | 63 | WNW | | | 1 | | 6 | | | 0.236 | 6.00 | Cloudy | National Observatory. |
| Privas | 28.58 | 725.9 | 29.64 | 752.8 | 52.7 | 11.5 | 61 | SW | | | 2 | | 5 | | SW | 0 | 0 | Cloudy | Normal School |
| Puy de Dome (Summit) | | | | | | | | | | | | | | | | | | | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.84 | 757.8 | 29.87 | 758.6 | 48.9 | 9.4 | 69 | NW | | | 3 | | 5 | | NW | 0 | 0 | ¾ covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.69 | 754.1 | 29.78 | 756.3 | 41.9 | 5.5 | 45 | NNE | | | 3 | | 10 | | NW | 0.024 | 0.6 | Covered | F. Lucard, Director. |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | M. H. Hercouet. |
| Tarbes, Normal School | 28.81 | 731.8 | 29.89 | 759.2 | 53.6 | 12 | 65 | ESE | | | 4 | | 10 | | | 0.43 | 11. | Raining | T. Hugues, Director. |
| Villefranche | 28.91 | 734.4 | 29.63 | 752.6 | 47.3 | 8.5 | 83 | W | | | 4 | | 8 | | N | 0 | 0 | Very cloudy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.84 | 757.8 | 29.86 | 758.5 | 78.8 | 26 | | | | | | | | | | 0 | 0 | | L'Abbé Marchési. |
| Lyons | | | 29.63 | 752.5 | 46.4 | 8.0 | | | | | | | 10 | | | 0 | 0 | | M. Jeys. |
| Marseilles, Observatory | | | 29.61 | 752.2 | 52.5 | 11.4 | 62 | WSW | | | 1–2 | | 10 | | | 0.126 | 3.20 | Covered | The Staff. |
| Mont-Louis | 24.54 | 623.2 | 29.85 | 758.2 | 42.6 | 5.9 | 43 | WSW | 14.9 | 6.66 | | | 3 | | W | 0.051 | 1.3 | | Mr. Falgnère. |
| Nice | 29.50 | 749.3 | 29.58 | 751.3 | 55.8 | 13.2 | 86 | NW | | | 10 | | 10 | | WSW | 0.098 | 2.5 | Raining | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.45 | 748.0 | 29.72 | 755.0 | 37.0 | 2.8 | 65 | NW | | | 2–3 | | 7 | | NW | 0.295 | 7.5 | | Marié Davy, Director |
| Perpignan | | | 29.66 | 753.4 | 53.8 | 11.9 | 56 | NW | 26.1 | 11.67 | | | 6 | | NW | 0.024 | 0.6 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.17 | 563.1 | | | 25.2 | — 3.8 | | WSW | | | 8 | | 10 | | | 0.421 | 10.7 | Snowy | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.57 | 751.0 | 29.73 | 755.2 | 40.6 | 4.8 | 56 | NW | | | 3 | | 6 | | WNW | 0.142 | 3.6 | Snowing | E. Renou. |
| Toulouse, Observatory | 29.06 | 738.1 | 29.78 | 756.3 | 49.8 | 9.9 | 69 | NW | | | 6 | | 9 | | | 0.024 | 0.60 | Raining | The Staff. |
| Tours | 29.60 | 751.8 | 29.80 | 756.8 | 43.5 | 6.4 | 57 | NW | | | 3 | | 10 | | NW | 0.307 | 7.8 | | C. Marquet. |
| Versailles, (near Paris) | | | 29.72 | 754.9 | 39.9 | 4.4 | 52 | N | | | 1 | | 7 | | | 0.218 | 5.54 | Fair | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.04 | 762.9 | 30.06 | 763.5 | 53.6 | 12.0 | 65 | SE | 14.5 | 6.5 | | | 0 | | | 0 | 0 | Clear | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,686.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 29.36 | 745.7 | 29.54 | 750.3 | 42.4 | 5.8 | 66 | S | | | 1 | | 6 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 28.99 | 736.4 | 29.52 | 749.7 | 35.4 | 1.9 | 91 | ESE | | | 1 | | 10 | | | 0.112 | 2.86 | Rain & snow | Royal University Obs'y |
| Carlsruhe | 29.13 | 739.8 | 29.56 | 750.8 | 33.8 | 1.0 | 92 | NNW | | | 2 | | 10 | | | 0.512 | 13.0 | Heavy snow | Albert Senz. |
| Cassel | 28.93 | 734.8 | 29.53 | 750.0 | 38.1 | 3.4 | 76 | NNW | | | 5 | | 6 | NW | | 0.016 | 0.37 | | Dr. H. Möhl. |
| Crefeld | 29.38 | 746.2 | 29.54 | 750.3 | 40.6 | 4.8 | 72 | NW | | | 4 | | 8n | | | | | Snow & graupel. | Director Lose. |
| Emden | 29.54 | 750.3 | 29.58 | 751.2 | 41.9 | 5.5 | 53 | NW | | | 0 | | 1 | | | 0.008 | 0.2 | | Prof. Prestel. |
| Frankfort on the Main | 29.25 | 743.0 | 29.63 | 752.5 | 40.3 | 4.6 | 54 | NW | | | 1 | | 9 | | | 0.260 | 6.6 | | Physical Society. |
| Friedrichshafen | 28.09 | 713.5 | 29.54 | 750.3 | 41.4 | 5.2 | 87 | SSW | | | 4 | | 10 | WSW | | 0.236 | 6.0 | | M. Wilhelm. |
| Hamburg | 29.39 | 746.5 | 29.46 | 748.3 | 39.6 | 4.2 | 65 | WSW | | | 4 | | 7c;k | | | 0.008 | 0.2 | Fine | Captain F. Hegemann. |
| Kiel | 29.42 | 747.3 | 29.44 | 747.7 | 36.0 | 2.2 | 87 | NW | | | 3 | | 10 | | | 0.036 | 0.91 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.35 | 745.5 | 29.53 | 750.0 | 37.4 | 3.0 | 62 | W | | | | | | | | 0.078 | 1.97 | Snowing | Prof. E. Luther. |
| Köslin | | | 29.41 | 746.9 | 37.9 | 3.3 | | W | | | 2 | | 3 | | | Blank | Blank | | H. Müller. |
| Leipsic, Observatory | 29.11 | 739.3 | 29.54 | 750.2 | 37.0 | 2.8 | 75 | NW | | | 1 | | 10 | | | 0.087 | 2.2 | Light snow | Prof. Bruhns. |
| Memel, Naval School | 29.37 | 745.9 | 29.41 | 747.0 | 38.3 | 3.5 | 77 | SW | | | 5 | | 4s;ks | | | | | | Reinbrecht von Skalweit. |
| Neufahrwasser | 29.43 | 747.5 | 29.45 | 747.9 | 39.9 | 4.4 | 53 | W | | | 3 | | 10 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.28 | 743.7 | 29.58 | 751.3 | 40.6 | 4.8 | 65 | W | | | 5 | | 10 | | | 0 | 0 | Cloudy | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.04 | 737.5 | 29.61 | 752.0 | 33.6 | 0.9 | 92 | NNE | | | 2 | | 10 | | | 0.090 | 2.29 | Snowing | Dr. Schur. |
| Stuttgart | 28.56 | 725.5 | 29.53 | 750.0 | 34.7 | 1.5 | 91 | N | | | 1 | | 10 | | | 0.126 | 3.2 | Rain & snow | Prof. Schoder. |
| Treves, (Trier) | 29.00 | 736.5 | 29.51 | 749.6 | 41.0 | 5.0 | 53 | SW | | | 3 | | 10 | | | 0.222 | 5.64 | Foggy | Prof. Flesch. |
| Weissenburg, (Bavaria) | 27.96 | 710.1 | 29.48 | 748.8 | 40.1 | 4.5 | 86 | W | 2 | 1 | | | 10 | | WNW | 0.036 | 0.9 | Raining | Dr. Von Bebber. |
| Wustrow, Naval School | 29.49 | 749.0 | 29.53 | 750.0 | 37.4 | 3.0 | 83 | W | | | 2 | | 7 | | | 0.093 | 2.36 | Cloudy | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.56 | 750.9 | 29.96 | 760.9 | 58.6 | 14.8 | | SW | | | 2.0 | | | | | | | Dusty | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.88 | 759.0 | 29.94 | 760.3 | 81.7 | 27.6 | 65 | WSW | 21.0? | 9.4? | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.46 | 748.2 | 29.92 | 759.9 | 97.8 | 36.6 | 18 | Calm | | | | | 1 | WNW | | 0 | 0 | D. clouds | |
| Bombay | 29.84 | 757.9 | 29.88 | 758.8 | 86.5 | 30.3 | 62 | NNW | 16.0 | 7.2 | | | 3 | SSW | | 0 | 0 | D. clouds | |
| Poona | 27.86 | 707.6 | 29.80 | 757.0 | 94.3 | 34.6 | 32 | ESE | | | | | 7 | | SE | 0 | 0 | D. clouds | |
| Lahore | 29.20 | 741.6 | 29.94 | 760.5 | 81.6 | 27.6 | 42 | Calm | 2.9 | 1.3 | | | 8 | | | 0 | 0 | Cloudy | |
| Belgaum | 27.37 | 695.1 | 29.84 | 758.0 | 89.5 | 31.9 | 45 | W | 4.0 | 1.8 | | | 3 | | | 0 | 0 | Misty | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 29.02 | 737.2 | 29.92 | 760.0 | 81.0 | 27.2 | 43 | Calm | 2.3 | 1.0 | | | 8 | | | 0 | 0 | | |
| Agra | 29.40 | 746.8 | 29.96 | 761.0 | 89.7 | 32.1 | 25 | W | | | | | 2 | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.88 | 733.5 | 29.90 | 759.4 | 93.5 | 34.2 | 22 | Calm | 3.9 | 1.7 | | | 9 | NE | | 0 | 0 | D. clouds | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.57 | 751.2 | 29.94 | 760.5 | 88.2 | 31.2 | 60 | WSW | 4.8 | 2.2 | | | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.61 | 752.2 | 29.92 | 760.0 | 87.4 | 30.8 | 31 | Calm | 1.3 | 0.6 | | | 3 | | | 0 | 0 | D. clouds | |
| Patna | 29.73 | 755.1 | 29.91 | 759.6 | 89.4 | 31.9 | 18 | W | 2.0 | 0.9 | | | 2 | W | W | 0 | 0 | | |
| Hazaribagh | 27.94 | 709.5 | 29.93 | 760.2 | 84.8 | 29.3 | 17 | WNW | 5.1 | 2.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.84 | 758.0 | 29.92 | 760.0 | 90.1 | 32.3 | 41 | S | 2.6 | 1.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.92 | 760.1 | 29.95 | 760.6 | 83.8 | 28.8 | 54 | WNW | 5.0 | 2.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.59 | 751.6 | 29.98 | 761.5 | 81.4 | 27.4 | 45 | NE | 4.2 | 1.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.86 | 758.4 | 29.95 | 760.8 | 83.9 | 28.8 | 64 | Calm | 4.9 | 2.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Sibsagar | 29.64 | 752.7 | 29.98 | 761.4 | 76.1 | 24.5 | 71 | SSE | 1.9 | 0.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.59 | 726.2 | 29.93 | 760.3 | 91.5 | 33.1 | 27 | NW | 1.9 | 0.8 | | | 3 | SW | | 0 | 0 | Overcast | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.8 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.18 | 741.2 | 29.60 | 751.8 | 48.9 | 9.4 | 80 | SW | 6.3 | 2.8 | ..... | ..... | 10 | ..... | ..... | 0.020 | 0.5 | ..... | Prof. Giovanni Cod |
| Padua | 29.43 | 747.5 | 29.54 | 750.3 | 54.5 | 12.5 | 65 | NNE | 8.7 | 3.9 | ..... | ..... | 10 | SW | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzi |
| Vicenza | 29.37 | 746.0 | 29.57 | 751.0 | 47.3 | 8.5 | 83 | N | 5.6 | 2.5 | ..... | ..... | 10 | S | ..... | 0.071 | 1.8 | ..... | Conte Alm. Da Sch |
| Bergamo | 28.17 | 715.6 | 29.51 | 749.5 | 46.4 | 8.0 | 62 | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.295 | 7.5 | ..... | Prof. Trionfini Car |
| Milan | 29.00 | 736.7 | 29.52 | 749.9 | 51.4 | 10.8 | ..... | E | ..... | ..... | 1 | ..... | 10 | E | ..... | 0.268 | 6.8 | ..... | Prof. Schiaparelli. |
| Moncalieri | 28.56 | 725.4 | 29.48 | 748.7 | 55.4 | 13.0 | 64 | SSE | 6.3 | 2.8 | ..... | ..... | 9 | N | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 27.58 | 700.4 | 29.51 | 749.5 | 53.8 | 12.1 | 61 | NW | ..... | ..... | 4 | ..... | 9 | WSW | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.36 | 745.8 | 29.59 | 751.5 | 52.3 | 11.3 | 77 | SW | ..... | ..... | 8 | ..... | 10 | SW | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.40 | 746.7 | 29.57 | 751.1 | 54.1 | 12.3 | 76 | SW | 12.5 | 5.6 | ..... | ..... | 10 | S | ..... | 0.039 | 1.0 | ..... | Prof. G. M. Garibi |
| Parma | 29.22 | 742.1 | 29.53 | 750.1 | 56.5 | 13.6 | 60 | SSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.35 | 745.5 | 29.61 | 752.1 | 59.0 | 15.0 | 61 | S | ..... | ..... | 4 | ..... | 10 | SW | ..... | 0.150 | 3.8 | ..... | Cav. F. Meucci. |
| Leghorn | 29.55 | 750.6 | 29.64 | 752.8 | 59.0 | 15.0 | 62 | S | 6.9 | 3.1 | ..... | ..... | 10 | S | ..... | 0.571 | 14.5 | ..... | Prof. P. Monte. |
| Pesaro | 29.58 | 751.4 | 29.63 | 752.7 | 59.5 | 15.3 | 60 | S | 6.3 | 2.8 | ..... | ..... | 10 | SW | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.11 | 713.9 | 29.67 | 753.7 | 53.6 | 12.0 | 56 | SSW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.61 | 752.1 | 29.72 | 755.0 | 59.0 | 15.0 | 71 | SSE | ..... | ..... | 4 | ..... | 8 | S | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.58 | 751.3 | 29.76 | 755.8 | 58.6 | 14.8 | 56 | S | 16.8 | 7.5 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Fer |
| Naples, O. U | 29.62 | 752.3 | 29.82 | 757.4 | 58.3 | 14.6 | 70 | SW | ..... | ..... | 4 | ..... | 10 | SSW | ..... | 0.134 | 3.4 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 57.7 | 14.3 | 55 | SE | 11.9 | 5.3 | ..... | ..... | 4 | S | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.64 | 750.4 | 29.74 | 755.3 | 61.7 | 16.5 | 42 | W | ..... | ..... | 2 | ..... | 8 | W | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.00 | 736.7 | 29.90 | 759.4 | 59.0 | 15.0 | 74 | NW | 0.7 | 0.3 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.56 | 750.7 | 29.81 | 757.2 | 61.5 | 16.4 | 46 | WSW | 8.1 | 3.6 | ..... | ..... | 5 | ..... | ..... | 0.114 | 2.9 | ..... | Prof. G. Cacciatore |
| Syracuse | 29.78 | 756.4 | 29.85 | 758.3 | 60.8 | 16.0 | 65 | SW | ..... | ..... | 1 | ..... | 10 | SW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.28 | 743.6 | 29.83 | 757.7 | 52.5 | 11.4 | 83 | WNW | 4.9 | 2.2 | ..... | ..... | 10 | NW | ..... | 0.268 | 6.8 | ..... | Prof. F. Brioschi |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. Th elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 29.89 | 759.2 | 29.96 | 761.0 | 47.1 | 8.4 | 74 | SW | 8.7 | 3.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| Tokei (Yeddo) University | 29.85 | 758.2 | 29.95 | 760.8 | 47 | 8.3 | 73 | W | 6 | 2.7 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear. | Prof. P. V. Veeder. |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Castillo, A. E. |
| Guadalajara | 25.04 | 636.0 | 30.04 | 763.1 | 54.5 | 12.5 | 65 | SW | 5.1 | 2.3 | ..... | 0 | 6 | ..... | SW | 0 | 0 | ½ cloudy | Prof. L. Perez. |
| Guanajuato | 23.66 | 601.2 | 29.93 | 760.2 | 58.6 | 14.8 | 70 | E | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | Prof. V. Fernande |
| Leon | ..... | ..... | ..... | ..... | 59.2 | 15.1 | 74 | Calm | 0 | 0 | ..... | 0 | 1ks | ..... | W | 0 | 0 | Clear | Prof. M. Leal. |
| Mexico | 23.07 | 585.9 | 30.19 | 766.9 | 50.9 | 10.5 | 58 | Calm | 0 | 0 | ..... | 0 | 2s | ..... | ..... | 0 | 0 | Clear. | Central Observato |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 51.4 | 10.8 | 62 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Dry fog | M. V. de Leon, M. |
| Puebla | 23.33 | 592.7 | 30.08 | 763.9 | 45.0 | 7.2 | 70 | E | ..... | ..... | ..... | 1c | 2cs | WSW | ..... | 0 | 0 | Clear | Prof. B. Gonzalez |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez |
| Tlacotalpam | 30.03 | 762.8 | 30.05 | 763.1 | 63.5 | 17.5 | 89 | S | 0.9 | 0.4 | ..... | 7c | 0 | WSW | ..... | 0 | 0 | Cloudy | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D |
| Vera-Cruz | 30.06 | 763.5 | 30.09 | 764.1 | 68.0 | 20.0 | 72 | WNW | 3.8 | 1.7 | ..... | 4c | 8sk | SW | E | 0 | 0 | Hazy | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 50.0 | 10.0 | 58 | WSW | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | J. A. Bonilla, M. |
| Puebla, (Catholic Institute) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Spina, [M. M. |
| Morelia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Tena, F. L. Par |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft. Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft. Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.4 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known The data are publishe as given.

## NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.65 | 753.2 | 29.65 | 753.2 | 37.0 | 2.8 | ..... | NNW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.016 | 0.4 | ..... | |
| Groningen | 29.46 | 748.3 | 29.52 | 749.7 | 39.4 | 4.1 | ..... | NNW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.031 | 0.8 | ..... | |
| Helder | 29.56 | 750.7 | 29.56 | 750.7 | 35.4 | 1.9 | ..... | WNW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.035 | 0.9 | ..... | |
| Hellevoetsluis | 29.62 | 752.4 | 29.62 | 752.4 | 41.7 | 5.4 | 82 | NW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.54 | 750 2 | 29.58 | 751.4 | 40.3 | 4.6 | 71 | WNW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0.134 | 3.4 | Very cloudy | H. v d Brink. |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give th humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper an lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.36 | 745.7 | 29.41 | 747.1 | 36.7 | 2.6 | 72 | NW | 7.8 | 3.5 | ..... | ..... | 1 | ..... | ..... | 0.031 | 0.8 | ..... | ..... |
| Brönö | 29.23 | 742.4 | 29.27 | 743.4 | 32.7 | 0.4 | 75 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... |
| Christiania | 29.12 | 739.6 | 29.27 | 743.4 | 37.9 | 3.3 | 41 | N | 11 | 5 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | ..... |
| Tromsö | 29.43 | 747.5 | 29.47 | 748.6 | 24.4 | — 4.2 | 59 | NE | 11 | 5 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.02 | 762.5 | 30.21 | 767.4 | 61.3 | 16.3 | 89 | W | 9.8 | 4.4 | ..... | ..... | 2 | ..... | ..... | 1.181 | 30.0 | ..... | Dr. J. A. Sampaio |
| Campo Major | 29.01 | 736.8 | 30.04 | 763.1 | 56.3 | 13.5 | 88 | WNW | 7.4 | 3.3 | ..... | ..... | 10 | WSW | ..... | 0.051 | 1.3 | Raining | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.17 | 766.2 | 30.25 | 768.4 | 66.2 | 19.0 | 61 | W | 15.4 | 6.9 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.71 | 754.5 | 30.07 | 763.7 | 55.4 | 13.0 | 88 | WSW | 18.6 | 8.3 | ..... | ..... | 10 | ..... | ..... | 0.264 | 6.7 | Raining | The Staff. |
| Ponta Delgada, (Azores) | 30.17 | 766.3 | 30.26 | 768.5 | 63.3 | 17.4 | 82 | WNW | 6.3 | 2.8 | ..... | ..... | 3 | ..... | ..... | 0.315 | 8.0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.73 | 755.1 | 29.73 | 755.2 | 69.6 | 32.0 | ..... | ENE | ..... | ..... | 2 | ..... | 1 | ..... | ENE | 1 | ..... | Blue sky | J. F. R. R. Bastos, Com'd't. A. J. de Mattos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Sado, Porto Praya, Cape Verde Islands | 30.12* | 765.0* | 30.13* | 765.3* | 77.0 | 25.0 | ..... | NNE | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 3 | NE. | Blue sky | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.83 | 757.6 | 29.83 | 757.7 | ..... | ..... | ..... | WNW | ..... | ..... | 2 | ..... | 6 | ..... | WNW | 1 | ..... | Blue sky | F. Texeira da Silva, Com'd't. F. J. Ferreina, dos Amas, Com' |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.11 | 739.3 | 29.54 | 750.4 | 35.2 | 1.8 | 90 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing | Astronomical Obs. |
| Wilna | 29.06 | 738.2 | 29.49 | 749.1 | 36.5 | 2.5 | 80 | SW | 2 | 1 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 28.99 | 736.4 | 29.24 | 742.6 | 35.2 | 1.8 | 78 | WSW | 13 | 6 | ..... | ..... | 5k | ..... | ..... | ..... | ..... | Snowing | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.10 | 739.0 | 29.11 | 739.4 | 31.3 | — 0.4 | 76 | WSW | 22 | 10 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 28.54 | 724.9 | 28.86 | 733.1 | 29.7 | — 1.3 | 100 | S | 13 | 6 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Ch. Forsten. |
| Kieff | 29.03 | 737.3 | 29.67 | 753.7 | 48.5 | 6.4 | 68 | W | 9 | 4 | ..... | ..... | 10k;ks;c | ..... | ..... | ..... | ..... | ..... | Physical Cabinet |
| Nikolaiev | 29.84 | 757.9 | 29.91 | 759.7 | 46.4 | 8.0 | 62 | SSW | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.97 | 761.2 | 29.99 | 761.7 | 41.7 | 5.4 | 92 | SSW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 28.92 | 734.5 | 29.48 | 748.7 | 36.0 | 2.2 | 61 | SW | 9 | 4 | ..... | ..... | 1k | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.55 | 750.6 | 29.76 | 755.9 | 44.6 | 7.0 | 83 | W | 9 | 4 | ..... | ..... | 6ck | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.07 | 738.4 | 29.09 | 738.9 | 35.2 | 1.8 | 71 | SSE | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.49 | 723.6 | 29.94 | 760.4 | 43.0 | 6.1 | 56 | NNW | 22 | 10 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 29.89 | 759.3 | 29.81 | 757.2 | 39.6 | 4.2 | 84 | WNW | 11 | 5 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | Heavy clouds | Sebastianof. |
| Kasan | 29.32 | 744.6 | 29.59 | 751.6 | 37.6 | 3.1 | 60 | S | 4 | 2 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | Light clouds | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.76 | 730.4 | 29.72 | 754.8 | 37.6 | 3.1 | 50 | SE | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.30 | 744.2 | 29.53 | 750.1 | 52.9 | 11.6 | 94 | ENE | 20 | 9 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.21 | 716.4 | 29.92 | 759.9 | 50.9 | 10.5 | 95 | NNW | 2 | 1 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Raining | Michelson. |
| Barnaul | 29.84 | 745.3 | 29.89 | 759.1 | 32.4 | 0.2 | 83 | SW | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.07 | 738.4 | 29.40 | 746.7 | 29.1 | — 1.6 | 94 | NW | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Krotkowo* | 29.14 | 740.1 | 29.61 | 752.2 | 40.6 | 4.7 | 68 | S | 4 | 2 | ..... | ..... | 3ks | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Peking, (China) | 29.61 | 752.1 | 29.75 | 755.7 | 57.0 | 13.9 | 26 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.62 | 701.6 | 29.81 | 757.1 | 13.1 | —10.5 | 49 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 16.3 | — 8.7 | 91 | E | 2 | 1 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47', E. 48° 34'.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | ..... | ..... | 29.60 | 751.7 | 63.9 | 17.7 | 34 | WSW | 7.6 | 3.39 | ..... | 0 | 3k | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.95 | 760.6 | 30.00 | 762.1 | 48.6 | 9.2 | 93 | NW | 4.2 | 1.86 | ..... | ..... | 10 | ..... | ..... | 0.488 | 12.4 | Raining | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.94 | 684.2 | ..... | ..... | 51.8 | 11.0 | 65 | W | 10.2 | 4.55 | ..... | 0 | 8 | ..... | ..... | 0 | 0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.67 | 702.8 | 29.88 | 758.9 | 58.6 | 14.8 | 31 | W | 28.4 | 12.67 | ..... | 0 | 7 | ..... | ..... | 0.012 | 0.3 | Cloudy | The Staff. |
| Murcia, Met. Obs'y | 29.76 | 755.9 | 29.91 | 759.7 | 68.4 | 20.2 | 44 | W | 5.3 | 2.36 | ..... | 4 | 4 | E | ..... | 0 | 0 | Almost cov. | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.07 | 738.4 | 29.98 | 761.4 | 52.0 | 11.1 | 67 | NNE | 8.7 | 3.89 | ..... | ..... | 8 | ..... | ..... | 0.020 | 0.5 | Almost cov. | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.88 | 758.8 | 29.94 | 760.5 | 73.8 | 23.2 | 74 | WNW | 9.4 | 4.2 | ..... | 4ck | 5k | SW | WNW | 0.051 | 1.3 | Fair | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 30.05 | 763.2 | 30.15 | 765.8 | 57.4 | 14.1 | 45 | SW | 21.3 | 9.5 | ..... | 4 | 6 | WSW | W | 0.345 | 8.8 | ..... | Capt. C. Pulazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.91 | 759.6 | 30.00 | 761.9 | 79.3 | 26.3 | 74 | SE | 0 | 0 | ..... | 8s | 2k | SE | SE | 0 | 0 | Clear | Leonardo de Tejeda, Chief of Engineers. |

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft. The barometer readings at Barcelona are published as given.

## SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-10. | Clouds. Amount. Up'er 0-10. | Clouds. Amount. Low'r 0-10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.05 | 737.8 | 29.09 | 738.8 | 23.7 | — 4.6 | ..... | NE | ..... | ..... | 6 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.06 | 738.0 | 29.11 | 739.3 | 29.5 | — 1.4 | 72 | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.06 | 738.0 | 29.11 | 739.3 | 31.8 | — 0.1 | 63 | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 28.98 | 736.1 | 29.16 | 740.6 | 30.7 | — 0.7 | 70 | WSW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.19 | 741.4 | 29.25 | 742.9 | 35.6 | 2.0 | 64 | WNW | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0.035 | 0.9 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.09 | 738.9 | 29.17 | 740.8 | 29.1 | — 1.6 | 77 | WSW | 3.6 | 1.6 | ..... | ..... | 10 | ..... | ..... | 0.037 | 0.95 | Snowing | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.12 | 714.3 | 29.59 | 751.6 | 40.1 | 4.5 | 85 | SSW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.039 | 1.0 | Raining | The Observatory. |
| Zurich | 27.90 | 708.6 | 29.60 | 751.7 | 37.4 | 3.0 | 94 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 1.158 | 29.4 | Rain & snow | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —10.1 mm.; Thermometer, —4.2 cent.; Relative Humidity, +25 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.01 | 762.2 | 54.1 | 12.3 | 52 | SW | 7 | 3.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stéfanidès. |
| Varna | ..... | ..... | 29.92 | 760.0 | 58.2 | 12.9 | ..... | W | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria.) Lee Obs'y | 29.94 | 760.5 | 30.06 | 763.5 | 62.1 | 16.7 | 54 | WNW | ..... | ..... | 1 | ..... | 2ks | ..... | SW | 0.12 | 3.0 | D. clouds | Imperial Observatory. |
| | | | | | | | | | | | | | | | | | | | Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.42 | 747.3 | 29.48 | 748.8 | 19.6 | — 6.9 | 48 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | ..... | ..... | Fine | Hon. J. Ferguson. |
| Brockville, Ontario | 29.40 | 746.7 | 29.71 | 754.6 | 36 | 2.2 | ..... | SW | 10 | 4.5 | ..... | ..... | 8s | ..... | SW | 0.06 | 1.5 | Clearing | W. R. Bigg. |
| *Chatham, N B | 29.35 | 745.5 | 29.41 | 747.0 | 20 | — 6.7 | 82 | W | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | G. A. Blair. |
| Charlottetown, P. E. Island | 29.34 | 745.2 | 29.39 | 746.5 | 20 | — 6.7 | 63 | W | 15 | 6.7 | ..... | ..... | 8ks | ..... | W | 0 | 0 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.40 | 746.7 | 29.60 | 751.8 | 36.5 | 2.5 | 92 | NW | ..... | ..... | 4 | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | James Smith, M. A |
| Dalhousie, N. B | 29.37 | 746.0 | 29.41 | 747.0 | 15.7 | — 9.1 | 86 | W | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | Clear | H. A. Johnson. |
| Esquimault, B. C | 30.04 | 763.0 | 30.08 | 764.0 | 46.3 | 7.9 | 100 | N | ..... | ..... | ..... | ..... | 4cs | 0 | ..... | 0 | 0 | Cloudy | W. H. Bevis. |
| *Father Point, Quebec | ..... | ..... | 29.54 | 750.3 | 16 | — 8.9 | 63 | N | 15 | 6.7 | ..... | 2k | 8s | W | W | 0 | 0 | Fair | J. McWilliams. |
| Fredericton, N. B | 29.58 | 750.0 | 29.60 | 751.8 | 21.8 | — 5.7 | 65 | SW | 2 | 0.9 | ..... | ..... | 10cs | ..... | W | 0 | 0 | Cloudy | Prof. Harrison. |
| *Fort Garry Manitoba | 29.22 | 742.2 | 30.07 | 763.8 | 31 | — 0.6 | 90 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.65 | 727.7 | 29.78 | 756.4 | 36 | 2.2 | 90 | SW | ..... | ..... | 2 | 1cs | 0 | NE | ..... | 0 | 0 | Clear | James Grant. |
| *Halifax, N. S | 29.41 | 747.0 | 29.65 | 750.6 | 26 | — 3.3 | 82 | W | 24 | 10.7 | ..... | 2cs | 0 | W | ..... | 0 | 0 | Fair | F. Allison, M. A. |
| Hamilton, Ontario | 29.44 | 747.8 | 29.82 | 757.4 | 36.7 | 2.6 | 89 | SW | ..... | ..... | 1 | 0 | ..... | ..... | ..... | 0 | 0 | Clear | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.38 | 746.2 | 29.41 | 747.0 | 25 | — 3.9 | 100 | S | ..... | ..... | 3 | ..... | 4s | ..... | S | 0.02 | 0.5 | Cloudy | E. Weedon. |
| *Kingston, Ontario | 29.38 | 746.2 | 29.72 | 754.9 | 36 | 2.2 | 87 | SW | 4 | 1.8 | ..... | 10cs | 0 | S | ..... | 0 | 0 | Cloudy | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.34 | 745.2 | 29.38 | 746.2 | 18.5 | — 7.5 | ..... | NW | 12 | 5.4 | ..... | 5k | 0 | NW | ..... | 0 | 0 | Fair | C. H. Rigby. |
| *Montreal, Quebec | 29.39 | 746.5 | 29.59 | 751.6 | 37 | 2.8 | 90 | NW | 20 | 8.9 | ..... | ..... | 10n | ..... | ..... | 0.03 | 0.8 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 28.93 | 734.8 | 29.63 | 752.6 | 41 | 5.0 | 78 | SW | 14 | 6.3 | ..... | 2ck | 0 | W | ..... | 0 | 0 | Fair | Rev. R. Mosley. |
| Peterboro, Ontario | 28.93 | 734.8 | 29.68 | 753.9 | 41.7 | 5.4 | 90 | SW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Bright | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.12 | 739.6 | 29.83 | 757.7 | 34 | 1.1 | 89 | SW | 7 | 3.1 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | H. Morgan. |
| Port Hastings, N. S | 29.38 | 746.2 | 29.43 | 747.5 | 23.9 | — 4.5 | ..... | NW | 7 | 3.1 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.18 | 741.2 | 29.85 | 758.2 | 35 | 1.7 | 97 | SW | 6 | 2.7 | ..... | ..... | Fog | ..... | SW | 0 | 0 | Foggy | M. Payne. |
| *Quebec, Quebec | 29.27 | 743.4 | 29.60 | 751.8 | 26 | — 3.3 | 88 | W | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0.01 | 0.3 | Light snow. | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.08 | 738.6 | 29.55 | 750.6 | 33 | 0.6 | 89 | Calm | 0 | 0 | ..... | 5ck | 0 | NW | ..... | 0 | 0 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 29.56 | 750.8 | 29.61 | 752.1 | 31 | — 0.6 | 68 | W | 8 | 3.6 | ..... | 2c | 2s | N | ..... | 0 | 0 | Fair | Dr. Gove. |
| St. John, N B | 29.46 | 748.3 | 29.63 | 752.6 | 25 | — 3.9 | 74 | W | 6 | 2.7 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Overcast | G. Murdock, C. E. |
| *Saugeen, Ontario | 28.96 | 735.6 | 29.68 | 753.9 | 42 | 5.6 | 91 | SW | 11 | 4.9 | ..... | ..... | 8ks | ..... | ..... | 0 | 0 | Cloudy | K. Stewart. |
| Stayner, Ontario | 28.84 | 732.5 | 29.62 | 752.3 | 45 | 7.2 | 68 | W | 14 | 6.3 | ..... | 8k | 0 | W | ..... | 0 | 0 | Cloudy | R. J. Cole. |
| Stratford, Ontario | 28.48 | 723.4 | 29.79 | 756.7 | 35.3 | 1.8 | 94 | SW | 12 | 5.4 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Overcast | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.35 | 745.5 | 29.39 | 746.5 | 21 | — 6.1 | 69 | W | 21 | 9.4 | ..... | ..... | 10n | ..... | W | 0 | 0 | Cloudy | T. C. Hill. |
| *Toronto, Ontario | 29.37 | 746.0 | 29.76 | 755.9 | 37 | 2.8 | 87 | SW | 9 | 4.0 | ..... | 2c | 2ks | SW | Calm | 0 | 0 | Fair | Magnetic Observatory. |
| Windsor, N S | 29.44 | 747.8 | 29.54 | 750.3 | 29.0 | — 1.7 | 50 | W | 20 | 8.9 | ..... | 2s | 4ks | ..... | ..... | 0 | 0 | Clear | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 25.0 | — 3.9 | ..... | SE | ..... | ..... | ..... | 5ks | 5n;s | ..... | ..... | 0.02 | 0.5 | Cloudy | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0–10 | CLOUDS. Amount. Up'er 0–10 | CLOUDS. Amount. Low'r 0–10 | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.57 | 751.1 | 29.80 | 756.9 | 35 | 1.7 | 70 | S | 6 | 2.7 | ..... | 8cs | Sm'e | SW | ..... | 0 | 0 | Fair | |
| Alpena, Michigan | 28.97 | 735.8 | 29.60 | 751.8 | 44 | 6.7 | 67 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | |
| Atlantic City, New Jersey | 29.97 | 761.2 | 29.99 | 761.7 | 45 | 7.2 | 92 | SW | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Augusta, Georgia | 29.92 | 760.0 | 30.10 | 764.5 | 56 | 13.3 | 81 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Threatening | |
| Baltimore, Maryland | 29.99 | 761.7 | 30.04 | 763.0 | 43 | 6.1 | 83 | SW | 6 | 2.7 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Barnegat, New Jersey | 29.94 | 760.5 | 29.96 | 761.0 | 44 | 6.7 | 75 | SW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Bismarck, Dakota | 28.12 | 714.2 | 29.97 | 761.2 | 42 | 5.6 | 83 | NW | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boise City, Idaho | 27.23 | 691.6 | 30.11 | 764 8 | 45 | 7.2 | 84 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boston, Massachusetts | 29.65 | 753.1 | 29.80 | 756.9 | 42 | 5.6 | 42 | SW | 8 | 3.6 | ..... | 5ck | 5s;hz | NW | W | 0 | 0 | Cloudy | |
| Brackettville, Texas | 28.88 | 733.5 | 29.91 | 759.7 | 56 | 13.3 | 75 | Calm | 0 | 0 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Breckenridge, Minnesota | 28.87 | 733.3 | 29.86 | 758.4 | 42 | 5.6 | 83 | N | 20 | 8.9 | ..... | 8k | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Brownsville, Texas | 29.98 | 761.5 | 30.04 | 763.0 | 61 | 16.1 | 88 | SE | 2 | 0.9 | ..... | 0* | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 29.07 | 738.4 | 29.77 | 756.1 | 36 | 2.2 | 100 | SW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 46 | 7.8 | 54 | W | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.42 | 747.3 | 29.68 | 753.9 | 38 | 3.3 | 63 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | NW | Inap. | Inap. | Cloudy | |
| Cairo, Illinois | 29.60 | 751.8 | 29.99 | 761.7 | 56 | 13.3 | 75 | S | 2 | 0.9 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Fair | |
| Camp Grant, Arizona | 25.10 | 637.5 | 29.90 | 759.4 | 50 | 10.0 | 45 | E | ..... | ..... | 1 | 5c | 5s | W | W | Inap. | Inap. | Fair | |
| Camp Verde, Arizona | 26.73 | 678.9 | 30.22 | 767.6 | 44 | 6.7 | 76 | W | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | |
| Campo, California | 27.35 | 694.7 | 29.92 | 760.0 | 43 | 6.1 | 91 | N | 2 | 0.9 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Cape Hatteras, N. Carolina | 30.04 | 763.0 | 30.05 | 763.3 | 50 | 10.0 | 79 | NE | 12 | 5.4 | ..... | 8k | 0 | SW | ..... | 0 | 0 | Fair | |
| Cape Henry, Virginia | 30.01 | 762.2 | 30.04 | 763.0 | 47 | 8.3 | 70 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 30.01 | 763.0 | 30.05 | 763.3 | 51 | 10.6 | 79 | NE | 12 | 5.4 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Fair | |
| Cape May, New Jersey | 29.97 | 761.2 | 30.00 | 762.0 | 46 | 7.8 | 77 | SW | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 30.04 | 763.0 | 30.11 | 764.8 | 51 | 10.6 | 72 | NE | 7 | 3.1 | ..... | 2cs | Haze | Calm | Calm | 0 | 0 | Fair | |
| Cheyenne, Wyoming | 24.15 | 613.4 | 30.09 | 764.3 | 40 | 4.4 | 56 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29 16 | 740 7 | 29.86 | 758.4 | 45 | 7.2 | 84 | SW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cincinnati Ohio | 29.27 | 743.4 | 29.92 | 760.0 | 43 | 6.1 | 87 | E | 2 | 0.9 | ..... | 2k | Fog | W | Calm | 0 | 0 | Foggy | |
| Cleveland, Ohio | 29.12 | 739.6 | 29.85 | 758.2 | 42 | 5.6 | 66 | S | 12 | 5.4 | ..... | 8k | 0 | SW | ..... | 0 | 0 | Fair | |
| Concho, Texas | 28.10 | 713.7 | 29.81 | 757.2 | 45 | 7.2 | 60 | NW | 4 | 1.8 | ..... | 8cs | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Corsicana, Texas | 29.56 | 750.8 | 30.04 | 763.0 | 54 | 12.2 | 67 | Calm | 0 | 0 | ..... | Haze | 2s | Calm | Calm | 0 | 0 | Fair | |
| Davenport, Iowa | 29.27 | 743.4 | 29.91 | 759.7 | 44 | 6.7 | 84 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | W | 0 | 0 | Clear | |
| Deadwood, Dakota | 25.52 | 648.2 | ..... | ..... | 36 | 2 2 | 80 | S | 1 | 0.4 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Denison, Texas | 29.25 | 742.9 | 30.05 | 763.3 | 55 | 12.8 | 62 | E | 3 | 1.3 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Denver, Colorado | 24.88 | 631.9 | 30.10 | 764.5 | 37 | 2.8 | 63 | SE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Detroit, Michigan | 29.10 | 739.1 | 29.78 | 756.4 | 38 | 3.3 | 91 | SW | 4 | 1.8 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Dodge City, Kansas | 27.34 | 694.4 | 29.77 | 756.1 | 40 | 4.4 | 82 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 29.16 | 740.7 | 29.86 | 758.4 | 42 | 5.6 | 74 | W | 1 | 0.4 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Duluth, Minnesota | 29.06 | 738.1 | 29.72 | 754.9 | 49 | 9.4 | 78 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eagle Pass, Texas | 29.26 | 743.2 | 30.00 | 762.0 | 55 | 12.8 | 87 | Calm | 0 | 0 | ..... | 10c | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Eastport, Maine | 29.54 | 750.3 | 29.60 | 751.8 | 33 | 0.6 | 55 | SW | 12 | 5.4 | ..... | 5ck | Haze | SW | ..... | 0 | 0 | Fair | |
| Erie, Pennsylvania | 29.03 | 738.6 | 29.79 | 756.7 | 43 | 6.1 | 67 | S | 3 | 1.3 | ..... | 2c | 2s | ..... | ..... | 0 | 0 | Fair | |
| Escanaba, Michigan | 28.99 | 736.3 | 29.64 | 752.8 | 41 | 5.0 | 74 | SW | 6 | 2.7 | ..... | Haze | 0 | ..... | ..... | 3 | 0 | Hazy | |
| Florence, Arizona | 29.19 | 741.4 | 29 79 | 756.7 | 51 | 10.6 | 79 | W | 1 | 0.4 | ..... | 8cs | 0 | W | ..... | 0 | 0 | Fair | |
| Fort Bayard, New Mexico | 24.07 | 611.4 | 30.07 | 763.8 | 48 | 8.9 | 85 | SW | 9 | 4.0 | ..... | ..... | 10s | ..... | SW | 0.05 | 1.3 | Cloudy | |
| Fort Craig, New Mexico | 25.48 | 647.2 | ..... | ..... | 50 | 10.0 | 79 | SE | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0.05 | 1.3 | Cloudy | |
| Fort Gibson, Indian Ter | 29.46 | 748.3 | 30.01 | 762.2 | 49 | 9.4 | 85 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.75 | 730.2 | 30.05 | 763 3 | 46 | 7.8 | 69 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.42 | 747.3 | 29.45 | 748.0 | 17 | — 8.3 | 100 | NE | 0.2 | 0.1 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Fort Sill, Indian Territory | 28.81 | 731.8 | 29.93 | 760.2 | 48 | 8.9 | 85 | NW | 8 | 3.6 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Galveston, Texas | 30.02 | 762.5 | 30.06 | 763.5 | 63 | 17.2 | 88 | Calm | 0 | 0 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Hazy | |
| Grand Haven, Michigan | 29.15 | 740.4 | 29.80 | 756.9 | 45 | 7.2 | 84 | W | 10 | 4.5 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Indianapolis, Indiana | 29.13 | 739.9 | 29.90 | 759.4 | 50 | 10.0 | 65 | SE | 5 | 2.2 | ..... | 8ck;k | 0 | NW;W | ..... | 0 | 0 | Fair | |
| Indianola, Texas | 30.04 | 763.0 | 30.06 | 763.5 | 64 | 17.8 | 94 | SE | 7 | 3.1 | ..... | 2k | Haze | SE | SE | 0 | 0 | Hazy | |
| Jacksboro, Texas | 28.89 | 733.8 | 30.02 | 762.5 | 55 | 12.8 | 50 | S | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.00 | 762.0 | 30.02 | 762.5 | 62 | 16.7 | 83 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | NE | 0.10 | 2.5 | Cloudy | |
| Keokuk, Iowa | 29.28 | 743.7 | 29.90 | 759.4 | 50 | 10.0 | 79 | SW | 5 | 2.2 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Key West, Florida | 29.88 | 758.9 | 29.92 | 760 0 | 69 | 20.6 | 85 | NW | 17 | 7.6 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Kittyhawk, North Carolina | 30.05 | 763.3 | 30.07 | 763.8 | 47 | 8.3 | 77 | E | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Knoxville, Tennessee | 29.04 | 737.6 | 30.05 | 763.3 | 49 | 9.4 | 71 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Smoky | |
| La Crosse, Wisconsin | 29.05 | 737.9 | 29.79 | 756 7 | 43 | 6.1 | 83 | S | 10 | 4.5 | ..... | 10c | 0 | S | ..... | 0 | 0 | Cloudy | |
| La Mesilla, New Mexico | 26.00 | 660.4 | 30.15 | 765.8 | 50 | 10.0 | 86 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Laredo, Texas | 29.58 | 751.3 | 29.93 | 760.2 | 55 | 12.8 | 81 | Calm | 0 | 0 | ..... | 5ck | 0 | Calm | ..... | 0 | 0 | Fair | |
| Leavenworth, Kansas | 29.10 | 739.1 | 29.94 | 760.5 | 49 | 9.4 | 85 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Los Angeles, California | 29.62 | 752.3 | 29.96 | 761.0 | 50 | 10.0 | 86 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.39 | 746.5 | 29.96 | 761.0 | 47 | 8.3 | 70 | S | 4 | 1.8 | ..... | 5ck | Sm'e | NW | Calm | 0 | 0 | Fair | |
| Lynchburg, Virginia | 29.23 | 745.0 | 30.02 | 762.5 | 43 | 6.1 | 58 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 28.90 | 734 0 | 29.59 | 751.6 | 49 | 9.4 | 71 | W | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mason, Texas | 28.41 | 721.6 | 30.19 | 766.8 | 51 | 10.6 | 65 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.71 | 754.6 | 30.03 | 762.7 | 58 | 14.4 | 76 | Calm | 0 | 0 | ..... | Haze | Hz; sm' | Calm | Calm | Inap. | Inap. | Hazy | |
| Milwaukee, Wisconsin | 29.13 | 739.9 | 29.82 | 757.4 | 45 | 7.2 | 92 | W | 12 | 5.4 | ..... | 1cs | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Mobile, Alabama | 30.02 | 762.5 | 30.06 | 763.5 | 56.5 | 13.6 | 81 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Montgomery, Alabama | 29.83 | 757.7 | 30.06 | 763.5 | 57 | 13.9 | 80 | Calm | 0 | 0 | ..... | Haze | Sm'e | Calm | Calm | 0 | 0 | Hazy | |
| Morgantown, West Virginia | 28.86 | 733.0 | 29.94 | 760.5 | 38 | 3.3 | 72 | Calm | 0 | 0 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Mt. Washington, N. H. | 23.19 | 589.0 | 29.55 | 750.6 | 13 | —10.6 | 100 | NW | 90 | 40.2 | ..... | ..... | Fog | ..... | NW | 0 | 0 | Foggy | |
| Nashville, Tennessee | 29.49 | 749.0 | 30.03 | 762.7 | 50.5 | 10.3 | 83 | Calm | 0 | 0 | ..... | ..... | Haze | ..... | Calm | 0 | 0 | Hazy | |
| New Haven, Connecticut | 29.76 | 755.9 | 29.88 | 758.9 | 42 | 5.6 | 74 | SW | 5 | 2.2 | ..... | 10cs | 0 | ..... | ..... | 0 | 0 | Cloudy | |
| New London, Connecticut | 29.84 | 757.9 | 29.88 | 758.9 | 40 | 4.4 | 82 | SW | 13 | 5.8 | ..... | 0 | 8s | ..... | W | 0 | 0 | Fair | |
| New Orleans, Louisiana | 29.99 | 761.7 | 30.05 | 763.3 | 61 | 16.1 | 82 | W | 1 | 0.4 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Smoky | |
| Newport, Rhode Island | 29.80 | 756.9 | 29.85 | 758.2 | 40 | 4.4 | 73 | SW | 12 | 5.4 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| New York, New York | 29.75 | 755.6 | 29.94 | 760.5 | 38 | 3.3 | 71 | SW | 12 | 5.4 | ..... | 8cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Norfolk, Virginia | 30.01 | 762.2 | 30.07 | 763.8 | 43 | 6.1 | 83 | S | 1 | 0.4 | ..... | Haze | Sm'e | Calm | ..... | 0 | 0 | Hazy | |
| North Platte, Nebraska | 27.11 | 688.6 | 29.73 | 755.1 | 38 | 3.3 | 81 | W | 12 | 5.4 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Olympia, Washington Ter. | 30.01 | 762.2 | 30.05 | 763.3 | 47 | 8.3 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Dense fog | |
| Omaha, Nebraska | 28.74 | 730.0 | 29.80 | 756 9 | 50 | 10.0 | 72 | SW | 13 | 5.8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Oswego, New York | 29.46 | 748.3 | 29.78 | 756.4 | 44 | 6.7 | 52 | SW | 6 | 2.7 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Pembina, Dakota | 29.18 | 741.2 | 30.04 | 763.0 | 33 | 0.6 | 79 | NW | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Philadelphia, Pennsylvania | 29.92 | 760.0 | 29.97 | 761.2 | 41 | 5.0 | 91 | SW | 12 | 5.4 | ..... | 0 | Fg;sm' | ..... | Calm | 0 | 0 | Clear | |
| Phœnix, Arizona | 28.72 | 729.5 | 30.54 | 775.7 | 50 | 10.0 | 65 | W | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.88 | 454.1 | 30.08 | 764.0 | 15 | — 9.4 | 48 | NE | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pioche, Nevada | 24.05 | 610.9 | 29.82 | 757.4 | 40 | 4.4 | 73 | W | 8 | 3.6 | ..... | 0 | 5s | ..... | SE | 0.06 | 1.5 | Fair | |
| Pittsburg, Pennsylvania | 29.08 | 738.6 | 29.90 | 759.4 | 36 | 2.2 | 90 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Port Huron, Michigan | 29.07 | 738.4 | 29.73 | 755.1 | 39 | 3.9 | 91 | SW | 8 | 3.6 | ..... | ..... | 10ks | ..... | SW | 0.03 | 0.8 | Cloudy | |
| Portland, Maine | 29.66 | 753.4 | 29.71 | 754.6 | 35 | 1.7 | 70 | SW | 10 | 4.5 | ..... | 5k | Haze | W | ..... | 0 | 0 | Fair | |
| Portland, Oregon | 30.01 | 762.2 | 30.12 | 765.0 | 47 | 8.3 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Prescott, Arizona | 24.71 | 627.6 | 30.07 | 763.8 | 32 | 0.0 | 70 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Punta Rassa, Florida | 29.90 | 759.4 | 29.92 | 760.0 | 67 | 19.4 | 89 | NW | 20 | 8.9 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Red Bluff, California | 29.66 | 753.4 | 30.02 | 762.5 | 54 | 12.2 | 93 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Rochester, New York | 29.14 | 739.6 | 29.71 | 755.4 | 42 | 5.6 | 66 | SW | 10 | 4.5 | ..... | 2ck | 0 | NW | ..... | 6 | 0 | Fair | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roseburg, Oregon | 29.50 | 749.3 | 30.07 | 763.8 | 47 | 8.3 | 96 | Calm | 0 | 0 | ..... | 10cs;k | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Sacramento, California | 29.92 | 760.0 | 30.00 | 762.0 | 55 | 12.8 | 87 | S | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.39 | 746.5 | 29.96 | 761.0 | 55 | 12.8 | 74 | W | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Marks, Florida | 30.03 | 762.7 | 30.04 | 763.0 | 58 | 14.4 | 87 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | |
| St. Paul, Minnesota | 28.91 | 734.3 | 29.73 | 755.1 | 45 | 7.2 | 84 | SW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.70 | 652.8 | 30.03 | 762.7 | 44 | 6.7 | 68 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Antonio, Texas | 29.86 | 745.7 | 29.95 | 760.7 | 62 | 11.1 | 86 | Calm | 0 | 0 | ..... | 5c | 0 | NE | ..... | 0 | 0 | Fair | |
| San Diego, California | 29.92 | 760.0 | 29.99 | 761.7 | 50 | 10.0 | 93 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandusky, Ohio | 29.18 | 741.2 | 29.85 | 758.2 | 44 | 6.7 | 84 | SW | 12 | 5.4 | ..... | ..... | 10ks | ..... | SW | 0 | 0 | Cloudy | |
| Sandy Hook, New Jersey | 29.91 | 759.7 | 29.93 | 760.2 | 44 | 6.7 | 76 | W | 17 | 7.6 | ..... | 8ck | Haze | W | ..... | 0 | 0 | Cloudy | |
| San Francisco, California | 29.97 | 761.2 | 30.04 | 763.0 | 54 | 12.2 | 90 | W | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Santa Fé, New Mexico | 28.31 | 592.1 | 29.85 | 758.2 | 40 | 4.4 | 65 | SE | 4 | 1.8 | ..... | 5cs | 1s | Calm | Calm | 0 | 0 | Fair | |
| Savannah, Georgia | 30.00 | 762.0 | 30.09 | 764.3 | 53 | 11.7 | 80 | NE | 5 | 2.2 | ..... | 5ck | Haze | NE | ..... | 0 | 0 | Fair | |
| Shreveport, Louisiana | 29.84 | 757.9 | 30.00 | 763.5 | 57 | 13.9 | 87 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.05 | 763.3 | 30.09 | 764.3 | 47 | 8.3 | 85 | N | 6 | 2.7 | ..... | 10ck | 0 | W | ..... | 0 | 0 | Cloudy | |
| Springfield, Massachusetts | 29.64 | 752.8 | 29.77 | 756.1 | 38 | 3.3 | 63 | S | 2 | 0.9 | ..... | 10ck | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Stockton, Texas | 27.02 | 686.3 | 30.02 | 762.5 | 54 | 12.2 | 73 | Calm | 0 | 0 | ..... | 5k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Thatcher's Island, Mass. | 29.72 | 754.9 | 29.78 | 756.4 | 37 | 2.8 | 63 | W | 16 | 7.2 | ..... | 5cs | 5s | W | W | 0 | 0 | Cloudy | |
| Toledo, Ohio, | 29.14 | 740.1 | 29.81 | 757.2 | 45 | 7.2 | 76 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 51 | 10.6 | 71 | Calm | 0 | 0 | ..... | 10k | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Tybee Island, Georgia | 30.00 | 762.5 | 30.09 | 764.3 | 54 | 12.2 | 86 | NE | 16 | 7.2 | ..... | 5ck | 5s | Calm | Calm | 0 | 0 | Cloudy | |
| Umatilla, Oregon | 29.76 | 755.9 | ..... | ..... | 45 | 7.2 | 92 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.81 | 757.2 | 30.07 | 763.8 | 59 | 15.0 | 65 | SE | 4 | 1.8 | ..... | Haze | Sm'e | Calm | Calm | 0 | 0 | Smoky | |
| Virginia City, Montana | 24.40 | 619.8 | 29.88 | 758.9 | 40 | 4.4 | 56 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Visalia, California | 29.68 | 753.9 | 30.05 | 763.3 | 47 | 8.3 | 92 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C. | 29.87 | 758.7 | 29.99 | 761.7 | 45 | 7.2 | 84 | S | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 47 | 8.3 | 55 | S | ..... | ..... | ..... | 2ck | 0 | Calm | ..... | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 30.00 | 762.0 | 30.08 | 764.0 | 45 | 7.2 | 76 | NE | 4 | 1.8 | ..... | Haze | Sm'e | ..... | Calm | 0 | 0 | Smoky | |
| Winnemucca, Nevada | 25.71 | 653.0 | 30.07 | 763.8 | 37 | 2.8 | 90 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | |
| Wood's Holl, Mass. | 29.79 | 756.7 | 29.84 | 757.9 | 47 | 8.3 | 70 | NW | 16 | 7.2 | ..... | 5cs | Haze | Calm | Calm | 0 | 0 | Fair | |
| Yankton, Dakota | 28.60 | 726.4 | 29.88 | 758.9 | 47 | 8.3 | 70 | W | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Yuma, Arizona | 29.71 | 754.6 | 29.88 | 758.9 | 56 | 13.3 | 62 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 30.16 | 766.1 | 30.21 | 767.3 | 3.0 | —16.1 | 87 | NE | 21 | 9.4 | ..... | ..... | 9s | ..... | NE | 0 | 0 | Cloudy | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 29.88 | 758.9 | 29.90 | 759.4 | 75 | 23.9 | 72 | NW | 14.4 | 6.4 | ..... | 8c | 4ks | SW | NW | 0 | 0 | Cloudy | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.06 | 763.5 | 30.07 | 763.8 | 78 | 25.6 | 86 | Calm | 0 | 0 | ..... | 10c | 0 | Calm | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.87 | 758.7 | 29.95 | 760.7 | 80 | 26.7 | ..... | E | 4 | 1.8 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | ..... | ..... | 30.02 | 762.5 | 83 | 28.3 | 79 | E | ..... | ..... | 3 | 5k | 7ks | E | ..... | 0 | 0 | ½ Cloudy | C. J. Hering. |
| Batavia, Dutch Guiana, S. A. | 30.07 | 763.7 | 30.08 | 763.9 | 86.0 | 30 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.21 | 640.3 | ..... | ..... | 72.5 | 22.5 | 75 | Calm | ..... | ..... | 0 | ..... | 9ks;s | ..... | ..... | 0 | 0 | ..... | Thomas Herran. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medillin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,533 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason; 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,676 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.: Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,060 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.: Tucson, 2.69 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er —10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.99 | 761.7 | 55 | 12.8 | 54 | 12.2 | 87 | SSW | 8 | 3.6 | ..... | ..... | 10ks | ..... | S | 0 | 0 | ..... | ..... | Overcast..... | |
| Navy Yard, Pensacola, Fla. | 30.17 | 766.3 | 63 | 17.2 | 63 | 17.2 | 94 | NE | 1 | 0.4 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Portsmouth, N.H | 29.82 | 757.4 | 72 | 22.2 | 31 | — 0.6 | ?? | W | 2 | 0.9 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy ..... | |
| Naval Hospital, Yokohama, Japan | 29.95* | 760.7* | 57.5 | 14.2 | 52.5 | 11.4 | 57 | SW | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Adams. Panama | 29.92 | 760.0 | 84 | 28.9 | 84 | 28.9 | 79 | N | ..... | ..... | 0–1 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Alliance, Piraeus, Greece | 29.95‡ | 760.7‡ | ..... | ..... | 60 | 15.6 | 60 | S | ..... | ..... | 1 | ..... | 7 | ..... | Calm | ..... | ..... | ..... | ..... | Pleasant..... | |
| Ashuelot, Shanghai, China | 30.12* | 765.0* | 64 | 17.8 | 55 | 12.8 | 68 | SE | ..... | ..... | 2 | ..... | 1 | ..... | Calm | ..... | ..... | ..... | ..... | Misty..... | |
| Canonicus, New Orleans, La | 30.03 | 762.7 | 47 | 8.3 | 62 | 16.7 | 77 | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | Pleasant..... | |
| Colorado, New York, N. Y. | 29.90‡ | 759.4‡ | ..... | ..... | 41 | 5.0 | 74 | SW | 11 | 4.9 | ..... | ..... | 8 | ..... | W | 0 | 0 | ..... | ... ... | Cloudy..... | |
| Constitution, N. 48° 53′ W. 8° 50′ | 30.08‡ | 764.0‡ | ..... | ..... | 44 | 6.7 | 68 | N | ..... | ..... | 3 | ..... | 2 | ..... | N | ..... | ..... | Smooth | N | Clear..... | |
| Despatch, Constantinople, Turkey. | 30.05 | 763.3 | 65 | 18.3 | 51 | 10.6 | 65 | S | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear ..... | |
| Enterprise, New Orleans, La | 30.06‡ | 763.5‡ | ..... | ..... | 61 | 16.1 | 88 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Franklin, Norfolk, Va | 30.07‡ | 763.8‡ | ..... | ..... | 45 | 7.2 | 76 | SW. | 2 | 0.9 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | Foggy..... | |
| Gettysburg Valetta, Malta | 29.93‡ | 760.2‡ | ..... | ..... | 65 | 18.3 | ?? | WSW | ..... | ..... | 1 | ..... | 5 | ..... | Calm | 0 | 0 | ..... | ..... | Fair..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.17 | 766.3 | 72 | 22.2 | 71 | 21.7 | 66 | NE | ..... | ..... | 3 | ..... | 2 | ..... | NE | ..... | ..... | ..... | ..... | Clear ..... | |
| Marion, Smyrna, Turkey | 29.95 | 760.7 | 57 | 13.9 | 59 | 15.0 | 48 | W | ..... | ..... | 1 | ..... | 1 | ..... | W. | 0 | 0 | Smooth | W | Clear ..... | |
| Michigan, Erie, Pa | 29.33 | 745.0 | 57 | 13.9 | 44 | 6.7 | 68 | S | ..... | ..... | 2 | ..... | 2 | ..... | S | ..... | ..... | ..... | ..... | Fair ..... | |
| Monongahela. Hong-Kong, China | 30.16* | 766.1* | 66 | 18.9 | 66 | 18.9 | 79 | E | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | D. clouds.... | |
| New Hampshire, Port Royal, S. C | 30.26 | 768.6 | 59 | 15.0 | 57 | 13.9 | 81 | N | 14 | 6.3 | ..... | ..... | 5 | ..... | SW | 0 | 0 | ..... | ..... | Fair ..... | |
| Omaha, N. 12° 50′, W. 49° 05′ | 30.14* | 765.5* | 83 | 28.3 | 83 | 28.3 | 69 | ENE | 3 | 1.3 | ..... | ..... | 5 | ..... | ENE | 0 | 0 | Mod'ate | NE | ..... | |
| Onward, Callao, Peru | 30.00† | 762.0† | ..... | ..... | 74 | 23.3 | 56 | SSE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, Vera Cruz, Mexico | 30.07‡ | 763.8‡ | ..... | ..... | 68 | 20.0 | 100 | W | ..... | ..... | 1 | ..... | 5 | ..... | W | ..... | ..... | Long | NE | Fair ..... | |
| Palos, Shanghai, China | 30.16* | 766.1* | 66 | 18.9 | 54 | 12.2 | 67 | SSE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Pensacola, Honolulu, H. I. | 30.24 | 768.1 | 70 | 21.1 | 68 | 20.0 | 84 | NE | 8 | 3.6 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | ..... | Fair ..... | |
| Plymouth. Norfolk, Va | 30.09‡ | 764.3‡ | ..... | ..... | 42 | 5.6 | 83 | SW | ..... | ..... | 0–1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | |
| Powhatan, Port Royal, S, C | 30.12‡ | 765.0‡ | ..... | ..... | 55 | 12.8 | 93 | NE | 3.0 | 1.3 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Smooth | ..... | Pleasant..... | |
| Ranger. Amoy, China | 30.27* | 768.8* | ..... | ..... | 62 | 16.7 | 77 | Calm | ..... | ..... | 0 | ..... | 7 | ..... | Calm | ..... | ..... | ..... | ..... | Blue sky..... | |
| Rio Bravo, Brownsville, Texas | ..... | ..... | ..... | ..... | 60 | 15.6 | 100 | E | ..... | ..... | 1 | ..... | 1 | ..... | E | ..... | ..... | ..... | ..... | Misty..... | |
| Santee, Annapolis, Md | 30.07* | 763.8* | 70 | 21.1 | 49 | 9.4 | 71 | SW | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | ..... | Clear. ..... | |
| Saratoga, Washington, D. C | 29.96* | 761.0* | ..... | ..... | 52 | 11.1 | 93 | SW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| St. Louis, League Island, Pa | 29.95 | 760.7 | 57 | 13.9 | 43 | 6.1 | 92 | SW | 9 | 4.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Supply, Havre, France | 29.84 | 757.9 | 48 | 8.9 | 42 | 5.6 | 50 | N | ..... | ..... | 4 | ..... | 2 | ..... | NE | ..... | ..... | Smooth | ... ... | Clear..... | |
| Swatara, Cartagena, New Grenada | 29.96* | 761.0* | ..... | ..... | 84 | 28.9 | 57 | NNW | ..... | ..... | 1 | ..... | 5 | ..... | N | ..... | ..... | ..... | ..... | D. clouds.... | |
| Tennessee, N. 6° 54′, E. 86° 27′ | 29.92* | 760.0* | 80 | 30.0 | 85 | 29.4 | 83 | NNE | 11 | 4.9 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | Mod'ate | NE | D. clouds.... | |
| Trenton, Piraeus, Greece | 30.00‡ | 762.0‡ | ..... | ..... | 65 | 18.3 | 58 | S | ..... | ..... | 1–2 | ..... | 5 | ..... | S | 0 | 0 | Smooth | ..... | Hazy..... | |
| Tuscarora, N. 24° 15, 31″ W. 110° 20′ 47″ | 29.99 | 761.7 | 64 | 17.8 | 63 | 17.2 | 72 | S | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |
| Vandalia, Naples, Italy | 29.91‡ | 759.7‡ | ..... | ..... | 57 | 13.9 | 75 | S | ..... | ..... | 3 | ..... | 10 | ..... | S | ..... | ..... | ..... | ..... | Threatening | |
| Wabash, Boston, Mass | 29.82‡ | 757.4‡ | ..... | ..... | 40 | 4.4 | 56 | WSW | 8 | 3.6 | ..... | ..... | 8 | ..... | Calm | 0 | 0 | ..... | ..... | Cloudy..... | |
| Wyoming, N. 40° 12′ W. 72° 33′ | 30.09* | 764.3* | ..... | ..... | 42 | 5.6 | 100 | WSW | ..... | ..... | 5 | ..... | 8 | ..... | Calm | ..... | ..... | Smooth | S&W | D. clouds..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently varys lightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer-reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | Character. | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | |
| S. S. City of Panama, N. 48°, W. 125° | | | 30.13* | 765.3* | | | | NE | | | 1 | | 10 | | | Smooth | W | Fine | Capt. Seabury. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, Hong-Kong, China | | | | | 62 | 16.7 | | E | | | 2 | | 10 | | | | | Overcast | Capt. Maury. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Corrected for temperature and elevation; instrumental error not known.

**WHITE STAR LINE MARINE SERIES.**

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. W. H. Thompson |
| S. S. Celtic, New York, N. Y. | | | 29.44† | 747.8† | 58 | 14.4 | | WSW | | | 4 | | | WSW | | | | D. clouds | Capt. B. Gleadell. |
| S. S. Germanic, N. 50° 50', W. 16° 00' | | | 30.22† | 767.6† | 50 | 10.0 | ?? | Var. | | | 2 | | | | N | None | | D. clouds | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Aneroid.

**OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.**

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, N. 38° 35', E. 148° 38' | | | 29.99* | 761.7* | | | | NW | | | 6 | | Light | | W | Smooth | | D. clouds | Capt. John Metcalf. |
| S. S. Gaelic, N. 31° 20', E. 131° 20' | | | 30.03† | 762.7† | 60 | 15.6 | ?? | WSW | | | 4 | | cs | | Var. | Smooth | W | D. clouds | Capt. W. H. Kidley |
| S. S. Oceanic, N. 37° 57', W. 143° 00' | | | 29.70 | 754.4 | 50 | 10.0 | 70 | WNW | | | 4 | | 8 | | NW | Consd. | | Squally | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

**NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.**

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andresser. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | Character | Direction From— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, N. 50° 34′ 34″, W. 18° 13′ 15″ | | | 30.23† | 767.8† | 45 | 7.2 | 92 | ESE | | | 3 | | 7 | | ENE | Light | SE | Partly cl'dy | Captain Sargent. |
| S. S. Ohio, N. 40° 35′, W. 67° 34′ | | | 29.82 | 757.4 | 42.5 | 5.8 | ?? | SW | | | 3 | | 0 | | | Mod'ate | W | Clear | Captain Morrison. |
| S. S. Pennsylvania | | | | | | | | | | | | | | | | | | | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. †Aneroid; unreliable, corrected for elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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**ALLAN LINE MARINE SERIES.**

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Scandinavian | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.)**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Crisfield, Md. | | | 30.00 | 762.0 | 50 | 10.0 | 72 | W | 10 | 4.5 | | | 0 | | | | | Clear | Capt. James Jorgensen |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 30.22 | 767.6 | 11 | —11.7 | 98 | W | 1 | 0.4 | | | 10s | | Calm | | | Moist | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg'd.) Chief Signal Officer, U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 24, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer, corrected for instrum'tal error and temperature. Inches. | Barometer, corrected for instrum'tal error and temperature. Millimeters. | Barometer, reduced to sea-level. Inches. | Barometer, reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | | | 30.22 | 767.6 | 60.3 | 15.7 | | W | | | 1 | | 4 | | | 0 | 0 | Cloudy | Dr. Ollive. |
| Nemours | | | 29.98 | 761.4 | 69.8 | 21.0 | 57 | NW | | | 1 | | 5 | | | 0.04 | 1. | Cloudy | Michel. |
| Algiers | | | 29.84 | 757.9 | 57.9 | 14.4 | 89 | WSW | | | 5 | | 10 | | | 1.256 | 31.9 | Covered | Towillere. |
| La Calle | | | 29.81 | 757.1 | 58.6 | 14.8 | 80 | NNW | | | 5 | | 9 | | | 0.04 | 1. | Covered | Boulangeot. |
| Tunis | | | 29.78 | 756.3 | 63.7 | 17.6 | 57 | WSW | | | 4 | | 10 | | | 0.024 | 0.6 | Covered | Jacques. |
| Sfax | | | 29.88 | 759.0 | 69.8 | 21.0 | | W | | | 3 | | 8 | | | 0 | 0 | Very cloudy | Gau. |
| Saida | | | 29.99 | 761.8 | 63.1 | 17.3 | 88 | SSW | | | 1 | | 0 | | | 0 | 0 | Clear | Herbin. |
| Tebessa | | | 29.89 | 759.1 | | | | W | | | 7 | | 2 | | | 0 | 0 | Fair | Bourgeois. |
| Geriville | | | 30.08 | 764.1 | 55.4 | 13.0 | 88 | NW | | | 5 | | 5 | | | 0 | 0 | Cloudy | Lemaillot. |
| Laghouat | | | 30.04 | 762.9 | 68.7 | 20.4 | 37 | W | | | 7 | | 3 | | | 0 | 0 | Pretty fair | Guyot. |
| Biskra | | | 29.90 | 759.5 | 74.3 | 23.5 | 65 | NW | | | 6 | | 0 | | | 0 | 0 | Clear | Chanvaux. |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 28.94 | 735.1 | 29.51 | 749.5 | 33.1 | 0.6 | 96 | SW | | | 2 | | 10 | | | 0.461 | 11.7 | Rain & snow | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 28.73 | 729.7 | 29.52 | 749.7 | 32.4 | 0.2 | 96 | W | | | 1 | | 10 | | | 0.673 | 17.1 | | Dr. Wierzbiski. |
| Eperies | 28.40 | 723.6 | 29.37 | 745.9 | 43.9 | 6.6 | 80 | Calm | | | 0 | | 10n | | | 0.022 | 0.55 | | Julius Mikolik. |
| Gratz | 28.21 | 716.5 | 29.46 | 748.3 | 41.9 | 5.5 | 49 | ESE | | | 4 | | 8 | | | 0.098 | 2.50 | | Andreas Rospini. |
| Hermannstadt | 28.04 | 712.1 | 29.43 | 747.6 | 51.1 | 10.6 | 42 | S | | | 5 | | 6 | | | 0 | 0 | | Prof. Reissenberg |
| Kremsmünster | 28.17 | 715.4 | 29.54 | 750.3 | 34.5 | 1.4 | 74 | NW | | | 3 | | 10 | | | 0.177 | 4.5 | | Prof. C. Wagner |
| Lemberg | 28.36 | 720.4 | 29.34 | 745.3 | 46.4 | 8.0 | 75 | SE | | | 1 | | 10 | | | 0.004 | 0.1 | | Dr. T. Stanecki. |
| Pola | 29.27 | 743.4 | 29.38 | 746.2 | 49.3 | 9.6 | 61 | WNW | | | 1 | | 10s | | | 0.268 | 6.8 | | I.R.Hydrographic Office |
| Szathmar | | | | | | | | | | | | | | | | | | | Johann Tamas, S. J. |
| Szegedin | 29.05 | 737.8 | 29.33 | 744.9 | 49.6 | 9.8 | 86 | S | | | 3 | | 10 | | | 0.419 | 10.65 | | Karl Stancel. |
| Trieste | 29.32 | 744.7 | 29.42 | 747.3 | 42.3 | 5.7 | 77 | E | | | 1 | | 10 | | | 0.528 | 13.4 | Rainy | P. Busin. |
| Vienna | 28.76 | 730.6 | 29.49 | 749.1 | 37.0 | 2.8 | 92 | NNW | | | 3 | | 9 | | | 0.280 | 7.1 | | I. R. Central Met. Obs'y. |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 348.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.07 | 713.0 | 29.61 | 752.0 | 36.1 | 2.3 | 80 | W | | | 2 | | 10 | | | 0.205 | 5.2 | | Prof. M. Passau. |
| Brussels | 29.34 | 745.3 | 29.55 | 750.5 | 38.5 | 3.6 | 67 | SW | | | 2 | 3 | 9 | WNW | W | 0.039 | 1.0 | | Royal Observatory. |
| Furnes | 29.54 | 750.3 | 29.56 | 750.9 | 39.7 | 4.3 | 74 | SSW | | | 1 | | 6 | | | 0.173 | 4.4 | | M. E. de Cae. |
| Maeseyck | 29.41 | 746.9 | 29.53 | 750.1 | 34.5 | 1.4 | 70 | WSW | | | 2 | | 10 | | | 0.118 | 3.0 | | M. Pierrot. |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

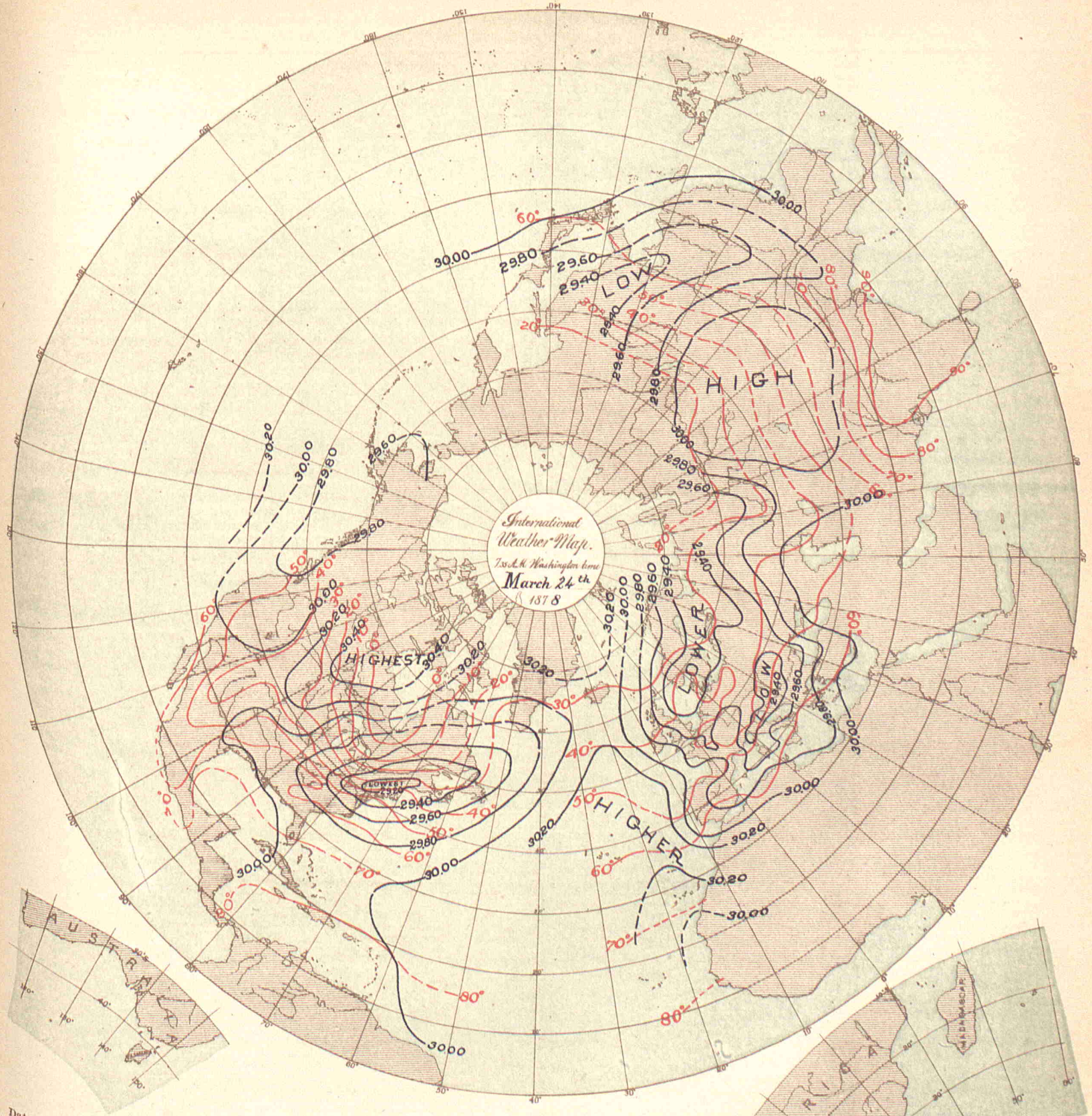
Furnished by the cooperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E. Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. centigrade. | Relative Humidity. per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Force 1—10. | Clouds. Amount. Upper. 0—10. | Clouds. Amount. Lower. 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.80 | 744.2 | 29.40 | 746.7 | 31.9 | — 0.1 | | W | 9 | 4.0 | | | 10 | | | 0.140 | 3.56 | Snowing | W. Boswell. |
| Ardrossan | | | | | | | | | | | | | | | | | | | William McNeil. |
| Armagh, Observatory | | | 29.74 | 755.4 | 40.2 | 4.6 | | NW | 20 | 8.9 | | | | | | Blank | Blank | | S. Call, for Dr. Robinson. |
| Bidston, (Liverpool Obs.) | | | 29.58 | 751.3 | 33.9 | 1.1 | | NNW | 23 | 10.3 | | 5 | | | | | | D. clouds | John Hartnup. |
| Birr Castle, (Parsonstown) | | | 29.84 | 757.9 | 39.8 | 4.3 | | NW | | | 3 | 6 | | | | | | Snowing | J. Dreyer. |
| Bradford, Yorkshire | | | | | | | | | | | | | | | | 0 | 0 | | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.96 | 761.0 | 29.99 | 761.7 | 83.5 | 28.6 | | NE | | | 2 | 5 | | | | | | D. clouds | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | | | 29.52 | 749.8 | 47.0 | 8.3 | | NW | | | 2 | 2 | | | | | | D. clouds | H. Todd. [H.C. |
| Cardington | | | 29.52 | 749.8 | 44.0 | 6.7 | | N | | | 1 | 5 | | | | Blank | Blank | D. clouds | John McLaren. |
| Chatham, School M. E. | 29.37 | 746.0 | 29.50 | 749.3 | 42.2 | 5.7 | | NW | | | 1 | 5 | | | | | | D. clouds | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.20 | 716.3 | 29.70 | 754.4 | 36.0 | 2.2 | | NW | | | 4 | 3 | | | | | | Snowing | Alexander Watt. |
| Donaghadee | 29.57 | 751.1 | 29.00 | 751.8 | 41 | 5.0 | | N | | | 6 | 8 | | | | | | D. clouds | J. Mac Gowan. |
| Dover | 29.50 | 749.3 | 29.52 | 749.8 | 42 | 5.6 | | NW | | | 3 | 7 | | | | | | ¾ clouded | J. Costello. |
| Eccles, (near Manchester) | | | 29.53 | 750.0 | 31.0 | — 0.6 | | N | 3.0 | 1.3 | | 7 | | | | | | D. clouds | Thomas Mackereth. |
| Falmouth, Observatory | 29.52 | 749.8 | 29.76 | 755.9 | 42.8 | 6.0 | | NW | | | 5 | 8 | | | | | | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.80 | 706.1 | 30.01 | 762.2 | 76.0 | 24.4 | | E | | | 3 | 0 | | | | | | Blue sky | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.66 | 753.4 | 29.89 | 759.2 | 89 | 31.7 | | W | | | 1 | 3 | | | | | | D. clouds | |
| Galway, Queen's College | | | | | | | | | | | | | | | | | | | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.82 | 757.4 | 29.87 | 758.7 | 61.2 | 16.2 | | W | | | 6 | 9 | | | | | | Showery | Corpl. C. Aitken, A. H. C. |
| Glasgow, Observatory | 29.28 | 743.7 | 29.49 | 749.0 | 39.1 | 3.9 | | NNW | | | 6 | 4 | | | | | | Blue sky | D. G. Maclean. |
| Great Yarmouth | 29.49 | 749.0 | 29.50 | 749.3 | 40 | 4.4 | | WNW | | | 2 | 4 | | | | | | D. clouds | G. J. Watson. |
| Greenwich, Royal Obs'y | 29.36 | 745.7 | 29.54 | 750.3 | 42.9 | 6.1 | | NW | | | 1 | 5 | | | | | | D. clouds | The Staff, for G. B. Airy. |
| Guernsey | 29.44 | 747.8 | 29.66 | 753.4 | 53 | 6.1 | | NW | | | 4 | 8 | | | | | | Hailing | Dr. S. E. Hoskins, F.R.S. |
| Helston | | | 29.82 | 757.4 | 46 | 7.8 | | N | | | 6 | 3k | | | | 0.06 | 1.5 | Fine | M. P. Moyle. |
| Holyhead | 29.58 | 751.3 | 29.63 | 752.6 | 38 | 3.3 | | NNW | | | 7 | 10 | | | | | | Snowing | John Tilston. |
| Jersey | 29.38 | 746.2 | 29.68 | 753.9 | 41.4 | 5.2 | | N | | | 4 | 6 | | | | Blank | Blank | D. clouds | J. Fisher. |
| Kew, Observatory | | | 29.56 | 750.8 | 42.2 | 5.7 | | WNW | 13 | 5.8 | | 5 | | | | | | D. clouds | The Staff. |
| Kingstown | 29.71 | 754.6 | 29.74 | 755.4 | 39 | 3.9 | | NW | | | 6 | 3 | | | | Blank | Blank | Blue sky | George Mitchell. |
| Leicester, Museum | | | 29.49 | 749.0 | 43.1 | 6.2 | | NW | | | 2 | 10 | | | | | | Overcast | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.69 | 754.1 | 29.76 | 755.9 | 63.6 | 17.6 | | NW | | | 3 | 8 | | | | | | D. clouds | Sgt. Fred. Travis, A. H. |
| Nairn | 29.33 | 745.0 | 29.43 | 747.5 | 39 | 3.9 | | NW | | | 6 | 10 | | | | | | Overcast | W. D. Penny. [C. |
| Nassau, (Bahamas) | | | 29.90 | 759.4 | 74.5 | 23.6 | | NW | | | 3 | 10 | | | | | | Overcast | C. S. Duncombe. |
| Nottingham, Observatory | 29.28 | 743.7 | 29.48 | 748.8 | 42.3 | 5.7 | | W | | | 3 | 10k;d | | W;NW | | 0.051 | 1.30 | Snowing | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.00 | 736.6 | 29.54 | 750.3 | 30.7 | — 0.7 | | NW | | | 7 | 10 | | | | | | Heavy snow | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | | | 29.55 | 750.6 | 42 | 5.6 | | W | | | 2 | 7 | | | | | | D. clouds | Mr. Lucas |
| Plymouth | 29.62 | 752.3 | 29.70 | 754.4 | 45.8 | 7.7 | | NNW | | | 2 | 6 | | | | Blank | Blank | D. clouds | John Merrifield. |
| Roche's Point | 29.80 | 756.9 | 29.84 | 757.9 | 41 | 5.0 | | N | | | 6 | 10 | | | | | | Snow-squalls | W. Kennedy. |
| Saint Ann's Head | | | | | | | | | | | | | | | | | | | John C. Walker. |
| Sandwick Manse, (Orkneys | | | 29.50 | 749.3 | 33.8 | 1.0 | | NE | 22 | 9.8 | | 10 | | | | | | Snow-showers | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey | | | 29.82 | 757.4 | 55.2 | 12.9 | | SSW | | | 2 | 8 | | | | | | D. clouds | Sergt. W. H. Lyne. |
| Sheffield | 29.24 | 742.7 | 29.52 | 749.8 | 35.8 | 2.1 | | N | | | 6 | 8 | | | | 0.01 | 0.3 | Snowing | W. F. Cooper. |
| Silloth Rectory | 29.49 | 749.0 | 29.52 | 749.8 | 43.2 | 6.2 | 53 | NE | | | 3 | 2 | | | | 0 | 0 | D. clouds | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.13 | 739.9 | 29.53 | 750.0 | 31.0 | — 0.6 | | NW | | | 3 | 10 | | | | | | Squally | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | | | 29.59 | 751.6 | 38 | 3.3 | | NNE | | | 7 | 10 | | | | | | Snowing | John Sutherland. |
| Stratfield Turgiss | 29.35 | 745.5 | 29.56 | 750.8 | 45.6 | 7.6 | | NW | | | 1 | 4 | | | | Blank | Blank | D. clouds | Rev. C. H. Griffith, F. M. |
| Thurso | | | 29.47 | 748.5 | 40 | 4.4 | | N | | | 6 | 5 | | | | | | D. clouds | John Trotter. |
| Truro, Royal Institution | | | 29.75 | 755.6 | 47 | 8.3 | | N | | | 7 | 10 | | | | | | Raining | W. Newcombe. |
| Valencia, Observatory | | | 29.93 | 760.2 | 47.0 | 8.3 | | NNW | 26 | 11.6 | | 8 | | | | | | Squally | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | | | | | | | | | | | | | | | | | | | Henry Mercer. |
| Cape Good Hope, Obs'y | | | | | | | | | | | | | | | | | | | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | | | 29.94 | 760.5 | 71.0 | 21.7 | 68 | N | | | 3 | 6k | | | | 0 | 0 | Hazy | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | | | | | | | | | | | | | | | | | | | Andrew Gibb. |
| Mauritius, Observatory | 29.79 | 756.7 | 29.98 | 761.5 | 82.2 | 27.9 | 71 | E | 13.0 | 5.8 | | 6 | 3 | | | 0.03 | 0.8 | Cloudy | C. Meldrum. |
| Melbourne, Observatory | 30.09 | 764.3 | 30.18 | 766.6 | 69.4 | 15.2 | 86 | SE | 4 | 1.8 | | | 0 | | | 0 | 0 | Lightning | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | | | | | | | | | | | | | | | | | | | J. Youngclause. |
| North Unst, (Shetland Is.) | | | | | | | | | | | | | | | | | | | Robert Burnet. |

Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1, 400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m.

| Marine Series. Vessels. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather | Observer. |
|---|---|---|---|---|
| S. S. Algeria | | | | Capt. W. Watson. |
| S. S. Batavia | | | | Capt. J. E. Mouland. |
| Ship Camperdown | | | | Capt. A. T. Miller. |
| Brig Catherine | | | | Capt. Adam Smith. |
| Barque Celeste | | | | Capt. D. F. McKechnie |
| S. S. Hibernia | | | | Capt. W. R. Cato |
| Barque Maroon | | | | Capt. A. T. Brown. |
| Ship Mikado | | | | Capt. C. C. Prehn. |
| S. S. Peruvian, N. 53° 20′, W. 22° 30′ | 3 | NNE | Overcast | [R. Capt. W. H. Smith, R. N. |
| Royal Alice | | | | Capt. E. M. Hughes. |
| S. S. Seine | | | | Capt. H. Manning. |
| Barque Sorata | | | | Capt. Jas. J. Price. |
| Schooner Traveller | | | | Capt. Alex Simpson |
| S. S. Yorkshire, Off Needy Island | | | | Capt. H. Longley. |

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.22 | 666.0 | | | 70.7 | 21.5 | 95 | SE | | | 2 | 4ck | 5sd | | NE | Inap | Inap. | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.37 | 746.1 | 29.42 | 747.3 | 36.0 | 2.7 | 79 | SSW | | | 2 | | 8 | | | | | Snow & hail |
| Fanöe | 29.37 | 746.1 | 29.39 | 746.6 | 39.6 | 4.2 | 76 | WSW | | | 4 | | 5 | | | | | |
| Godthaab, (Greenland) | 29.78 | 756.5 | 29.83 | 757.6 | 33.8 | 1.0 | 80 | ENE | | | 4 | | 2 | | | | | |
| Stykkisholm, (Iceland) | 30.13 | 765.3 | 30.17 | 766.4 | 32.7 | 0.4 | 90 | E | | | 6 | | 0 | | | | | |
| Thorshavn, (Faröe) | 29.85 | 758.2 | 29.89 | 759.1 | 36.0 | 2.2 | 85 | NNE | | | 5 | | 6 | | | | | |
| Vestervig | 29.21 | 741.8 | 29.37 | 746.1 | 40.6 | 4.8 | 81 | W | | | 2 | | 4 | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.11 | 739.4 | 29.66 | 753.4 | 46.4 | 8 | 93 | N | | | 4 | | 10 | | | 0.165 | 4.2 | Covered | Collignon, Director. |
| Amiens, Normal School | 29.47 | 748.6 | 29.59 | 751.5 | 37.4 | 3 | 83 | W | | | 2 | | 10 | | | 0 | 0 | Covered | Bonvarne, Director. |
| Avignon, Normal School | 29.64 | 752.8 | 29.72 | 754.8 | 50.9 | 10.5 | 85 | N | | | 3 | | 2 | | NW | 0.04 | 1. | Partly cl'dy | Mr. Giraud, Director |
| Bar-sur-Seine | 29.08 | 738.5 | 29.65 | 753.0 | 36.3 | 2.4 | 80 | S | | | 1 | | 10 | | | Inap. | Inap. | Covered | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 42.8 | 6 | 67 | ESE | | | 1 | | 10 | | WSW | 0 | 0 | Covered | Normal School. |
| Besançon | 28.81 | 731.7 | 29.72 | 755.0 | 37.0 | 2.8 | 77 | SSW | | | 3 | | 8 | | W | 0.267 | 7.3 | Very cloudy | Normal School. |
| Bourg-en-Bresse | 28.84 | 732.5 | 29.74 | 755.3 | 38.7 | 3.7 | 57 | S | | | 2 | | 5kn | | S | 0.339 | 8.6 | Cloudy | Normal School. |
| Bourges, Normal School | 29.17 | 741.0 | 29.74 | 755.3 | 40.1 | 4.5 | 77 | SE | | | 4 | | 10 | | E | 0.386 | 9.8 | Covered | A. Wagner, Director. |
| Brest, Naval Observatory | 29.47 | 748.6 | 29.69 | 754.2 | 47.7 | 8.7 | 48 | N | | | 4 | | 10 | | N | 0.197 | 5.00 | Hail-squalls | The Staff. |
| Carcassonne, Normal School | 29.37 | 745.9 | 29.78 | 756.5 | 48.0 | 8.9 | 57 | W | | | 2 | | 5 | | W | 0.08 | 2. | Cloudy | Vateau, Director. |
| Caen | 29.58 | 751.3 | 29.65 | 753.2 | 38.8 | 3.8 | 55 | NNW | | | 4 | | 5 | | | 0.08 | 2. | Cloudy | Normal School. |
| Chartres, Normal School | 28.98 | 736.2 | 29.56 | 750.9 | 35.1 | 1.7 | 96 | W | | | 2 | | 10 | | | 0.059 | 1.5 | Covered | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.29 | 744.0 | 29.62 | 752.3 | 34.7 | 1.5 | 93 | NNW | | | 3 | | 8kn | | NNW | 0 | 0 | Very cloudy | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.26 | 717.9 | 29.63 | 752.7 | 42.8 | 6.0 | 44 | SW | | | 3 | | 8 | | W | 0.071 | 1.8 | Very cloudy | Alluard, Director. |
| Commercy, Normal School | 28.77 | 730.7 | 29.66 | 753.4 | 38.5 | 3.6 | 67 | W | | | 2 | | 8 | | W | 0 | 0 | Very cloudy | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.54 | 724.9 | 29.68 | 753.9 | 42.4 | 5.8 | 29 | NW | | | 8 | | 2 | | NW | 0.142 | 3.6 | ¼ Covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 29.41 | 747.0 | 29.71 | 754.5 | 44.6 | 7.0 | 85 | S | | | 4 | | 8 | | S | 0.039 | 1.0 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.28 | 743.7 | 29.59 | 751.6 | 40.3 | 4.6 | 62 | W | | | 2 | | 8 | | W | 0.148 | 3.75 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.74 | 730.0 | 29.66 | 753.4 | 39.9 | 4.4 | 74 | S | | | 2 | | 5 | | S | 0.291 | 7.40 | Cloudy | Voudez, Director. |
| Lorient, Naval Observatory | 29.00 | 751.7 | 29.70 | 754.3 | 46.8 | 8.2 | 46 | NW | | | 5 | | 8 | | NW | 0.039 | 1.0 | ¾ covered | T. Carré, Director. |
| Mâcon, Normal School | 29.02 | 737.0 | 29.72 | 754.9 | 39.2 | 4 | 64 | Calm | | | 0 | | 5 | | | 0 | 0 | Cloudy | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | 28.60 | 726.3 | 29.66 | 753.4 | 40.3 | 4.6 | 47 | W | | | 2 | | 10 | | E | 0 | 0 | Covered | Normal School. |
| Nismes, Normal School | 29.46 | 748.3 | 29.66 | 753.3 | 53.2 | 11.8 | 40 | NW | | | 2 | | 0 | | | 0.020 | 0.5 | Clear | Boyer, Director. |
| Orleans, Normal School | 29.24 | 742.8 | 29.63 | 752.6 | 43.5 | 6.4 | 79 | W | | | | | 10 | | | 0.12 | 3. | Covered | Bernard, Director. |
| Paris, Observatory | 29.34 | 745.2 | 29.58 | 751.4 | 40.6 | 4.8 | 66 | W | | | 1 | | 10 | | W | 0.041 | 1.03 | Covered | National Observatory. |
| Privas | 28.67 | 728.2 | 29.74 | 755.4 | 49.1 | 9.5 | 87 | N | | | 2 | | 5 | | N | 0 | 0 | Cloudy | Normal School |
| Puy de Dome (Summit) | | | | | | | | | | | | | | | | | | | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.63 | 757.7 | 29.86 | 758.5 | 42.4 | 5.8 | 94 | SW | | | 4 | | 10 | | SW | 0.16 | 4. | Raining | Lt. Decante, Director. |
| Rouen, Normal School | 29.51 | 749.6 | 29.60 | 751.8 | 39.2 | 4.0 | 64 | NNW | | | 2 | | 10 | | W | 0.055 | 1.4 | Covered | F. Lucard, Director. |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | M. H. Hercouet. |
| Tarbes, Normal School | 28.77 | 730.7 | 29.87 | 758.6 | 44.6 | 7 | 85 | WSW | | | 6 | | 10 | | | 0 | 0 | Covered | T. Hugues, Director. |
| Villefranche | 29.06 | 738.1 | 29.79 | 756.7 | 40.3 | 4.6 | 66 | WNW | | | 1 | | 8 | | N | 0 | 0 | Very cloudy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.84 | 757.8 | 29.86 | 758.5 | 78.8 | 26 | | | | | | | | | | 0 | 0 | | L'Abbé Marchési. |
| Lyons | | | 29.75 | 755.6 | 45.1 | 7.3 | | | | | | | 8 | | | 0.008 | 0.2 | | M. Jeys. |
| Marseilles, Observatory | | | 29.63 | 752.6 | 45.1 | 7.3 | 35 | NW | | | 4 | | 0 | | | 0 | 0 | | The Staff. |
| Mont-Louis | 24.50 | 622.4 | 29.82 | 757.4 | 33.6 | 0.9 | 83 | WSW | 18.6 | 8.33 | | | 4 | | WSW | 0 | 0 | | Mr. Falguère. |
| Nice | 29.28 | 743.6 | 29.35 | 745.6 | 55.6 | 13.1 | 25 | NW | | | 4 | | 1 | | NW | 0 | 0 | Clear | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.29 | 744.0 | 29.57 | 751.0 | 41.0 | 5.0 | 72 | SW | | | 1 | | 10 | | W | 0.031 | 0.8 | Sprinkling | Marié Davy, Director |
| Perpignan | | | 29.76 | 755.8 | 51.3 | 10.7 | 45 | NW | 24.1 | 11.67 | | | 1 | | NW | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.11 | 561.6 | | | 14.0 | —10.0 | | NW | | | 4 | | 10 | | | 1.736 | 44.1 | Snowy | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.41 | 747.1 | 29.58 | 751.3 | 41.0 | 5.0 | 70 | W | | | 1 | | 10 | | W | 0.146 | 3.7 | Snowy | E. Renou. |
| Toulouse, Observatory | 29.08 | 738.6 | 29.80 | 756.8 | 47.3 | 8.5 | 44 | W | | | 4 | | 8 | | | 0.222 | 5.65 | Raining | The Staff. |
| Tours | 29.40 | 746.7 | 29.60 | 751.7 | 45.7 | 7.6 | 66 | NW | | | 3 | | 10 | | W | 0 | 0 | | C. Marquet. |
| Versailles, (near Paris) | | | 29.58 | 751.2 | 39.9 | 4.4 | 74 | NW | | | 1 | | 10 | | | 0.059 | 1.50 | Covered | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 29.72 | 754.9 | 29.74 | 755.5 | 60.8 | 16.0 | 89 | S | 4.0 | 1.8 | | | 0 | | | 0.043 | 1.1 | Clear | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 29.34 | 745.2 | 29.52 | 749.8 | 39.6 | 4.2 | 56 | N | | | 1 | | 6 | | | 0.002 | 0.05 | Light snow. | Prof. Arndt. |
| Breslau | 28.99 | 736.4 | 29.52 | 749.7 | 38.3 | 3.5 | 62 | NW | | | 3 | | 10 | | | 0.083 | 2.10 | | Royal University Obs'y |
| Carlsruhe | 29.19 | 741.3 | 29.61 | 752.2 | 39.2 | 4.0 | 61 | WSW | | | 3 | | 5 | | | 0.083 | 2.1 | Snowing | Albert Senz. |
| Cassel | 28.95 | 735.2 | 29.54 | 750.3 | 39.6 | 4.2 | 83 | W | | | 3 | | 8 | WNW | | 0.014 | 0.35 | | Dr. H. Möhl. |
| Crefeld | 29.35 | 745.6 | 29.51 | 749.6 | 44.2 | 6.8 | 54 | W | | | 4 | | 7k;n | | | 0.04 | 1. | | Director Lose. |
| Emden | 29.48 | 748.9 | 29.52 | 749.8 | 43.7 | 6.6 | 43 | SW | | | 0 | | 1 | | | 0 | 0 | | Prof. Prestel. |
| Frankfort on the Main | 29.24 | 742.8 | 29.61 | 752.2 | 45.0 | 7.2 | 41 | WSW | | | 2 | | 8 | | | 0.008 | 0.2 | | Physical Society. |
| Friedrichshafen | 28.21 | 716.5 | 29.69 | 754.0 | 34.2 | 1.2 | 87 | WNW | | | 4 | | 8 | W | | 0.031 | 0.8 | | M. Wilhelm. |
| Hamburg | 29.42 | 747.2 | 29.49 | 749.0 | 39.4 | 4.1 | 61 | WSW | | | 3 | | 4c;k | SW | | 0.008 | 0.2 | Fair | Captain F. Hegemann. |
| Kiel | 29.44 | 747.8 | 29.46 | 748.2 | 40.3 | 4.6 | 61 | SW | | | 2 | | 8 | | | 0.006 | 0.16 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.41 | 747.0 | 29.49 | 749.0 | 38.3 | 3.5 | 59 | SW | | | | | | | | 0.002 | 0.05 | Hailing | Prof. E. Luther. |
| Köslin | | | 29.46 | 748.3 | 36.5 | 2.5 | | W | | | 2 | | 2 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.12 | 739.6 | 29.55 | 750.5 | 38.5 | 3.6 | 72 | SSW | | | 3 | | 9 | | | | | Snow & graupel. | Prof. Bruhns. |
| Memel, Naval School | 29.44 | 747.8 | 29.49 | 749.0 | 36.3 | 2.4 | 72 | W | | | 1 | | 1cs | | | | | | Reinbrecht von Skalweit. |
| Neufahrwasser | 29.44 | 747.7 | 29.45 | 748.1 | 41.2 | 5.1 | 58 | W | | | 1 | | 7 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.27 | 743.4 | 29.57 | 751.1 | 41.9 | 5.5 | 62 | NW | | | 3–4 | | 4 | | | 0 | 0 | Fair | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.11 | 739.4 | 29.67 | 753.7 | 37.8 | 3.2 | 73 | S | | | 3 | | 9 | SW | | 0.191 | 4.86 | | Dr. Schur. |
| Stuttgart | 28.67 | 728.3 | 29.64 | 752.8 | 36.0 | 2.2 | 61 | NW | | | 1 | | 6 | W | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | 29.00 | 736.5 | 29.51 | 749.6 | 41.0 | 5.0 | 44 | SW | | | 7 | | 5 | | | 0.009 | 0.23 | Foggy | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.08 | 713.1 | 29.63 | 752.6 | 32.0 | 0.0 | 90 | W | 2 | 1 | | | 10 | | WNW | 0.079 | 2.0 | Covered | Dr. Von Bebber. |
| Wustrow, Naval School | 29.50 | 749.3 | 29.54 | 750.3 | 37.2 | 2.9 | 80 | W | | | 2 | | 4 | | | 0 | 0 | Fair | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Königsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.50 | 749.3 | 29.89 | 759.3 | 61.9 | 16.6 | | S | | | 3.0 | | | | | | | Clear | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.88 | 758.9 | 29.93 | 760.2 | 80.6 | 27.0 | 63 | WSW | 31.0? | 13.8? | | | 4 | | | 0 | 0 | D. clouds | |
| Deesa | 29.45 | 748.0 | 29.91 | 759.8 | 94.5 | 34.7 | 20 | SSW | | | | | 9 | NW | | 0 | 0 | D. clouds | |
| Bombay | 29.81 | 757.1 | 29.84 | 758.0 | 87.1 | 30.6 | 58 | NW | 18.0 | 8.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.85 | 707.3 | 29.79 | 756.6 | 95.0 | 35.0 | 41 | E | | | | | 5 | | NE | 0 | 0 | Dust-whirl. | |
| Lahore | 29.14 | 740.3 | 29.88 | 759.0 | 86.0 | 30.0 | 42 | E | 2.8 | 1.2 | | | 10 | | | 0 | 0 | Cloudy | |
| Belgaum | 27.38 | 695.3 | 29.85 | 758.2 | 90.2 | 32.3 | 41 | S | 7.0 | 3.1 | | | 6 | NW | E | 0 | 0 | D. clouds | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.98 | 736.0 | 29.87 | 758.7 | 83.8 | 28.8 | 47 | Calm | 1.0 | 0.4 | | | 10 | | | 0 | 0 | | |
| Agra | 29.34 | 745.1 | 29.88 | 759.1 | 95.6 | 35.3 | 21 | S | | | | | 7 | | S | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.83 | 732.3 | 29.84 | 758.0 | 97.5 | 36.4 | 18 | Calm | 3.3 | 1.5 | | | | | | 0 | 0 | Blue sky | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.49 | 749.1 | 29.86 | 758.4 | 90.2 | 32.3 | 62 | NNW | 3.5 | 1.6 | | | 10 | | | 0 | 0 | Overcast | |
| Allahabad | 29.55 | 750.7 | 29.86 | 758.4 | 91.7 | 33.2 | 30 | Calm | 1.5 | 0.7 | | | 4 | N | | 0 | 0 | D. clouds | |
| Patna | 29.64 | 752.9 | 29.83 | 757.8 | 91.1 | 32.8 | 33 | W | 2.7 | 1.2 | | | 8 | SW | SW | 0 | 0 | D. clouds | |
| Hazaribagh | 27.89 | 708.3 | 29.87 | 758.6 | 88.0 | 31.1 | 13 | NW | 3.2 | 1.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.78 | 756.5 | 29.86 | 758.5 | 92.9 | 33.8 | 32 | SSE | 2.6 | 1.2 | | | 2 | | | 0 | 0 | D. clouds | |
| Calcutta (Alipore) | 29.80 | 758.4 | 29.88 | 758.9 | 94.6 | 34.8 | 25 | WNW | 3.0 | 1.3 | | | 1 | | NW | 0 | 0 | D. clouds | |
| Goalpara | 29.48 | 748.9 | 29.87 | 758.7 | 84.4 | 29.1 | 44 | WSW | 2.0 | 0.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.86 | 758.3 | 29.95 | 760.7 | 82.9 | 28.3 | 67 | W | 6.0 | 2.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Sibsagar | 29.61 | 752.0 | 29.95 | 760.6 | 74.9 | 23.8 | 64 | NE | 1.0 | 0.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.59 | 726.2 | 29.93 | 760.3 | 92.0 | 33.3 | 25 | NW | 2.6 | 1.2 | | | | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 28.98 | 736.1 | 29.40 | 746.7 | 37.2 | 2.9 | 83 | E | 7.4 | 3.3 | | | 10 | | | 1.480 | 37.6 | | Prof. Giovanni Codig. |
| Padua | 29.26 | 743.3 | 29.37 | 746.1 | 37.4 | 3.0 | 86 | N | 15.0 | 6.7 | | | 10 | | | 0.346 | 8.8 | | Prof. Dott. Lorenzloni |
| Vicenza | 29.21 | 741.8 | 29.40 | 746.8 | 36.8 | 2.4 | 89 | N | 7.4 | 3.3 | | | 10 | E | | 0.457 | 11.6 | | Conte Alm. Da Schio. |
| Bergamo | 28.07 | 713.0 | 29.41 | 746.9 | 39.6 | 4.2 | 52 | N | | | 4 | | 9 | | | 0.232 | 5.9 | | Prof. Trionfini Carlo. |
| Milan | 28.89 | 733.7 | 29.41 | 746.9 | 47.5 | 8.6 | | N | | | 4 | | 6 | S | | 0 | 0 | | Prof. Schiaparelli. |
| Moncalieri | 28.51 | 724.2 | 29.43 | 747.5 | 47.6 | 8.8 | 41 | NNW | 4.3 | 1.9 | | | 3 | | | 0 | 0 | | Prof. P. F. Denza. |
| Mondovi | 27.48 | 698.1 | 29.42 | 747.2 | 44.6 | 7.0 | 12 | N | | | 6 | | 2 | W | | 0 | 0 | | Prof. D. C. Bruno. |
| Porto Maurizio | 29.16 | 740.7 | 29.39 | 746.4 | 47.7 | 8.7 | 32 | NE | | | 4 | | 10 | NE | | 0 | 0 | | Prof. L. Vassallo. |
| Genoa | 29.22 | 742.2 | 29.39 | 746.6 | 53.8 | 12.1 | 11 | NE | 4.9 | 2.2 | | | 2 | | | 0.016 | 0.4 | | Prof. G. M. Garibaldi. |
| Parma | 29.13 | 739.8 | 29.44 | 747.8 | 47.1 | 8.4 | 58 | NW | | | 4 | | 2 | | | 0.063 | 1.6 | | Prof. P. Pigorini. |
| Florence | 29.17 | 740.9 | 29.43 | 747.5 | 48.2 | 9.0 | 59 | SW | | | 6 | | 10 | SW | | 0.118 | 3.0 | | Cav. F. Meucci. |
| Leghorn | 29.34 | 745.2 | 29.43 | 747.4 | 48.0 | 8.9 | 49 | WSW | 23.7 | 10.6 | | | 10 | WSW | | 0 | 0 | | Prof. P. Monte. |
| Pesaro | 29.32 | 744.6 | 29.37 | 745.9 | 55.9 | 13.3 | 51 | SW | 21.7 | 9.7 | | | 2 | SW | | 0 | 0 | | Prof. Luigi Guidi. |
| Urbino | 28.21 | 716.5 | 29.36 | 746.3 | 47 3 | 8.5 | 66 | SW | | | 6 | | 3 | | | 0.094 | 2.4 | | Prof. P. Serpieri. |
| Grosseto | 29.38 | 746.2 | 29.49 | 749.1 | 53.4 | 11.9 | 51 | SSE | | | 4 | | 4 | NW | | 0.350 | 8.9 | | Avv. P. Ponticelli. |
| Rome | 29.44 | 747.7 | 29.61 | 752.2 | 53.2 | 11.8 | 46 | WSW | 23.7 | 10.6 | | | 8 | | | 0.091 | 2.3 | | Prof. P. G. S. Ferrari. |
| Naples, O. U. | 29.46 | 748.3 | 29.66 | 753.4 | 60.1 | 15.6 | 57 | SSW | | | 6 | | 6 | WSW | | 0.236 | 6.0 | | Prof. L. Palmieri. |
| Lecce | | | | | 58.5 | 14.7 | 56 | WSW | 21.7 | 9.7 | | | 6 | SW | | 0 | 0 | | Prof. C. De Giorgi. |
| Cagliari | 29.49 | 749.1 | 29.69 | 754.0 | 57.2 | 14.0 | 40 | NW | | | 4 | | 2 | W | | 0 | 0 | | Prof. A. Pacinotti. |
| Cosenza | 28.86 | 733.1 | 29.76 | 755.8 | 57.7 | 14.3 | 71 | SSW | 3.8 | 1.7 | | | 9 | | | 0 | 0 | | Prof. F. D. Conti. |
| Palermo | 29.44 | 747.7 | 29.69 | 754.2 | 63.3 | 17.4 | 54 | SW | 8.7 | 3.9 | | | 10 | | | 0.063 | 1.6 | | Prof. G. Cacciatore. |
| Syracuse | 29.64 | 752.9 | 29.72 | 754.8 | 63.3 | 17.4 | 57 | SSW | | | 2 | | 10 | SW | | 0.004 | 0.1 | | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.12 | 739.6 | 29.67 | 753.7 | 55.4 | 13.0 | 54 | NE | 16.1 | 7.2 | | | 4 | N | | 0 | 0 | | Prof. F. Brioschi |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 29.85 | 758.2 | 29.92 | 759.9 | 53.8 | 12.1 | 75 | NW | 4.0 | 1.8 | | 3cs | 0 | | | 0 | 0 | Fair | The Observatory. |
| Tokei (Yeddo) University | 29.81 | 757 2 | 29.91 | 759.6 | 55 | 12 8 | 68 | NW | 2 | 0.9 | | 4cs | | W | | 0 | 0 | Fair | Prof. P. V. Veeder. |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | | | | | | | | | | | | | | | | | | | I. N. Marin, M. D. |
| Córdoba | | | | | | | | | | | | | | | | | | | C. Peña, M. D. |
| Cuernavaca | | | | | | | | | | | | | | | | | | | L. Castillo, A. E. |
| Guadalajara | 25.12 | 637.9 | 30.18 | 766.5 | 46.8 | 8.2 | 62 | SW | 1.8 | 0.8 | | 0 | 0 | | | 0 | 0 | Clear | Prof. L. Perez. |
| Guanajuato | 23.67 | 601.3 | 29.93 | 760.3 | 56.3 | 13.5 | 53 | W | | | | 0 | 0 | | | 0 | 0 | Very clear | Prof. V. Fernandez |
| Leon | | | | | 53.6 | 12.0 | 57 | NNW | 5.1 | 2.3 | | 1cs | 0 | SW | | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico | 23.08 | 586.2 | 30.22 | 767.6 | 46.4 | 8.0 | 66 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Fair | Central Observatory. |
| Orizaba | | | | | | | | | | | | | | | | | | | N. N. |
| Orizaba | | | | | | | | | | | | | | | | | | | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | | | | | 50.5 | 10.3 | 53 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Very clear | M. V. de Leon, M. E. |
| Puebla | 23.24 | 592.8 | 30.08 | 764.1 | 46.6 | 8.1 | 57 | ENE | 1.8 | 0.8 | | 1c | 0 | | | 0 | 0 | Clear | Prof. B. Gonzalez. |
| Toluca | | | | | | | | | | | | | | | | | | | Prof. C. Velazquez. |
| Tlacotalpam | 29.92 | 760.0 | 29.94 | 760.3 | 67.1 | 19.5 | 90 | S | 1.8 | 0.8 | | 6ck | 4k | S | N | 0 | 0 | Covered | Prof. F. R. Bayly. |
| San Luis Potosi | | | | | | | | | | | | | | | | | | | G. Barroeta, M. D. |
| Vera-Cruz | 29.98 | 760.9 | 29.99 | 761.6 | 70.7 | 21.5 | 77 | NW | | | | 2c | 6sk | | | 0 | 0 | Hazy | Prof. J. Rossell. |
| Zacatecas | | | | | 48.2 | 9.0 | 52 | NW | 0.9 | 0.4 | | 0 | 0 | | | 0 | 0 | Blue sky | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | | | | | | | | | | | | | | | | | | | P. Spina. [M. M. D. D. |
| Morelia | | | | | | | | | | | | | | | | | | | M. Tena, F. L. Param. |
| Durango | | | | | | | | | | | | | | | | | | | M. V. de Leon, C. E. |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,771 m., or 5,810 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,883 m. or 5,210.4 ft.; Zacatecas, 2,494 m., or 8,183.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.54 | 750.2 | 29.54 | 750.2 | 41.7 | 5.4 | | W | | | 4 | | | | | 0.075 | 1.9 | | |
| Groningen | 29.42 | 747.3 | 29.48 | 748 7 | 42.3 | 5.7 | | W | | | 1 | | | | | 0.012 | 0.3 | | |
| Helder | 29.45 | 748.1 | 29.45 | 748.1 | 41.4 | 5.2 | | WSW | | | 2 | | | | | 0.024 | 0.6 | | |
| Hellevoetsluis | 29.52 | 749.8 | 29.52 | 749.8 | 41.0 | 5.0 | 85 | WNW | | | 2 | | | | | | | | |
| Utrecht | 29.47 | 748.4 | 29.51 | 749.6 | 40.1 | 4.5 | 76 | WSW | | | 3 | | 5 | | | 0.197 | 5.0 | Very cloudy | H. v. d. Bruk. |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.30 | 744.2 | 29.35 | 745.6 | 37 4 | 3.0 | 59 | NNW | 9.0 | 1.0 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Bröno | 29.45 | 748.1 | 29.49 | 749.1 | 25.9 | — 3.4 | 65 | ENE | 18 | 8 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.20 | 741.6 | 29.35 | 745.4 | 40.3 | 4.6 | 35 | S | 4 | 2 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.65 | 753.0 | 29.69 | 754.1 | 24 8 | — 4.0 | 64 | NE | 9 | 4 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 mln.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.96 | 760.9 | 30.15 | 765.8 | 58.3 | 14.6 | 87 | SSW | 3.1 | 1.4 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio |
| Campo Major | 28.87 | 733.2 | 29.90 | 759.4 | 59.5 | 15.3 | 55 | NNW | 11.2 | 5.0 | ..... | ..... | 5 | NNW | ..... | 0.846 | 21.5 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.08 | 764.1 | 30.17 | 766.3 | 67.6 | 19.8 | 53 | SW | 4.9 | 2.2 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.62 | 752.3 | 29.98 | 761.6 | 55.2 | 12.9 | 59 | NNW | 23.7 | 10.6 | ..... | ..... | 4 | WNW | ..... | 0.673 | 17.1 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.11 | 764.8 | 30.20 | 767.0 | 61.9 | 16.6 | 72 | SSE | 1.8 | 0.8 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation: occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.73 | 755.1 | 29.73 | 755.2 | 87.4 | 30.8 | ..... | SSE | ..... | ..... | 1 | ..... | 8 | ..... | SSE | 1 | ..... | Blue sky | J. F. R. R. Bastos, Com'd't. A. J. de Mattos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Sado, Porto Praya, Cape Verde Islands | 30.07* | 763.8* | 30.08* | 764.1* | 72.5 | 22.5 | ..... | NNE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 2 | NE | Blue sky | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.79 | 756.6 | 29.79 | 756.7 | ..... | ..... | ..... | NW | ..... | ..... | 1 | ..... | 1 | ..... | NW | 1 | ..... | Blue sky | F. Texeira da Silva, Com'd't. F. J. Ferreina, dos Amas, Com' |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.06 | 738.0 | 29.49 | 749.0 | 36.9 | 2.7 | 75 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.05 | 737.9 | 29.48 | 748.7 | 37.6 | 3.1 | 61 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy clouds | Astronomical Obs. |
| Dorpat | 29.17 | 740.9 | 29.42 | 747.2 | 33.6 | 0.9 | 65 | WSW | 4 | 2 | ..... | ..... | 7ck | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.35 | 745.5 | 29.37 | 745.9 | 29.3 | — 1.5 | 92 | NW | 9 | 4 | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 28.97 | 735.8 | 29.30 | 744 2 | 24.4 | — 4.2 | 100 | W | 13 | 6 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Ch. Forsten. |
| Kieff | 28.90 | 734.1 | 29.54 | 750.3 | 40.1 | 4.5 | 82 | S | 16 | 7 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.89 | 754.1 | 29.76 | 755.9 | 50.4 | 10.2 | 65 | S | 31 | 14 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.98 | 761.4 | 30.00 | 761.9 | 44.6 | 7.0 | 94 | S | 11 | 5 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 28.99 | 736.3 | 29.54 | 750.4 | 39.2 | 4.0 | 66 | S | 7 | 3 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.72 | 754.8 | 29.92 | 760.0 | 46.8 | 8.2 | 55 | SW | 18 | 8 | ..... | ..... | 6ck | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.25 | 742.9 | 29.27 | 743.4 | 31.6 | — 0.2 | 70 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light clouds | Ogorodnikof. |
| Tiflis | 28.68 | 728.4 | 30.10 | 764.5 | 55.4 | 13.0 | 29 | SE | 4 | 2 | ..... | ..... | 3k | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.19 | 766.7 | 30.10 | 764.6 | 44.2 | 6.8 | 61 | NNW | 2 | 1 | ..... | ..... | 8k | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Kasan | 29.58 | 751.4 | 29.86 | 758.4 | 37.6 | 3.1 | 62 | SW | 4 | 2 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernichef. |
| Ekaterinburg | 28.75 | 730.3 | 29.72 | 754.8 | 36.1 | 2.3 | 65 | W | 22 | 10 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.70 | 754.4 | 29.94 | 760.5 | 39.6 | 4.2 | 90 | NNW | 20 | 9 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.43 | 722.1 | 30.14 | 765.6 | 54.5 | 12.5 | 89 | Calm | 0 | 0 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.58 | 751.4 | 30.13 | 765.2 | 31.1 | — 0.5 | 75 | N | 0 | 0 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.80 | 757.0 | 30.15 | 765.7 | 19.6 | — 6.9 | 83 | NW | 4 | 2 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Krotkowo* | 29.48 | 748.8 | 29.97 | 761.1 | 41.4 | 5.2 | 50 | SSW | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Peking, (China) | 29.27 | 743.4 | 29.41 | 747.0 | 61.3 | 16.3 | 30 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.56 | 700.0 | 29.69 | 754.0 | 27.5 | — 2.5 | 54 | W | 2 | 1 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 12.7 | —10.7 | 90 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.27 m., or 1,621.37 ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.07 m., or 1,942.27 ft. * N. 53° 47', E. 48° 34'.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | ..... | ..... | 29.61 | 752.0 | 54.7 | 12.6 | 55 | S | 4.1 | 1.84 | ..... | 0 | 1k | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.83 | 757.7 | 29.89 | 759.2 | 55.8 | 13.2 | 63 | NW | 3.1 | 1.39 | ..... | 3 | 2 | NW | ..... | 0.217 | 5.5 | Cloudy | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.78 | 680.1 | ..... | ..... | 46.4 | 8.0 | 70 | W | 7.3 | 3.28 | ..... | 1 | 5 | N | ..... | 0 | 0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.58 | 700.6 | 29.79 | 756.6 | 58.5 | 14.7 | 30 | SW | 6.0 | 2.87 | ..... | 0 | 3 | ..... | ..... | 0 | 0 | Cloudy | The Staff. |
| Murcia, Met. Obs'y | 29.63 | 752.7 | 29.79 | 756.6 | 61.9 | 16.6 | 68 | NNE | 3.5 | 1.56 | ..... | 5 | 5 | E | ..... | Inap | Inap. | Covered | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.08 | 738.5 | 29.98 | 761.6 | 49.1 | 9.5 | 77 | NNW | 13.4 | 5.97 | ..... | 2 | 6 | NNW | ..... | 0.008 | 0.2 | Cloudy | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.94 | 760.6 | 30.01 | 762.2 | 72.9 | 22.7 | 75 | N | 5.6 | 2.5 | ..... | 6c;cs | 4ks | WSW | NNE | 0 | 0 | Fair | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 29.81 | 757.1 | 29.91 | 759 6 | 60.6 | 15.9 | 79 | WSW | 24.9 | 11.1 | ..... | 0 | 8 | ..... | W | 0.193 | 4.9 | ..... | Capt. C. Pulazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.58 | 751.4 | 29.99 | 761.7 | 80.6 | 27.0 | 85 | S | 2.2 | 1.00 | ..... | 2c | 1c | S | S | 0 | 0 | Clear | Leonardo de Tejeda, Chief of Engineers. |

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft. The barometer readings at Barcelona are published as given.

## SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.38 | 746.2 | 29.42 | 747.2 | 20.8 | — 6.2 | ..... | NE | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.33 | 744.9 | 29.43 | 747.5 | 21.6 | — 5.8 | 80 | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.37 | 745.9 | 29.42 | 747.2 | 22.6 | — 5.2 | 80 | NNE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.20 | 741 7 | 29.38 | 746.2 | 32.5 | 0.3 | 70 | WSW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.31 | 744.5 | 29.38 | 746.2 | 34.9 | 1.6 | 69 | WNW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.30 | 744.3 | 29.38 | 746.2 | 32.2 | 0.1 | 74 | WNW | 3.6 | 1.6 | ..... | ..... | 10 | ..... | SW | 0.003 | 0.08 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.21 | 716.6 | 29.69 | 754.2 | 37.2 | 2.9 | 51 | S | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0.189 | 4.8 | Cloudy | The Observatory. |
| Zurich | 28.02 | 711.8 | 29.75 | 755.6 | 29.5 | — 1.4 | 88 | NW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.068 | 1.6 | Snowing | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —7.8 mm.; Thermometer, —5.9 cent.; Relative Humidity, —9 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.83 | 757.7 | 57.9 | 14.4 | 58 | SSW | 18 | 8.0 | ..... | ..... | 6 | ..... | SW | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanides. |
| Valona | ..... | ..... | 29.74 | 755.5 | 61.0 | 16.1 | ..... | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.08 | 2. | Covered | A. Bertrand. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.97 | 761.2 | 30.09 | 764.2 | 61.5 | 16.4 | 63 | N | ..... | ..... | 1 | ..... | 9ks | ..... | SW | 0 | 0 | D. clouds | Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the cooperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.09 | 738.9 | 29 41 | 747.0 | 20 | — 6.7 | ..... | N | 10 | 4.5 | ..... | ..... | 10s | ..... | ..... | 0.05 | 1.3 | Light snow | W. R. Bigg. |
| *Chatham, N B | 29.27 | 743.4 | 29.33 | 745.0 | 26 | — 3.3 | 89 | NE | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.03 | 0.8 | Cloudy | G. A. Blair. |
| Charlottetown, P. E. Island | 29.32 | 744.7 | 29.36 | 745.7 | 35 | 1.7 | 95 | S | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0.050 | 1.27 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.12 | 739.6 | 29.32 | 744.7 | 23.4 | — 4.8 | 79 | NW | ..... | ..... | 2 | ..... | 10n | ..... | ..... | 0.40 | 10 2 | Snowing | James Smith, M. A. |
| Dalhousie, N. B | 29.21 | 741.9 | ..... | ..... | ..... | ..... | ..... | E | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.15 | 3.8 | Snowing | H. A. Johnson. |
| Esquimault, B. C | 29.78 | 756.4 | 29.83 | 757.7 | 45.8 | 7.4 | 100 | Calm | ..... | ..... | ..... | 2cs | 0 | ..... | ..... | 0 | 0 | Clear | W. H. Bevis. |
| *Father Point, Quebec | 29.35 | 745.5 | 29.37 | 746.0 | 19 | — 7.2 | 99 | N | 19 | 8.5 | ..... | ..... | 10n | ..... | ..... | 0.15 | 3.8 | Heavy snow | J. McWilliams. |
| Fredericton, N. B | 29.24 | 742.7 | 29.30 | 744.2 | 34.1 | 1.2 | 97 | E | 1 | 0.4 | ..... | ..... | 10s | ..... | ..... | 0.100 | 2.54 | Cloudy | Prof. Harrison. |
| *Fort Garry Manitoba | 29.50 | 749.3 | 30.40 | 772.1 | 14 | —10.0 | 96 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.44 | 722.4 | 29.60 | 751.8 | 19.5 | — 6.9 | 77 | NW | ..... | ..... | 2 | ..... | 10n | ..... | ..... | Inap. | Inap. | Cloudy | James Grant. |
| *Halifax, N. S | 29.26 | 743.2 | 29.39 | 746.5 | 39 | 3.9 | 87 | SW | 8 | 3.6 | ..... | ..... | 5ks | ..... | SW | 0.041 | 1.04 | Fair | F. Allison, M. A. |
| Hamilton, Ontario | 29.16 | 740.7 | 29.55 | 750.6 | 21.7 | — 5.7 | 86 | N | ..... | ..... | 4 | 10cs | 0 | ..... | ..... | 0 | 0 | Cloudy | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.56 | 750.8 | 29.59 | 751.6 | 33 | 0.6 | 100 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.03 | 0.8 | Overcast | E. Weedon. |
| *Kingston, Ontario | 29.01 | 736.8 | 29.36 | 745.7 | 20 | — 6.7 | 93 | N | 9 | 4.0 | ..... | ..... | 10n | ..... | ..... | 0.08 | 2.0 | Light snow | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.39 | 746.5 | 29.43 | 747.5 | 37 | 2.8 | ..... | SW | 3 | 1.3 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Dull | C. H. Rigby. |
| *Montreal, Quebec | 29.14 | 740.1 | 29.35 | 745.5 | 23 | — 5.0 | 76 | NE | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0.01 | 0.3 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 28.92 | 734.6 | 29.67 | 753.6 | 6 | —14.4 | 71 | N | 21 | 9.4 | ..... | 5k | 5ks | N | N | 0 | 0 | Cloudy | Rev. R. Mosley. |
| Peterboro, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 28.85 | 732.8 | 29.57 | 751.1 | 22 | — 5.6 | 72 | NW | 18 | 8.0 | ..... | ..... | 10n | ..... | W | 0.51 | 13.0 | Light snow | H. Morgan. |
| Port Hastings, N. S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Peter Grant. |
| Port Stanley, Ontario | 28.93 | 734.8 | 29.61 | 752.1 | 23 | — 5.0 | 85 | W | 16 | 7.2 | ..... | 5k | 0 | NW | ..... | 0.40 | 10.2 | Fair | M. Payne. |
| *Quebec, Quebec | 29.02 | 737.1 | 29.36 | 745.7 | 24 | — 4.4 | 87 | NE | ..... | ..... | 6 | ..... | 10n | ..... | NE | 0.20 | 5.1 | Cloudy | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.15 | 740.4 | 29.65 | 753.1 | 4 | —15.6 | 74 | N | 15 | 6.7 | ..... | ..... | 10s | ..... | N | Inap. | Inap. | Cloudy, | W. H. McIntyre. |
| St. Andrews, N. B | 29.25 | 742.9 | 29.30 | 744.2 | 39 | 3.9 | 86 | SW | 1 | 0.4 | ..... | 5k | 5ks | NW | ..... | 0 | 0 | Cloudy | Dr. Gove. |
| St. John, N. B | 29.16 | 740.7 | 29.33 | 745.0 | 35 | 1.7 | 100 | SE | 3 | 1.3 | ..... | ..... | 10s | ..... | ..... | 0.415 | 10.54 | Threatening | G. Murdock, C. E. |
| *Saugeen, Ontario | 28.89 | 733.8 | 29.64 | 752.8 | 15 | — 9.4 | 91 | N | 10 | 4.5 | ..... | ..... | 10cs | ..... | N | Inap. | Inap. | Light snow | K. Stewart. |
| Stayner, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. J. Cole. |
| Stratford, Ontario | 28.26 | 717.8 | 29.62 | 752.3 | 17 4 | — 8.1 | 89 | NW | 18 | 8.0 | ..... | ..... | 10s | ..... | ..... | 0.344 | 8.74 | Cloudy | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.41 | 747.0 | 29.44 | 747.8 | 36 | 2.2 | 85 | S | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | T. C. Hill. |
| *Toronto, Ontario | 29.16 | 740.7 | 29.56 | 750.8 | 20 | — 6.7 | 87 | NW | 24 | 10.7 | ..... | ..... | 10n | ..... | NW | 0.17 | 4.3 | Light snow | Magnetic Observatory. |
| Windsor, N. S | 29.27 | 743.4 | 29.36 | 745.7 | 40.0 | 4.4 | 91 | SW | 6 | 2.7 | ..... | 9k | 0 | ..... | ..... | 0 | 0 | Fair | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 36.0 | 2.2 | 100 | S | ..... | ..... | ..... | 5 | 5 | ..... | ..... | 0.02 | 0.5 | Cloudy | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount Up'er 0–10 | Clouds. Amount Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 28.96 | 735.6 | 29.17 | 740.9 | 46 | 7.8 | 69 | S | 5 | 2.2 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Alpena, Michigan | 29.08 | 738.6 | 29.77 | 756.1 | 7 | —13.9 | 77 | NW | 24 | 10.7 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Atlantic City, New Jersey | 29.29 | 744.0 | 29.31 | 744.5 | 48 | 8.9 | 92 | SW | 15 | 6.7 | ..... | 5k | 5ks | W | Calm | 0 | 0 | Cloudy | |
| Augusta, Georgia | 29.57 | 751.1 | 29.75 | 755.6 | 61 | 16.1 | 66 | SW | 6 | 2.7 | ..... | ..... | Sm'e | ..... | Calm | 0 | 0 | Smoky | |
| Baltimore, Maryland | 29.22 | 742.2 | 29.27 | 743.4 | 53 | 11.7 | 80 | W | 6 | 2.7 | ..... | ..... | 10ks | ..... | W | 0 | 0 | Threatening | |
| Barnegat, New Jersey | 29.30 | 741.2 | 29.32 | 744.7 | 48 | 8.9 | 70 | SW | 12 | 5.4 | ..... | 5k | Haze | NW | Calm | 0 | 0 | Fair | |
| Bismarck, Dakota | 28.49 | 723.6 | 30.25 | 768.3 | 35 | 1.7 | 80 | E | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boise City, Idaho | 27.02 | 686.3 | 29.90 | 759.4 | 47 | 8.3 | 77 | S | 1 | 0.4 | ..... | 5k | 0 | S | ..... | 0 | 0 | Fair | |
| Boston, Massachusetts | 29.10 | 739.1 | 29.25 | 742.9 | 46 | 7.8 | 70 | S | 6 | 2.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Cloudy | |
| Brackettville, Texas | 28.87 | 733.3 | 29.91 | 759.7 | 51 | 10.6 | 86 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.16 | 4.1 | Clear | |
| Breckenridge, Minnesota | 29.17 | 740.9 | 30.24 | 768.1 | 22 | — 5.6 | 86 | N | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Brownsville, Texas | 29.95 | 760.7 | 30.02 | 762.5 | 65 | 18.3 | 90 | Calm | 0 | 0 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Buffalo, New York | 28.74 | 730.0 | 29.45 | 748.0 | 22 | — 5.6 | 100 | NW | 18 | 8.0 | ..... | ..... | 10n | ..... | Calm | 0.35 | 8.9 | Heavy snow | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 51 | 10.6 | 63 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.03 | 737.3 | 29.29 | 744.0 | 29 | — 1.7 | 89 | N | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.02 | 0.5 | Light snow | |
| Cairo, Illinois | 29.49 | 749.0 | 29.87 | 758.7 | 57 | 13.9 | 52 | N | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Camp Grant, Arizona | 25.23 | 640.8 | 30.03 | 762.7 | 47 | 8.3 | 48 | E | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | 26.78 | 680.2 | 30.27 | 768.8 | 47 | 8.3 | 44 | NW | ..... | ..... | 1 | 8c | 0 | W | ..... | 0 | 0 | Fair | |
| Campo, California | 27.37 | 695.2 | 29.94 | 760.5 | 36 | 2.2 | 90 | E | 2 | 0.9 | ..... | 2k | 0 | W | ..... | 0 | 0 | Fair | |
| Cape Hatteras, N. Carolina | 29.60 | 751.8 | 29.61 | 752.1 | 59 | 15.0 | 94 | SW | 20 | 8.9 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Cape Henry, Virginia | 29.43 | 747.5 | 29.45 | 748.0 | 59 | 15.0 | 70 | SW | 20 | 8.9 | ..... | Haze | Haze | ..... | ..... | 0 | 0 | Hazy | |
| Cape Lookout, N. Carolina | 29.62 | 752.3 | 29.63 | 752.6 | 60 | 15.6 | 88 | SW | 22 | 9.8 | ..... | Haze | Haze | ..... | ..... | 0 | 0 | Fair | |
| Cape May, New Jersey | 29.28 | 743.7 | 29.31 | 744.5 | 53 | 11.7 | 79 | S | 18 | 8.0 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Hazy | |
| Charleston, South Carolina | 29.73 | 755.1 | 29.80 | 756.9 | 61 | 16.1 | 82 | W | 8 | 3.6 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Cheyenne, Wyoming | 24.11 | 612.4 | 30.05 | 763.3 | 32 | 0.0 | 79 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.10 | 739.1 | 29.81 | 757.2 | 31 | — 0.6 | 69 | N | 12 | 5.4 | ..... | 10k | 0 | N | ..... | 0 | 0 | Cloudy | |
| Cincinnati Ohio | 28.97 | 735.8 | 29.61 | 752.1 | 46 | 7.8 | 62 | N | 14 | 6.3 | ..... | 2k | 2ks | NW | NW | 0.01 | 0.3 | Fair | |
| Cleveland, Ohio | 28.87 | 733.3 | 29.61 | 752.1 | 29 | — 1.7 | 67 | N | 28 | 12.5 | ..... | ..... | 10s | ..... | NE | 0.48 | 12.2 | Cloudy | |
| Concho, Texas | 28.12 | 714.2 | 29.84 | 757.9 | 48 | 8.9 | 56 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.51 | 749.5 | 29.97 | 761.2 | 59 | 15.0 | 54 | Calm | 0 | 0 | ..... | 2cs | Haze | Calm | Calm | 0 | 0 | Fair | |
| Davenport, Iowa | 29.29 | 744.0 | 29.94 | 760.5 | 38 | 3.3 | 63 | N | 8 | 3.6 | ..... | 1c | 0 | N | ..... | 0 | 0 | Clear | |
| Deadwood, Dakota | 25.50 | 647.7 | ..... | ..... | 32 | 0.0 | 89 | S | 1 | 0.4 | ..... | 5cs | Haze | Calm | Calm | 0 | 0 | Fair | |
| Denison, Texas | 29.17 | 740.9 | 29.96 | 761.0 | 59 | 15.0 | 48 | NW | 8 | 3.6 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Denver, Colorado | 24.85 | 631.4 | 30.08 | 764.0 | 40 | 4.4 | 39 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Detroit, Michigan | 28.96 | 735.6 | 29.65 | 753.1 | 25 | — 3.9 | 62 | N | 15 | 6.7 | ..... | 0 | 0 | ..... | ..... | 0.45 | 11.4 | Clear | |
| Dodge City, Kansas | 27.50 | 698.5 | 29.84 | 757.9 | 41 | 5.0 | 91 | NE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 29.21 | 741.9 | 29.92 | 760.0 | 34 | 1.1 | 43 | N | 15 | 6.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Duluth, Minnesota | 29.39 | 746.5 | 30.12 | 765.0 | 19 | — 7.2 | 69 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eagle Pass, Texas | 29.18 | 741.2 | 29.94 | 760.2 | 52 | 11.1 | 94 | N | 4 | 1.8 | ..... | ..... | 10k | ..... | E | Inap. | Inap. | Cloudy | |
| Eastport, Maine | 29.20 | 741.7 | 29.27 | 743.4 | 40 | 4.4 | 82 | S | 7 | 3.1 | ..... | 8ek;hz | 0 | W | ..... | 0 | 0 | Hazy | |
| Erie, Pennsylvania | 28.79 | 731.3 | 29.52 | 749.8 | 26 | — 3.3 | 100 | N | 22 | 9.8 | ..... | ..... | 10n | ..... | ..... | 0.30 | 7.6 | Light snow | |
| Escanaba, Michigan | 29.24 | 742.7 | 29.94 | 760.5 | 11 | —11.7 | 80 | NW | 22 | 9.8 | ..... | ..... | 10n | ..... | NW | 0.04 | 1.0 | Light snow | |
| Florence, Arizona | 28.23 | 717.0 | 29.83 | 757.7 | 60 | 15.6 | 55 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | 24.15 | 613.4 | 30.15 | 765.8 | 37 | 2.8 | 80 | SW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.58 | 649.7 | ..... | ..... | 40 | 4.4 | 73 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.08 | 2.0 | Clear | |
| Fort Gibson, Indian Ter | 29.43 | 747.5 | 29.96 | 761.0 | 58 | 14.4 | 58 | Calm | 0 | 0 | ..... | 2c | Sm'e | NW | Calm | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.72 | 729.5 | 29.99 | 761.7 | 55 | 12.8 | 45 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.47 | 748.5 | 29.50 | 749.3 | 22 | — 5.6 | 100 | NE | 15 | 6.7 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Fort Sill, Indian Territory | 28.76 | 730.5 | 29.87 | 758.7 | 55 | 12.8 | 50 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Galveston, Texas | 29.97 | 761.2 | 30.02 | 762.5 | 63 | 17.2 | 94 | SW | 3 | 1.3 | ..... | 1cs | Hz;fog | Calm | Calm | 0 | 0 | Fair | |
| Grand Haven, Michigan | 29.14 | 740.1 | 29.82 | 757.4 | 23 | — 5.0 | 73 | NE | 21 | 9.4 | ..... | ..... | 10n | ..... | Calm | 0.51 | 13.0 | Light snow | |
| Indianapolis, Indiana | 28.99 | 736.3 | 29.79 | 756.7 | 34 | 1.1 | 52 | NW | 20 | 8.9 | ..... | 10k | 0 | NW | ..... | Inap. | Inap. | Cloudy | |
| Indianola, Texas | 30.00 | 762.0 | 30.03 | 762.7 | 62 | 16.7 | 94 | NW | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Jacksboro, Texas | 28.84 | 732.5 | 29.96 | 761.0 | 56 | 13.3 | 40 | SW | 6 | 2.7 | ..... | 1c | 0 | S | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 28.87 | 733.7 | 29.90 | 759.4 | 63 | 17.2 | 83 | NE | 4 | 1.8 | ..... | 0 | Haze | ..... | NE | 0 | 0 | Hazy | |
| Keokuk, Iowa | 29.27 | 743.4 | 29.89 | 759.2 | 43 | 6.1 | 73 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Key West, Florida | 29.92 | 760.0 | 29.95 | 760.7 | 70 | 21.1 | 85 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Kittyhawk, North Carolina | 29.53 | 750.0 | 29.55 | 750.6 | 57 | 13.9 | 87 | SW | 18 | 8.0 | ..... | 0 | 2ks | ..... | SW | 0 | 0 | Fair | |
| Knoxville, Tennessee | 28.65 | 727.7 | 29.63 | 752.6 | 62 | 16.7 | 46 | SW | 14 | 6.3 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Hazy | |
| La Crosse, Wisconsin | 29.21 | 741.9 | 29.97 | 761.2 | 28 | — 2.2 | 66 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 26.13 | 663.7 | 30.28 | 769.1 | 38 | 3.3 | 71 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Laredo, Texas | 29.60 | 751.8 | 29.94 | 760.5 | 61 | 16.1 | 82 | Calm | 0 | 0 | ..... | 10k | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 29.17 | 740.9 | 30.03 | 762.7 | 43 | 6.1 | 67 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.63 | 752.6 | 29.97 | 761.2 | 57 | 13.9 | 87 | E | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Louisville, Kentucky | 29.17 | 740.9 | 29.73 | 755.1 | 43 | 6.1 | 51 | NW | 24 | 10.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Lynchburg, Virginia | 28.78 | 731.0 | 29.42 | 747.3 | 57 | 13.9 | 69 | SW | 2 | 0.9 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Marquette, Michigan | 29.20 | 741.7 | 29.94 | 760.5 | 14 | —10.0 | 82 | NW | 20 | 8.9 | ..... | ..... | 10s | ..... | NW | 0.10 | 2.5 | Cloudy | |
| Mason, Texas | 28.40 | 721.3 | 30.15 | 765.8 | 57 | 13.9 | 58 | W | 4 | 1.8 | ..... | 2c | 2s | Calm | Calm | 0 | 0 | Fair | |
| Memphis, Tennessee | 29.54 | 750.3 | 29.84 | 757.9 | 64 | 17.8 | 45 | W | 5 | 2.2 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Milwaukee, Wisconsin | 29.08 | 738.6 | 29.83 | 757.7 | 28 | — 2.2 | 66 | N | 10 | 4.5 | ..... | 0 | 5s | ..... | NW | 0.03 | 0.8 | Fair | |
| Mobile, Alabama | 29.91 | 759.7 | 29.95 | 760.7 | 63 | 17.2 | 62 | W | 4 | 1.8 | ..... | 2c | Haze | Calm | Calm | 0 | 0 | Fair | |
| Montgomery, Alabama | 29.66 | 753.4 | 29.89 | 759.2 | 59 | 15.0 | 72 | SW | 5 | 2.2 | ..... | 5c | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Morgantown, West Virginia | 28.29 | 718.6 | 29.30 | 744.2 | 47 | 8.3 | 85 | W | 10 | 4.5 | ..... | ..... | 10n | ..... | NW | 0.49 | 12.4 | Light rain | |
| Mt. Washington, N. H. | 23.04 | 585.2 | 29.40 | 746.7 | 26 | — 3.3 | 88 | W | 24 | 10.7 | ..... | 10s | 2s | W | W | 0 | 0 | Cloudy | |
| Nashville, Tennessee | 29.22 | 742.2 | 29.73 | 755.1 | 63 | 17.2 | 52 | NW | 10 | 4.5 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Hazy | |
| New Haven, Connecticut | 29.15 | 740.4 | 29.26 | 743.2 | 56 | 10.0 | 79 | SW | 4 | 1.8 | ..... | 5c | Haze | ..... | ..... | 0 | 0 | Hazy | |
| New London, Connecticut | 29.25 | 742.9 | 29.29 | 744.0 | 48 | 8.9 | 85 | SW | 4 | 1.8 | ..... | 5cs;ck | Haze | SW;Calm | Calm | 0 | 0 | Dense haze | |
| New Orleans, Louisiana | 29.93 | 760.2 | 29.99 | 761.7 | 61 | 16.1 | 71 | W | 4 | 1.8 | ..... | 5ck | Haze | W | Calm | 0 | 0 | Hazy | |
| Newport, Rhode Island | 29.24 | 742.7 | 29.29 | 744.0 | 44 | 6.7 | 76 | SW | 7 | 3.1 | ..... | 5c | Haze | ..... | ..... | 0 | 0 | Hazy | |
| New York, New York | 29.11 | 739.4 | 29.28 | 743.7 | 48 | 8.9 | 70 | S | 6 | 2.7 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Norfolk, Virginia | 29.41 | 747.0 | 29.47 | 748.5 | 56 | 13.3 | 81 | S | 13 | 5.8 | ..... | Haze | Sm'e | ..... | ..... | 0 | 0 | Smoky | |
| North Platte, Nebraska | 27.24 | 691.9 | 29.90 | 759.4 | 35 | 1.7 | 90 | W | 12 | 5.4 | ..... | 2c | Sm'e | W | Calm | 0 | 0 | Fair | |
| Olympia, Washington Ter. | 29.77 | 756.1 | 29.81 | 757.2 | 46 | 7.8 | 92 | S | 1 | 0.4 | ..... | 0 | 5s | ..... | S | 0 | 0 | Fair | |
| Omaha, Nebraska | 29.07 | 738.4 | 30.19 | 766.8 | 36 | 2.2 | 71 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Oswego, New York | 28.98 | 736.1 | 29.30 | 744.2 | 26 | — 3.3 | 88 | NE | 24 | 10.7 | ..... | ..... | 10n | ..... | Calm | 0.31 | 7.9 | Heavy snow | |
| Pembina, Dakota | 29.46 | 748.3 | 30.36 | 771.1 | 15.5 | — 9.2 | 74 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Philadelphia, Pennsylvania | 29.21 | 741.9 | 29.26 | 743.2 | 50 | 10.0 | 78 | S | 11 | 4.9 | ..... | ..... | 8ks;s | ..... | SW | 0 | 0 | Cloudy | |
| Phœnix, Arizona | 28.79 | 731.3 | 30.59 | 777.0 | 55 | 12.8 | 62 | W | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.89 | 454.4 | 30.10 | 764.5 | 12 | —11.1 | 61 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pioche, Nevada | 24.03 | 610.4 | 29.80 | 756.9 | 43 | 6.1 | 75 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Pittsburg, Pennsylvania | 28.58 | 725.9 | 29.38 | 746.2 | 35 | 1.7 | 90 | N | 16 | 7.2 | ..... | ..... | 10n | ..... | N | 0.27 | 6.9 | Light snow | |
| Port Huron, Michigan | 28.94 | 735.1 | 29.63 | 752.6 | 22 | — 5.6 | 72 | N | 16 | 7.2 | ..... | 0 | 5ks | ..... | N | 0.15 | 3.8 | Fair | |
| Portland, Maine | 29.17 | 740.9 | 29.22 | 742.2 | 46 | 7.8 | 77 | S | 6 | 2.7 | ..... | 10k | Haze | W | ..... | 0 | 0 | Cloudy | |
| Portland, Oregon | 29.78 | 756.4 | 29.88 | 758.9 | 56 | 13.3 | 93 | W | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Prescott, Arizona | 24.79 | 629.6 | 30.15 | 765.8 | 37 | 2.8 | 71 | SE | ..... | ..... | 1 | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| Punta Rassa, Florida | 29.97 | 761.2 | 29.99 | 761.7 | 67 | 19.4 | 79 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Red Bluff, California | 29.46 | 748.3 | 29.81 | 757.2 | 56 | 13.3 | 93 | NW | 4 | 1.8 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Rochester, New York | 28.75 | 730.2 | 29.36 | 745.7 | 25 | — 3.9 | 100 | W | 11 | 4.9 | ..... | ..... | 10n | ..... | Calm | 0.79 | 20.1 | Light snow | |

## UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roseburg, Oregon | 29.29 | 744.0 | 29.84 | 757.9 | 53.5 | 11.9 | 100 | N | 2 | 0.9 | ..... | ..... | 10n | ..... | ..... | 0.02 | 0.5 | Light rain | |
| Sacramento, California | 29.70 | 754.4 | 29.78 | 756.4 | 58 | 14.4 | 91 | N | 4 | 1.8 | ..... | 8k | 0 | SE | ..... | 0 | 0 | Cloudy | |
| St. Louis, Missouri | 29.34 | 745.2 | 29.92 | 760.0 | 44 | 6.7 | 68 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Marks, Florida | 29.91 | 759.7 | 29.92 | 760.0 | 62 | 16.7 | 88 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| St. Paul, Minnesota | 29.18 | 741.2 | 30.05 | 763.3 | 25 | — 3.9 | 50 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.62 | 650.7 | 29.95 | 760.7 | 48 | 8.9 | 49 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Antonio, Texas | 29.33 | 745.0 | 29.91 | 759.7 | 60 | 15.6 | 82 | Calm | 0 | 0 | ..... | 5c | 0 | NW | ..... | Inap. | Inap. | Fair | |
| San Diego, California | 29.95 | 760.7 | 30.02 | 762.5 | 57 | 13.9 | 87 | SW | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 28.96 | 735.6 | 29.64 | 752.8 | 30 | — 1.1 | 78 | N | 40 | 17.9 | ..... | ..... | 10s | ..... | N | 0.41 | 10.4 | Cloudy | |
| Sandy Hook, New Jersey | 29.24 | 742.7 | 29.26 | 743.2 | 49 | 9.4 | 78 | S | 7 | 3.1 | ..... | 8k | Haze | SW | ..... | 0 | 0 | Cloudy | |
| San Francisco, California | 29.79 | 756.7 | 29.85 | 758.2 | 55 | 12.8 | 87 | SW | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Santa Fé, New Mexico | 23.37 | 593.6 | 29.91 | 759.7 | 39 | 3.9 | 46 | NE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 29.78 | 755.1 | 29.82 | 757.4 | 62 | 16.7 | 77 | W | 10 | 4.5 | ..... | Haze | Haze | ..... | ..... | 0 | 0 | Hazy | |
| Shreveport, Louisiana | 29.74 | 755.4 | 29.96 | 761.0 | 61 | 16.1 | 71 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Smithville, North Carolina | 29.68 | 753.9 | 29.71 | 754.6 | 60 | 15.6 | 88 | SW | 14 | 6.3 | ..... | 8cs | Haze | W | Calm | 0 | 0 | Cloudy | |
| Springfield, Massachusetts | 29.02 | 737.1 | 29.14 | 740.1 | 48 | 8.9 | 78 | S | 5 | 2.2 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy. | |
| Stockton, Texas | 27.03 | 686.6 | 30.03 | 762.7 | 41 | 5.0 | 48 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.22 | 742.2 | 29.27 | 743.4 | 41 | 5.0 | 82 | SW | 12 | 5.4 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Smoky | |
| Toledo, Ohio, | 28.96 | 735.3 | 29.64 | 752.8 | 31 | — 0.6 | 69 | W | 13 | 5.8 | ..... | ..... | 10s | ..... | W | 0.11 | 2.8 | Cloudy | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 59 | 15.0 | 66 | SE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tybee Island, Georgia | 29.79 | 756.7 | 29.82 | 757.4 | 60 | 15.6 | 88 | W | 8 | 3.6 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.46 | 748.3 | ..... | ..... | 48 | 8.9 | 78 | SE | 8 | 3.6 | ..... | ..... | 10ks | ..... | SE | 0 | 0 | Cloudy | |
| Vicksburg, Mississippi | 29.70 | 754.4 | 29.96 | 761.0 | 61 | 16.1 | 66 | SW | 4 | 1.8 | ..... | 5c | Haze | Calm | Calm | 0 | 0 | Fair | |
| Virginia City, Montana | 24.24 | 615.7 | 29.72 | 754.9 | 44 | 6.7 | 46 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Visalia, California | 29.47 | 748.5 | 29.83 | 757.7 | 57 | 13.9 | 75 | E | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C. | 29.19 | 741.4 | 29.30 | 744.2 | 56 | 13.3 | 75 | SW | 14 | 6.3 | ..... | 5ck | 5ks;hz. | SW | SW | 0 | 0 | Cloudy | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 45 | 7.2 | 53 | SE | ..... | ..... | 1 | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 29.58 | 751.3 | 29.66 | 753.4 | 58 | 14.4 | 87 | SW | 12 | 5.4 | ..... | 0 | 5s | ..... | SW | 0 | 0 | Fair | |
| Winnemucca, Nevada | 25.51 | 647.9 | 29.87 | 758.7 | 47 | 8.3 | 70 | E | 7 | 3.1 | ..... | 10k | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Wood's Holl, Mass. | 29.25 | 742.9 | 29.30 | 744.2 | 47 | 8.3 | 85 | SW | 15 | 6.7 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Clear | |
| Yankton, Dakota | 28.89 | 733.8 | 30.25 | 768.3 | 29 | — 1.7 | 83 | N | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Yuma, Arizona | 29.76 | 755.6 | 29.92 | 760.0 | 55 | 12.8 | 62 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 30.40 | 772.1 | 30.45 | 773.4 | — 2.0 | —18.9 | 84 | NW | 10 | 4.5 | ..... | 3k | 6s | W | ..... | 0 | 0 | Cloudy | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 29.92 | 760.0 | 29.94 | 760.5 | 73 | 22.8 | 76 | NW | 6.0 | 2.7 | ..... | 8c | 4cs | SW | N | 0.07 | 1.8 | Fair | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.02 | 762.5 | 30.03 | 762.7 | 79 | 26.1 | 90 | Calm | 0 | 0 | ..... | 8c | 2s | Calm | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.86 | 758.4 | 29.94 | 760.5 | 81 | 27.2 | ..... | SE | 2 | 0.9 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | ..... | ..... | 29.98 | 761.5 | 85 | 29.4 | 68 | E | ..... | ..... | 3 | 3c | 5k | E | ..... | 0 | 0 | Fair | C. J. Hering. |
| Batavia, Dutch Guiana, S. A. | 30.07 | 763.7 | 30.08 | 763.9 | 86.0 | 30 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.256 | 6.50 | Cloudy | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.22 | 640.6 | ..... | ..... | 72.0 | 22.2 | 75 | Calm | ..... | ..... | 0 | 6cs | 3ks;s | ..... | ..... | 0 | 0 | ..... | Thomas Herran. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,286 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,775.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,560 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.8 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.56 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 m.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.79 | 756.7 | 55 | 12.8 | 54 | 12.2 | 93 | SW | 24 | 10.7 | .... | ..... | 10ks | ..... | S | 0 | 0 | ..... | ..... | Stormy..... | |
| Navy Yard, Pensacola, Fla. | 30.09 | 764.3 | 63 | 17.2 | 63 | 17.2 | 94 | NW | 3 | 1.3 | .... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Portsmouth, N.H. | 29.37 | 746.0 | 52 | 11.1 | 41 | 5.0 | ?? | ..... | ..... | ..... | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Naval Hospital, Yokohama, Japan | 29.88* | 758.9* | 62.5 | 16.9 | 55.2 | 12.9 | 74 | Calm | ..... | ..... | 0 | ..... | 8s | ..... | W | 0 | 0 | ..... | ..... | Cloudy..... | |
| Adams. Panama | 29.96 | 761.0 | 83 | 28.3 | 83 | 28.3 | 83 | W | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Alliance, Piraeus, Greece | 29.88‡ | 758.9‡ | ..... | ..... | 62 | 16.7 | 83 | S | ..... | ..... | 1-2 | ..... | 6 | ..... | S | ..... | ..... | ..... | ..... | Pleasant..... | |
| Ashuelot. Shanghai, China | 29.82* | 757.4* | 68 | 20.0 | 60 | 15.6 | 94 | SSE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Canonicus, New Orleans, La | 29.97 | 761.2 | 48 | 8.9 | 61 | 16.1 | 77 | SW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | Pleasant..... | |
| Colorado, New York, N. Y. | 29.24‡ | 742.7‡ | ..... | ..... | 50 | 10.0 | 72 | SSW | 10 | 4.5 | ..... | ..... | 8 | ..... | SW | 0 | 0 | ..... | ..... | Hazy..... | |
| Constitution, N. 49° 05′ W. 5° 50′ | 29.79‡ | 756.7‡ | ..... | ..... | 45 | 7.2 | 84 | N | ..... | ..... | 6 | ..... | 6 | ..... | N | ..... | ..... | Mod'ate | N | Fair ..... | |
| Despatch, Constantinople, Turkey. | 30.00 | 762.0 | 81 | 27.2 | 60 | 15.6 | 49 | SSW | ..... | ..... | 3 | ..... | 2 | ..... | SW | ..... | ..... | Smooth | ..... | Clear..... | |
| Enterprise, N. 30° 15′, W. 87° 10′ | 29.95‡ | 760.7‡ | ..... | ..... | 66 | 18.9 | 59 | NNW | ..... | ..... | 1 | ..... | 2 | ..... | Calm | ..... | ..... | Smooth | ..... | Fair..... | |
| Franklin, Norfolk, Va | 29.47‡ | 748.5‡ | ..... | ..... | 58 | 14.4 | 70 | S | 14.4 | 6.4 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | D. clouds..... | |
| Gettysburg Valetta, Malta | 29.85‡ | 758.2‡ | ..... | ..... | 68 | 20.0 | 100 | WSW | ..... | ..... | 1 | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Cloudy..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.12 | 765.0 | 73 | 22.8 | 72 | 22.2 | 71 | NNE | ..... | ..... | 2 | ..... | 2 | ..... | NE | ..... | ..... | ..... | ..... | Clear ..... | |
| Marion, Smyrna, Turkey | 29.94 | 760.5 | 58 | 14.4 | 56 | 13.3 | 75 | S | ..... | ..... | 2 | ..... | 10 | ..... | SW | Light | Light | Smooth | S | Cloudy..... | |
| Michigan, Erie, Pa | 29.02 | 737.1 | 70 | 21.1 | 27 | — 2.8 | 76 | NNE | ..... | ..... | 4 | ..... | 10 | ..... | NNE | ..... | ..... | ..... | ..... | Snowing..... | |
| Monongahela. Hong-Kong, China | 30.06* | 763.5* | 68 | 20.0 | 68 | 20.0 | 95 | WNW | ..... | ..... | 0-1 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | D. clouds..... | |
| New Hampshire, Port Royal, S. C | 30.00 | 762.0 | 63 | 17.2 | 61 | 16.1 | 82 | W | 7 | 3.1 | ..... | ..... | 8 | ..... | W | 0 | 0 | ..... | ..... | Cloudy..... | |
| Omaha, N. 13° 00′, W. 50° 52′ | 30.14* | 765.5* | 83 | 28.3 | 83 | 28.3 | 69 | ENE | 3 | 1.3 | ..... | ..... | 2 | ..... | ENE | 0 | 0 | Mod'ate | NE | ..... ..... | |
| Onward, Callao, Peru | 30.00† | 762.0† | ..... | ..... | 73 | 22.8 | 90 | ESE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, N. 28° 08′, W. 96° 23′ | 30.00‡ | 762.0‡ | ..... | ..... | 73 | 22.8 | 95 | W | ..... | ..... | 2 | ..... | 10 | ..... | ENE | ..... | ..... | Cross | ..... | Cloudy..... | |
| Palos, Shanghai, China | 29.83* | 757.7* | 64 | 17.8 | 58 | 14.4 | 94 | SSE | ..... | ..... | 0-1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Pensacola, Honolulu, H. I. | 30.33 | 770.4 | 71 | 21.7 | 68 | 20.0 | 95 | Calm | 0 | 0 | ..... | ..... | 2 | ..... | E | 0 | 0 | ..... | ..... | Clear..... | |
| Plymouth, Norfolk, Va | 29.60‡ | 751.8‡ | ..... | ..... | 58 | 14.4 | 76 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | |
| Powhatan, Port Royal, S. C | 29.88‡ | 758.9‡ | ..... | ..... | 65 | 18.3 | 73 | WSW | 9.0 | 4.0 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | Smooth | ..... | Misty..... | |
| Ranger. Amoy, China | 30.06* | 763.5* | ..... | ..... | 66 | 18.9 | 89 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Blue sky..... | |
| Rio Bravo, Brownsville, Texas | ..... | ..... | ..... | ..... | 64 | 17.8 | 94 | E | ..... | ..... | 1 | ..... | 8 | ..... | E | ..... | ..... | ..... | ..... | Cloudy..... | |
| Santee, Annapolis, Md | 29.36* | 745.7* | 62 | 16.7 | 57 | 13.9 | 69 | NW | ..... | ..... | 4 | ..... | 10 | ..... | E | 0 | 0 | ..... | ..... | Hazy..... | |
| Saratoga, Washington, D. C | 29.36* | 745.7* | ..... | ..... | 60 | 15.6 | 100 | NNW | ..... | ..... | 4 | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Overcast..... | |
| St. Louis, League Island, Pa | 29.26 | 743.2 | 62 | 16.7 | 51 | 10.6 | 79 | SW | 8 | 3.6 | ..... | ..... | 2 | ..... | SW | 0 | 0 | ..... | ..... | Fair ..... | |
| Supply, Havre, France | 29.69 | 754.1 | 46 | 7.8 | 40 | 4.4 | 91 | N | ..... | ..... | 2 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Raining..... | |
| Swatara, Cartagena, New Grenada | 29.97* | 761.2* | ..... | ..... | 84 | 28.9 | 83 | N | ..... | ..... | 2 | ..... | 10 | ..... | N&E | ..... | ..... | ..... | ..... | Hazy..... | |
| Tennessee, N. 6° 13′, E. 83° 51′ | 29.94* | 760.5* | 86 | 30.0 | 85 | 29.4 | 79 | ENE | 3 | 1.3 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | Mod'ate | NE | D. clouds..... | |
| Trenton, Piraeus, Greece | 29.89‡ | 759.2‡ | ..... | ..... | 65 | 18.3 | 73 | SW | ..... | ..... | 2-4 | ..... | 2 | ..... | SW | 0 | 0 | Smooth | ..... | Threatening | |
| Tuscarora, N. 24° 15, 31″ W. 110° 20′ 47″ | 30.02 | 762.5 | 66 | 18.9 | 65 | 18.3 | 78 | SSE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |
| Vandalia, Naples, Italy | 29.57‡ | 751.1‡ | ..... | ..... | 58 | 14.4 | 70 | W | ..... | ..... | 2 | ..... | 5 | ..... | WSW | ..... | ..... | ..... | ..... | Fair ..... | |
| Wabash, Boston, Mass | 29.31‡ | 744.5‡ | ..... | ..... | 46 | 7.8 | 84 | SW | 10 | 4.5 | ..... | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Cloudy..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | TRUE COURSE TOWARD— | HOURLY RATE IN KNOTS. | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | SEA-SWELL. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | CHARACTER. | DIRECTION FROM— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Panama, Port Townsend, W. T. | | | 29.88* | 758.9* | | | | Calm | | | 0 | | 2 | | Calm | | | Fine | Capt. Seabury. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, Hong-Kong, China | | | | | 68 | 20.0 | | ESE | | | 1 | | 10 | | | | | Overcast | Capt. Maury. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Corrected for temperature and elevation; instrumental error not known.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, N. 40° 40.' W. 66° 48' | | | 29.50† | 749.3† | 42 | 5.6 | 91 | SSW | | | 4 | | 0 | | | Mod'ate | SW | Foggy | Capt. W. H. Thompson |
| S. S. Celtic, New York, N. Y. | | | 29.20† | 741.7† | 56 | 13.3 | | NW | | | 4 | | 10 | W | | | | D clouds | Capt. B. Gleadell. |
| S. S. Germanic, N. 40° 43', W. 23° 42' | | | 30.19† | 766.8† | 55 | 12.8 | 93 | Var. | | | 4 | | | | SW | None | | D. clouds | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Aneroid.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, N. 39° 18', E. 154° 24' | | | 30.06* | 763.5* | | | | NW | | | 5 | | Heavy | | NW | Mod'ate | NW | D. clouds | Capt. John Metcalf. |
| S. S. Gaelic, N. 29° 50', E. 128° 31' | | | 29.75† | 755.6† | 66 | 18.9 | ?? | SW | | | 6 | | k | | SW | High | SW | Raining | Capt. W. H. Kidley |
| S. S. Oceanic, N. 37° 53', W. 148° 00' | | | 30.04 | 763.0 | 52 | 11.1 | 86 | SW | | | 3 | | 1 | | W | | | D. clouds | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | Character | Direction From— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, N. 51° 09′ 23″, W. 10° 21′ 30″ | | | 30.19† | 766.8† | 47 | 8.3 | 92 | NNW | | | 4 | | 6 | | N | Light | NE | Partly cl'dy | Captain Sargent. |
| S. S. Ohio, N. 38° 58′, W. 74° 00′ | | | 29.33 | 745.0 | 50 | 10.0 | 89 | SSW | | | 5 | | 5 | | SW | Small | SSW | Dense haze. | Captain Morrison. Captain Harris. |
| S. S. Pennsylvania | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. †Aneroid; unreliable, corrected for elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
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**ALLAN LINE MARINE SERIES.**

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Scandinavian | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.)**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Crisfield, Md. | | | 29.38 | 746.2 | 58 | 14.4 | 70 | SSW | 20 | 8.9 | | | Sm'e | | | | | Smoky | Capt. James Jorgensen |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 30.10 | 764.5 | 18 | — 7.8 | 89 | Calm | 0 | 0 | | 0 | 7s | | ESE | | | Clearing | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg'd.) Chief Signal Officer. U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 25, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

## ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.11 | 764.8 | 62.1 | 16.7 | ..... | NE | ..... | ..... | 6 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Dr. Ollive. |
| Nemours | ..... | ..... | 30.10 | 764.6 | 66.2 | 19.0 | 63 | WNW | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Michel. |
| Algiers | ..... | ..... | 30.01 | 762.3 | 61.2 | 16.2 | 85 | W | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0.370 | 9.4 | Cloudy | Towillere. |
| La Calle | ..... | ..... | 29.95 | 760.7 | 60.1 | 15.6 | 66 | NW | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0.276 | 7.0 | Fair | Boulangeot. |
| Tunis | ..... | ..... | 29.87 | 758.8 | 62.6 | 17.0 | 67 | W | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0.157 | 4.0 | Cloudy | Jacques. |
| Sfax | ..... | ..... | 29.96 | 761.0 | 64.4 | 18.0 | ..... | E | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 0.236 | 6.0 | Very cloudy | Gau. |
| Saida | ..... | ..... | 30.10 | 764.5 | 61.5 | 16.4 | 83 | WNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Herbin. |
| Tebessa | ..... | ..... | 29.96 | 761.0 | ..... | ..... | ..... | N | ..... | ..... | 1 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Bourgeois. |
| Geriville | ..... | ..... | 30.11 | 764.9 | 56.1 | 13.4 | 86 | NW | ..... | ..... | 8 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Lemaillot. |
| Laghouat | ..... | ..... | 30.11 | 764.9 | 61.5 | 16.4 | 83 | NW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Guyot. |
| Biskra | ..... | ..... | 30.02 | 762.6 | 76.1 | 24.5 | 67 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 899 ? meters, or 2,949.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

## AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.03 | 737.3 | 29.58 | 751.4 | 43.7 | 6.5 | 63 | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.110 | 2.8 | Rain & snow | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 28.83 | 732.3 | 29.61 | 752.2 | 37.8 | 3.2 | 90 | W | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0.059 | 1.5 | ..... | Dr. Wierzbiski. |
| Eperies | 28.64 | 727.5 | 29.54 | 750.4 | 34.7 | 1.5 | 82 | N | ..... | ..... | 2 | ..... | 88 | ..... | S | 0.260 | 6.60 | ..... | Julius Mikolik. |
| Gratz | 28.32 | 719.3 | 29.59 | 751.5 | 40.1 | 4.5 | 66 | SE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.09 | 713.4 | 29.52 | 749.7 | 44.1 | 6.7 | 61 | WNW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0.035 | 0.90 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.21 | 716.4 | 29.58 | 751.2 | 37.0 | 2.8 | 62 | SE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0.039 | 1.0 | ..... | Prof. C. Wagner |
| Lemberg | 28.47 | 723.0 | 29.48 | 748.8 | 34.3 | 1.3 | 75 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.067 | 1.7 | ..... | Dr. T. Stanecki. |
| Pola | 29.44 | 747.7 | 29.55 | 750.6 | 40.5 | 4.7 | 82 | E | ..... | ..... | 6 | ..... | 108 | ..... | ..... | 0.122 | 3.1 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.11 | 739.5 | 29.59 | 751.6 | 38.3 | 3.5 | 95 | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.406 | 10.3 | Rain & Snow | Johann Tamas, S. J. |
| Szegedin | 29.31 | 744.4 | 29.59 | 751.6 | 40.3 | 4.6 | 86 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Karl Stancel. |
| Trieste | 29.48 | 748.9 | 29.59 | 751.5 | 44.8 | 7.1 | 84 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.138 | 3.5 | Rainy | P. Busin. |
| Vienna | 28.86 | 733.1 | 29.59 | 751.5 | 43.9 | 6.6 | 40 | NW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 348.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,255.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:16 p. m., local time.

## BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.02 | 711.8 | 29.58 | 751.2 | 30.7 | —0.7 | 79 | WSW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0.126 | 3.2 | ..... | Prof. M. Passau. |
| Brussels | 29.34 | 745.3 | 29.55 | 750.5 | 37.6 | 3.1 | 73 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | NNE | 0.280 | 7.1 | ..... | Royal Observatory. |
| Furnes | 29.62 | 752.3 | 29.64 | 752.9 | 41.5 | 5.3 | 68 | WNW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 0.039 | 1.0 | ..... | M. E. de Cae. |
| Maeseyck | 29.41 | 747.0 | 29.54 | 750.2 | 33.1 | 0.6 | 100 | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.106 | 2.7 | Snowing | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 ? feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m., Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E. Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum't'al error and temperature. Inches. | Barometer. Corrected for instrum't'al error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Force 1—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.75 | 755.6 | 29.86 | 758.4 | 34.0 | 1.1 | ..... | WNW | 21 | 9.4 | ..... | ..... | 6 | ..... | ..... | 0.180 | 4.57 | Snowing..... | W. Boswell. |
| Ardrossan | 29.91 | 759.7 | 29.92 | 760.0 | 42 | 5.6 | ..... | NNW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.03 | 762.7 | 42.9 | 6.1 | ..... | NNW | 14 | 6.3 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | S. Call, for Dr. Robinson. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.90 | 759.4 | 41.0 | 5.0 | ..... | NW | 18 | 8.0 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 30.07 | 763.8 | 44.4 | 6 9 | ..... | NW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds... | J. Dreyer. |
| Bradford, Yorkshire | 29.40 | 746.7 | 29.79 | 756.7 | 40.5 | 4.7 | ..... | N | ..... | ..... | 5 | ..... | 8 | ..... | ..... | 0.01 | 0.3 | D. clouds.... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.96 | 761.0 | 30.00 | 762.0 | 84.5 | 29.2 | ..... | NE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.77 | 756.1 | 43.0 | 6.1 | ..... | NNW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | Hail & snow | H. Todd. [H. O. |
| Cardington | ..... | ..... | 29.79 | 756.7 | 42.0 | 5.6 | ..... | N | ..... | ..... | 3 | ..... | ..... | ..... | ..... | Blank | Blank | D. clouds.... | John McLaren. |
| Chatham, School M. E | 29.60 | 751.8 | 29.74 | 755.4 | 39.7 | 4.3 | ..... | N | ..... | ..... | 3 | ..... | 9 | ..... | ..... | Blank | Blank | Overcast..... | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.19 | 716.0 | 29.68 | 753.9 | 37.0 | 2.8 | ..... | N | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | Snowing..... | Alexander Watt. |
| Donaghadee | 29.94 | 760.5 | 29.97 | 761.2 | 45 | 7.2 | ..... | N | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | J. Mac Gowan. |
| Dover | 29.68 | 753.9 | 29.79 | 754.4 | 39 | 3.9 | ..... | N | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | Squally..... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.86 | 758.4 | 43.8 | 6 6 | ..... | N | 3.2 | 1.4 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | Thomas Mackereth. |
| Falmouth, Observatory | 29.75 | 755.6 | 29.99 | 761.7 | 42.3 | 5.7 | ..... | NNW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | Squally..... | The Staff. |
| Fort Napier, (Natal) | 27.89 | 708.4 | 30.11 | 764.8 | 77.0 | 25.0 | ..... | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.68 | 753.9 | 29.91 | 759.7 | 89 | 31.7 | ..... | W | ..... | ..... | 0 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | |
| Galway, Queen's College | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.00 | 762.0 | 30.06 | 763.5 | 62.0 | 16 7 | ..... | W | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds.... | Corpl. C. Aitken, A. H. C. |
| Glasgow, Observatory | 29.72 | 754.9 | 29.92 | 760.0 | 41.1 | 5.1 | ..... | NNE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | Blue sky..... | D. G. Maclean. |
| Great Yarmouth | 29.68 | 753.9 | 29.69 | 754.1 | 42 | 5.6 | ..... | NW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.58 | 751.3 | 29.76 | 755.9 | 41.9 | 5.5 | ..... | N | ..... | ..... | 5 | ..... | 8 | ..... | ..... | Blank | Blank | D. clouds... | The Staff, for G. B. Airy. |
| Guernsey | 29.66 | 753.4 | 29.87 | 758.7 | 41.5 | 5.3 | ..... | NNW | ..... | ..... | 6 | ..... | 6 | ..... | ..... | Blank | Blank | D. clouds.... | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 30.00 | 762.0 | 46 | 7.8 | ..... | N | ..... | ..... | 6 | ..... | 4c | ..... | ..... | 0.06 | 1.5 | Fine..... | M. P. Moyle. |
| Holyhead | 29.90 | 759.4 | 29.96 | 761.0 | 42 | 5.6 | ..... | WNW | ..... | ..... | 5 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | John Tilston. |
| Jersey | 29.58 | 751.3 | 29.88 | 758.9 | 41.5 | 5.3 | ..... | N | ..... | ..... | 7 | ..... | 7 | ..... | ..... | Blank | Blank | D. clouds.... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 29.78 | 756.4 | 42.3 | 5.7 | ..... | N | 22 | 9.8 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff. |
| Kingstown | 29.97 | 761.2 | 30.00 | 762.0 | 42 | 5.6 | ..... | NNW | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.81 | 757.2 | 42.0 | 5.6 | ..... | N | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.71 | 754.6 | 29.79 | 756.7 | 61.6 | 16.4 | ..... | NW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | Sgt. Fred. Travis, A. H. |
| Nairn | 29.81 | 757.2 | 29.91 | 759.7 | 39 | 3.9 | ..... | NW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | ¼ clouded... | W. D. Penny. [O. |
| Nassau, (Bahamas) | ..... | ..... | 29.94 | 760.5 | 72.8 | 22.7 | ..... | NW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | C. S. Duncombe. |
| Nottingham, Observatory | 29.64 | 752.8 | 29.83 | 757.7 | 43.5 | 6.4 | ..... | N | ..... | ..... | 6 | ..... | 3k;ks;d | ..... | N | 0.001 | 0.03 | Snowing..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.30 | 744.2 | 29.84 | 757.9 | 40.8 | 4.9 | ..... | NNW | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | Light snow.. | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.81 | 757.2 | 42 | 5.6 | ..... | NNW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Threatening | Mr. Lucas. |
| Plymouth | 29.84 | 757.9 | 29.92 | 760.0 | 45.8 | 7.7 | ..... | NW | ..... | ..... | 5 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | John Merrifield. |
| Roche's Point | 30.03 | 762 7 | 30.08 | 764.0 | 44 | 6.7 | ..... | N | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | Fine..... | W. Kennedy. |
| Saint Ann's Head | 29.80 | 756.9 | 30.00 | 762.0 | 42 | 5.6 | ..... | NW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | Showery..... | John C. Walker. |
| Sandwick Manse, (Orkneys.) | ..... | ..... | 29.88 | 758.9 | 33.8 | 1.0 | ..... | NNE | 14 | 6.3 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Snow-show's | Rev. C. Clouston, L.L. D. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 29.76 | 755.9 | 56.4 | 13.6 | ..... | SW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | Blank | Blank | D. clouds.... | Sergt. W. H. Lyne. |
| Sheffield | 29.42 | 747.3 | 29.71 | 754.6 | 42.2 | 5.7 | ..... | N | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | D. clouds.... | W. F. Cooper. |
| Silloth Rectory | 29.87 | 758 7 | 29.90 | 759.4 | 45.0 | 7.2 | 52 | N | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | D. clouds.... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.49 | 749.0 | 29.89 | 759.2 | 39.2 | 4.0 | ..... | N | ..... | ..... | 3 | ..... | 8 | ..... | ..... | Blank | Blank | D. clouds.... | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 29.93 | 760.2 | 37 | 2.8 | ..... | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Clear..... | John Sutherland. |
| Stratfield Turgiss | 29.56 | 750.8 | 29.78 | 756.4 | 43.2 | 6.2 | ..... | N | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. C. H. Griffith, F.M. |
| Thurso | ..... | ..... | 29.87 | 758.7 | 36 | 2.2 | ..... | N | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 30.02 | 762.5 | 48 | 8.9 | ..... | N | ..... | ..... | 7 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 30.14 | 765.5 | 44.7 | 7.1 | ..... | NNW | 13 | 5.8 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.94 | 760.5 | 70.0 | 21.1 | 78 | NW | ..... | ..... | 2 | ..... | 4k | ..... | ..... | 0 | 0 | ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.78 | 756.4 | 29.97 | 761.2 | 82.0 | 27.8 | 74 | E | 12.5 | 5.6 | ..... | 2 | 4 | ..... | ENE | 0.19 | 4.8 | Cloudy; fine | C. Meldrum. |
| Melbourne, Observatory | 29.91 | 759.7 | 30.00 | 762.0 | 71.4 | 21.9 | 68 | N | 15 | 6.7 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | Boisterous... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1, 400 feet, or 426.7 meters; Fort Napier, 2,200 ft, or 670.6 m.

| Marine Series. Vessels. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather | Observer. |
|---|---|---|---|---|
| S. S. Algeria | ..... | ..... | ..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | Capt. C. C. Prehn. |
| S. S. Peruvian, N. 51° 30′, W. 30° 30′ | 4 | S | Misty..... | [R. Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire, Off Lewis Breakwater Del | 4 | WNW | D. clouds..... | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—1. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.23 | 666.2 | ..... | ..... | 69.4 | 20.8 | 91 | SE | ..... | ..... | 1 | ..... | 3cs | ..... | ..... | 0 | 0 | ..... | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.52 | 749.9 | 29.57 | 751.1 | 40.1 | 4.5 | 66 | SW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | ..... | ..... |
| Fanöe | 29.52 | 749.8 | 29.54 | 750.3 | 35.4 | 1.9 | 88 | Calm | ..... | ..... | 0 | ..... | 9 | ..... | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.86 | 758.5 | 29.91 | 759.6 | 34.7 | 1.5 | 85 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | 29.94 | 760.5 | 29.98 | 761.6 | 35.8 | 2.1 | 96 | E | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Faröe) | 29.98 | 761.6 | 30.02 | 762.5 | 32.5 | 0.3 | 85 | NE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 29.37 | 746.0 | 29.54 | 750.3 | 37.8 | 3.2 | 87 | WNW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.28 | 743.7 | 29.83 | 757.7 | 42.8 | 6 | 76 | NW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0.260 | 6.6 | Cloudy | Collignon, Director. |
| Amiens, Normal School | 29.50 | 749.3 | 29.61 | 752.1 | 41.4 | 5.2 | 69 | W | ..... | ..... | 1 | ..... | 5 | ..... | NW | 0 | 0 | Cloudy | Bonvarne, Director. |
| Avignon, Normal School | 29.67 | 753.5 | 29.74 | 755.5 | 48.9 | 9.4 | 34 | N | ..... | ..... | 2 | ..... | 5 | ..... | NW | 0 | 0 | Cloudy | Mr. Giraud, Director |
| Bar-sur-Seine | 29.00 | 736.5 | 29.57 | 751.0 | 36.3 | 2.4 | 79 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.551 | 14.0 | Covered | C. Saillard. |
| Beaumette Obs'y (Angers) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Albert Cheux. |
| Beauvais | ..... | ..... | ..... | ..... | 35.8 | 2.1 | 64 | N | ..... | ..... | 3 | ..... | 8 | ..... | N | 0.28 | 7. | Very cloudy | Normal School. |
| Besançon | 28.74 | 729.9 | 29.05 | 753.1 | 36.5 | 2.5 | 91 | SSW | ..... | ..... | 3 | ..... | 8 | ..... | W | 0.16 | 4. | Very cloudy | Normal School. |
| Bourg-en-Bresse | 28.78 | 730.9 | 29.07 | 753.6 | 36.1 | 2.3 | 89 | S | ..... | ..... | 6 | ..... | 5n | ..... | S | 0.110 | 2.8 | Snowy | Normal School. |
| Bourges, Normal School | 29.11 | 739.3 | 29.08 | 753.8 | 35.6 | 2 | 93 | SW | ..... | ..... | 2 | ..... | 5 | ..... | SW | 0 | 0 | Partly cov'd | A. Wagner, Director. |
| Brest, Naval Observatory | 29.67 | 753.7 | 29.89 | 759.3 | 48.0 | 8.9 | 46 | N | ..... | ..... | 5 | ..... | 5 | ..... | N | 0.108 | 2.75 | Stormy | The Staff. |
| Carcassonne, Normal School | 29.41 | 746.9 | 29.83 | 757.6 | 42.4 | 5.8 | 88 | W | ..... | ..... | 2 | ..... | 5 | ..... | W | 0 | 0 | Cloudy | Vateau, Director. |
| Caen | 29.69 | 754.0 | 29.76 | 755.9 | 41.4 | 5.2 | 70 | NNW | ..... | ..... | 4 | ..... | 8 | ..... | N | 0.134 | 3.4 | Very cloudy | Normal School. |
| Chartres, Normal School | 29.07 | 738.4 | 29.65 | 753.2 | 35.2 | 1.8 | 93 | N | ..... | ..... | 2 | ..... | 6 | ..... | N | 0 | 0 | ..... | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.26 | 743.1 | 29.59 | 751.5 | 38.1 | 3.4 | 90 | NW | ..... | ..... | 3 | ..... | 5k | ..... | NW | 0.161 | 4.1 | Cloudy | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.28 | 718.4 | 29.67 | 753.6 | 37.4 | 3.0 | 72 | W | ..... | ..... | 6 | ..... | 10 | ..... | NW | 0.039 | 1.0 | Heavy showers. | Alluard, Director. |
| Commercy, Normal School | 28.69 | 728.8 | 29.61 | 752.0 | 42.4 | 0.8 | 79 | WSW | ..... | ..... | 2 | ..... | 5 | ..... | W | 0 | 0 | Cloudy | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.60 | 726.3 | 29.74 | 755.3 | 41.0 | 5.0 | 54 | NW | ..... | ..... | 4 | ..... | 5 | ..... | NW | 0 | 0 | ½ covered | M. Kina. |
| Grenoble | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| La Roche-sur-Yon, N. School | 29.61 | 752.0 | 29.83 | 757.6 | 40.6 | 4.8 | 66 | NW | ..... | ..... | 8 | ..... | 5 | ..... | NW | 0.102 | 2.6 | Cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.45 | 747.9 | 29.76 | 755.9 | 39.0 | 3.9 | 67 | N | ..... | ..... | 6 | ..... | 8 | ..... | N | 0.20 | 5. | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.66 | 728.0 | 29.59 | 751.5 | 36.0 | 2.2 | 83 | S | ..... | ..... | 6 | ..... | 10 | ..... | S | 0.031 | 0.80 | Covered | Voudez, Director. |
| Lorient, Naval Observatory | 29.83 | 757.6 | 29.93 | 760.1 | 46.4 | 8.0 | 57 | NNW | ..... | ..... | 5 | ..... | 2 | ..... | NNW | 0.031 | 0.80 | ¼ covered | T. Carré, Director. |
| Mâcon, Normal School | 28.96 | 735.5 | 29.66 | 753.4 | 39.0 | 3.9 | 76 | NW | ..... | ..... | 4 | ..... | 5 | ..... | N | 0.020 | 0.5 | Cloudy | M. Marchal, Director. |
| Metz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. A. Schuster, Dir. |
| Mirecourt | 28.52 | 724.3 | 29.59 | 751.6 | 35.2 | 1.8 | 56 | SW | ..... | ..... | 2 | ..... | 10 | ..... | NE | 0 | 0 | Covered | Normal School. |
| Nismes, Normal School | 29.52 | 749.9 | 29.73 | 755.1 | 52.2 | 11.2 | 65 | NW | ..... | ..... | 4 | ..... | 2 | ..... | NW | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Orleans, Normal School | 29.26 | 743.1 | 29.64 | 752.8 | 36.3 | 2.4 | 86 | NW | ..... | ..... | ..... | ..... | 10 | ..... | NW | 0 | 0 | Covered | Bernard, Director. |
| Paris, Observatory | 29.38 | 746.2 | 29.62 | 752.4 | 36.0 | 2.2 | 60 | NW | ..... | ..... | 2 | ..... | 8 | ..... | NW | 0.026 | 0.66 | Very cloudy | National Observatory. |
| Privas | 28.68 | 728.4 | 29.75 | 755.7 | 47.3 | 8.5 | 29 | N | ..... | ..... | 2 | ..... | 5 | ..... | N | 0 | 0 | Cloudy | Normal School |
| Puy de Dome (Summit) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.82 | 757.5 | 29.85 | 758.3 | 51.1 | 10.6 | 63 | NW | ..... | ..... | 5 | ..... | 5 | ..... | NW | 0.08 | 2. | ⅛ Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.71 | 754.5 | 29.79 | 756.7 | 35.6 | 2.0 | 85 | NNW | ..... | ..... | 6 | ..... | 5 | ..... | NW | 0.197 | 5.0 | Cloudy | F. Lucard, Director. |
| Saint Malo (Port) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. H. Hercouet. |
| Tarbes, Normal School | 28.84 | 732.6 | 29.95 | 760.8 | 41.0 | 5 | 84 | WSW | ..... | ..... | 6 | ..... | 5 | ..... | W | 0.24 | 6. | Cloudy | T. Hugues, Director. |
| Villefranche | 28.92 | 734.5 | 29.65 | 753.0 | 39.6 | 4.2 | 87 | W | ..... | ..... | 1 | ..... | 8 | ..... | S | 0.094 | 2.4 | Very cloudy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.82 | 757.3 | 29.84 | 758.0 | 79.2 | 26.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Lyons | ..... | ..... | 29.72 | 754.8 | 42.3 | 5.7 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchési. |
| Marseilles, Observatory | ..... | ..... | 29.71 | 754.6 | 46.2 | 7.9 | 33 | NW | ..... | ..... | 3–4 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | M. Jeys. |
| Mont-Louis | 24.56 | 623.9 | 29.88 | 758.9 | 30.2 | 1.0 | 39 | WSW | 18.6 | 8.33 | ..... | ..... | 1 | ..... | W | 0.071 | 1.80 | ..... | The Staff. |
| Nice | 29.40 | 746.8 | 29.48 | 748.8 | 53.6 | 12.0 | 33 | NW | ..... | ..... | 3 | ..... | 1 | ..... | NW | 0.035 | 0.9 | ..... | Mr. Falguère. |
| Paris, Montsouris Obs'y | 29.34 | 745.1 | 29.61 | 752.1 | 36.3 | 2.4 | 65 | N | ..... | ..... | 4 | ..... | 5 | ..... | N | 0 | 0 | Clear | Dr. A. Niepce. |
| Perpignan | ..... | ..... | 30.21 | 767.4 | 47.8 | 8.8 | 46 | NW | 29.8 | 13.33 | ..... | ..... | 3 | ..... | NW | 0.051 | 1.3 | ..... | Marié Davy, Director. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.122 | 3.1 | ..... | Dr. Fines. |
| Pic du Midi, (Plantade,) H. P. | 22.13 | 562.2 | ..... | ..... | 14.0 | —10.0 | ..... | NW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Saint Maur, (near Paris) | 29.46 | 748.3 | 29.63 | 752.5 | 37.0 | 2.8 | 69 | N | ..... | ..... | 3 | ..... | 4 | ..... | W | 2.839 | 72.1 | Snowy | Gen'l de Nansouty |
| Toulouse, Observatory | 29.19 | 741.4 | 29.91 | 759.7 | 34.5 | 1.4 | 96 | WNW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.059 | 1.5 | Snowy | E. Renou. |
| Tours | 29.54 | 750.4 | 29.74 | 755.4 | 41.2 | 5.1 | 63 | WNW | ..... | ..... | 7 | ..... | 7 | ..... | WNW | 0.126 | 3.20 | Rain & snow | The Staff. |
| Versailles, (near Paris) | ..... | ..... | 29.62 | 752.4 | 40.3 | 4.6 | 49 | N | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 0.346 | 8.8 | ..... | C. Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 29.94 | 760.5 | 29.97 | 761.1 | 66.0 | 18.9 | 91 | NW | 15.6 | 7.0 | ..... | ..... | 10 | ..... | ..... | 0.055 | 1.39 | Cloudy | Dr. A. Bérigny. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Dusty | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 338 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,360 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | S | | | 1 | | 7 | | | 0.004 | 0.10 | Snowing | Prof. Dr. Hoh. |
| Berlin | 29.42 | 747.3 | 29.60 | 751.8 | 42.4 | 5.8 | 55 | E | | | 2 | | 4 | | | | | Snowy | Prof. Arndt. |
| Breslau | 29.08 | 738.6 | 29.60 | 751.9 | 38.5 | 3.6 | 64 | NW | | | 1 | | 5 | NW | | 0.161 | 4.1 | Snowing | Royal University Obs'y. |
| Carlsruhe | 29.14 | 740.2 | 29.58 | 751.2 | 35.2 | 1.8 | 86 | SE | | | 2 | | 10 | SW | | 0.084 | 2.14 | | Albert Senz. |
| Cassel | 28.95 | 735.4 | 29.55 | 750.5 | 38.8 | 3.8 | 83 | SE | | | 2 | | 9 | | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.35 | 745.6 | 29.51 | 749.6 | 39.2 | 4.0 | 66 | W | | | 0 | | 9 | | | 0 | 0 | | Director Lose. |
| Emden | 29.61 | 752.1 | 29.65 | 753.0 | 42.3 | 5.7 | 66 | SW | | | 2 | | 8 | | | 0.043 | 1.1 | | Prof. Prestel. |
| Frankfort on the Main | 29.24 | 742.8 | 29.62 | 752.3 | 38.8 | 3.8 | 58 | SW | | | 6 | | 9 | WSW | | 0.260 | 6.6 | | Physical Society. |
| Friedrichshafen | 28.17 | 715.6 | 29.64 | 752.8 | 37.8 | 3.2 | 60 | SE | | | 2 | | 6k | | | 0.008 | 0.2 | Fair | M. Wilhelm. |
| Hamburg | 29.51 | 749.6 | 29.58 | 751.4 | 39.4 | 4.1 | 66 | S | | | 2 | | 5 | | | 0 | 0 | | Captain F. Hegemann. |
| Kiel | 29.56 | 750.7 | 29.57 | 751.1 | 41.7 | 5.4 | 47 | NW | | | | | | | | 0.001 | 0.03 | Fair | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.55 | 750.6 | 29.63 | 752.6 | 38.1 | 3.4 | 46 | NE | | | 2 | | 1 | | | 0.114 | 2.9 | | Prof. E. Luther. |
| Köslin | | | 29.58 | 751.4 | 40.3 | 4.6 | | S | | | 2 | | 6 | SW | | 0.028 | 0.7 | | H. Müller. |
| Leipsic, Observatory | 29.16 | 740.7 | 29.59 | 751.5 | 41.7 | 5.4 | 50 | NW | | | 3 | | 1k | | | | | | Prof. Dr. Bruhns. |
| Memel, Naval School | 29.58 | 751.4 | 29.63 | 752.6 | 34.3 | 1.3 | 72 | ENE | | | 1 | | 3 | | | 0 | 0 | | Reinbrecht von Skalweit. |
| Neufahrwasser | 29.63 | 752.5 | 29.64 | 752.9 | 36.3 | 2.4 | 72 | E | | | 3–4 | | 8 | | | 0 | 0 | Cloudy | A. Lothes. |
| Posen | 29.34 | 745.2 | 29.64 | 752.8 | 39.6 | 4.2 | 45 | WSW | | | 3 | | 10 | W | | 0.002 | 0.06 | | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.03 | 737.4 | 29.50 | 751.6 | 42.1 | 5.6 | 51 | W | | | 1 | | 10 | | | 0.220 | 5.6 | Snowing | Dr. Schur. |
| Stuttgart | 28.59 | 726.2 | 29.55 | 750.5 | 37.4 | 3.0 | 54 | S | | | 5 | | 7 | | | 0.133 | 3.38 | Foggy | Prof. Schoder. |
| Treves, (Trier) | 28.95 | 735.4 | 29.47 | 748.5 | 38.5 | 3.6 | 66 | W | 4 | 2 | | | 7ck | | W | 0 | 0 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.07 | 713.0 | 29.62 | 752.3 | 34.0 | 1.1 | 79 | ESE | | | 1 | | 5 | | | 0 | 0 | Fair | Dr. Von Bebber. |
| Wustrow, Naval School | 29.56 | 750.8 | 29.60 | 751.8 | 43.0 | 6.1 | 48 | | | | | | | | | | | | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 451 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.48 | 748.7 | 29.87 | 758.6 | 61.0 | 16.1 | | S | | | 0.5 | | | | | | | ⅛ clear | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.86 | 758.3 | 29.91 | 759.6 | 78.7 | 25.9 | 80 | WSW | 29.0? | 13.0? | | | 10 | | | 0 | 0 | Overcast | |
| Deesa | 29.43 | 747.6 | 29.90 | 759.4 | 94.5 | 34.7 | 26 | Calm | | | | | 5 | NW | | 0 | 0 | D. clouds | |
| Bombay | 29.85 | 758.1 | 29.88 | 759.0 | 85.8 | 29.9 | 61 | NW | 14.0 | 6.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.85 | 707.4 | 29.80 | 756.9 | 93.5 | 34.2 | 44 | WSW | | | | | 9 | S | W | 0 | 0 | Dust-whirl | |
| Lahore | 29.07 | 738.4 | 29.81 | 757.1 | 85.0 | 29.4 | 51 | E | 3.2 | 1.4 | | | 8 | | | 0 | 0 | Cloudy | |
| Belgaum | 27.38 | 695.6 | 29.88 | 759.0 | 85.9 | 29.9 | 56 | W | 6.0 | 2.7 | | | 5 | | E | 0 | 0 | Thunder | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.95 | 735.3 | 29.84 | 757.9 | 86.4 | 30.2 | 45 | Calm | 0.9 | 0.4 | | | 10 | | | 0 | 0 | | |
| Agra | 29.28 | 743.8 | 29.83 | 757.6 | 97.6 | 36.4 | 16 | W | | | | | 4 | | SW | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.82 | 732.0 | 29.83 | 757.6 | 99.0 | 37.2 | 20 | Calm | 3.4 | 1.5 | | | | | | 0 | 0 | Blue sky | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.38 | 746.2 | 29.74 | 755.4 | 94.2 | 34.6 | 68 | W | 2.9 | 1.3 | | | 10 | | | 0 | 0 | Overcast | |
| Allahabad | 29.53 | 750.0 | 29.83 | 757.7 | 92.7 | 33.7 | 30 | Calm | 1.2 | 0.5 | | | 2 | | | 0 | 0 | D. clouds | |
| Patna | 29.64 | 752.9 | 29.82 | 757.4 | 91.1 | 32.8 | 33 | W | 2.7 | 1.2 | | | 8 | SW | SW | 0 | 0 | D. clouds | |
| Hazaribagh | 27.87 | 708.0 | 29.85 | 758.2 | 87.8 | 31.0 | 12 | WNW | 5.7 | 2.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.81 | 757.1 | 29.89 | 759.1 | 91.1 | 32.8 | 31 | SSW | 4.1 | 1.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Calcutta (Allpore) | 29.86 | 758.4 | 29.88 | 758.9 | 86.7 | 30.4 | 39 | SW | 5.0 | 2.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.48 | 748.8 | 29.87 | 758.6 | 83.5 | 28.6 | 53 | NE | 2.0 | 0.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.83 | 757.7 | 29.92 | 760.0 | 83.2 | 28.4 | 79 | W | 5.4 | 2.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Sibsagar | 29.58 | 751.2 | 29.92 | 759.8 | 77.1 | 25.1 | 74 | ENE | 1.2 | 0.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.53 | 724.7 | 29.86 | 758.4 | 95.5 | 35.3 | 35 | NW | 2.5 | 1.1 | | | | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.15 | 740.3 | 29.56 | 750.9 | 40.8 | 4.9 | 63 | NE | 1.3 | 0.6 | ..... | ..... | 10 | ..... | ..... | 0.803 | 20.4 | ..... | Prof. Giovanni Codig. |
| Padua | 29.44 | 747.7 | 29.55 | 750.5 | 42.3 | 5.7 | 61 | NE | 9.8 | 4.4 | ..... | ..... | 10 | NE | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Vicenza | 29.37 | 745.9 | 29.56 | 750.9 | 42.8 | 6.0 | 54 | E | 0 | 0 | ..... | ..... | 9 | ..... | ..... | 0.130 | 3.3 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.23 | 717.0 | 29.56 | 750.9 | 41.0 | 5.0 | 54 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.04 | 737.5 | 29.56 | 750.8 | 48.2 | 9.0 | ..... | E | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 28.61 | 726.7 | 29.53 | 750.0 | 49.3 | 9.6 | 23 | ENE | 7.4 | 3.3 | ..... | ..... | 4 | S | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 27.59 | 700.8 | 29.52 | 749.9 | 44.4 | 6.9 | 17 | NNW | ..... | ..... | 4 | ..... | 8 | W | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.27 | 743.4 | 29.49 | 749.1 | 48.2 | 9.0 | 34 | ENE | ..... | ..... | 6 | ..... | 5 | W | ..... | 0.008 | 0.2 | ..... | Prof. L. Vassallo. |
| Genoa | 29.34 | 745.3 | 29.52 | 749.7 | 53.4 | 11.9 | 10 | NW | 3 8 | 1.7 | ..... | ..... | 8 | SW | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.28 | 743.8 | 29.61? | 752.0? | 44.4 | 6.9 | 57 | SE | ..... | ..... | 6 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.28 | 743.8 | 29.54 | 750.4 | 46.4 | 8.0 | 73 | NW | ..... | ..... | 2 | ..... | 8 | W | ..... | 0.496 | 12.6 | ..... | Cav. F. Meucci. |
| Leghorn | 29.45 | 747.9 | 29.53 | 750.1 | 50.9 | 10.5 | 42 | W | 23.0 | 10.3 | ..... | ..... | 2 | ..... | ..... | 0.244 | 6.2 | ..... | Prof. P. Monte. |
| Pesaro | 29.48 | 748.9 | 29.54 | 750.2 | 47.5 | 8.6 | 81 | SW | 18.6 | 8.3 | ..... | ..... | 10 | SW | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 27.97 | 710.5 | 29.54 | 750.3 | 41.0 | 5.0 | 66 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.079 | 2.0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.48 | 748.7 | 29.59 | 751.6 | 54.5 | 12.5 | 50 | WNW | ..... | ..... | 4 | ..... | 4 | NW | ..... | 0.067 | 1.7 | ..... | Avv. P. Ponticelli. |
| Rome | 29.50 | 749.4 | 29.68 | 753.9 | 53.6 | 12.0 | 70 | SW | 28.0 | 12.5 | ..... | ..... | 10 | ..... | ..... | 0.106 | 2.7 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U. | 29.50 | 750.8 | 29.76 | 755.9 | 58.3 | 14.6 | 39 | SSW | ..... | ..... | 4 | ..... | 4 | S | ..... | 0.039 | 1.0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 61.9 | 16.6 | 45 | WSW | 6.3 | 2.8 | ..... | ..... | 4 | SW | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.55 | 750.6 | 29.74 | 755.5 | 53.6 | 12.0 | 71 | NW | ..... | ..... | 2 | ..... | 6 | W | ..... | 0.012 | 0.3 | ..... | Prof. A. Pacinotti. |
| Cosenza | 28.92 | 734.6 | 29.82 | 757.3 | 56.6 | 13.8 | 73 | SW | 0.7 | 0.3 | ..... | ..... | 9 | ..... | ..... | 0.098 | 2.5 | ..... | Prof. F. D. Conti. |
| Palermo | 29.50 | 749 2 | 29.75 | 755.7 | 57.7 | 14.3 | 59 | W | 6.9 | 3.1 | ..... | ..... | 9 | ..... | ..... | 0.114 | 2.9 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.65 | 753.0 | 29.72 | 754.9 | 62.6 | 17.0 | 62 | SW | ..... | ..... | 2 | ..... | 8 | SW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.22 | 742.1 | 29.77 | 756.2 | 53.2 | 11.8 | 47 | WSW | 8.1 | 3.6 | ..... | ..... | 5 | SW | ..... | 0.201 | 5.1 | ..... | Prof. F. Brioschi |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.8 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 29.84 | 757.9 | 29.91 | 759.7 | 46.2 | 7.9 | 85 | ENE | 3.5 | 1.6 | ..... | 0 | 10s | ..... | ..... | 0.280 | 7.11 | Cloudy..... | The Observatory. |
| Tokei (Yeddo) University | 29.79 | 756.7 | 29.89 | 759.2 | 47.5 | 8.6 | 81 | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine ..... | Prof. P. V. Veeder. |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascallientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Castillo, A. E. |
| Guadalajara | 25.01 | 635.2 | 30.10 | 763.9 | 41.9 | 5 1 | 55 | SW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Blue sky..... | Prof. L. Perez. |
| Guanajuato | 23.65 | 600.8 | 29.91 | 759.7 | 55.9 | 13.3 | 59 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair ..... | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 52.9 | 11.6 | 43 | SW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy ..... | Prof. M. Leal. |
| Mexico | 23.09 | 586.3 | 30.24 | 768.1 | 41.9 | 5.5 | 51 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair. ..... | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 48.4 | 8.6 | 46 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear... | M. V. de Leon, M. E. |
| Puebla | 23.33 | 592.7 | 30.10 | 764.6 | 40.8 | 4.9 | 55 | ENE | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 30.00 | 762.0 | 30.02 | 762.3 | 68.0 | 20.0 | 91 | Calm | 0 | 0 | ..... | 6cs | 4n | SW | NW | 0 | 0 | Foggy ..... | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 30.03 | 762.7 | 30.06 | 763.4 | 73.4 | 23.0 | 67 | ESE | 2.4 | 1.1 | ..... | 0 | 9sk | ..... | SW | 0 | 0 | Very cloudy | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 49.1 | 9.5 | 72 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Blue sky..... | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Spina. [M. M. D. D. |
| Morelia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Tena, F. L. Param. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Groningen | 29.60 | 751.8 | 29.60 | 751.8 | 42.8 | 6.0 | ..... | N | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... |
| Helder | 29.52 | 749.9 | 29.58 | 751 3 | 40.8 | 4.9 | ..... | NE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.028 | 0.7 | ..... | ..... |
| Hellevoetsluis | 29.59 | 751.6 | 29.59 | 751.6 | 40.3 | 4.6 | ..... | WNW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.028 | 0.7 | ..... | ..... |
| Utrecht | 29.54 | 750 3 | 29.54 | 750 3 | 42.4 | 5.8 | 82 | NNE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| | 29.53 | 750.1 | 29.58 | 751.3 | 40.3 | 4.6 | 80 | NNE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy..... | H. v d Brink. |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.48 | 748.8 | 29.54 | 750.2 | 34.2 | 1.2 | 49 | N | 6.7 | 3.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... |
| Brönö | 29.73 | 755.1 | 29.77 | 756.1 | 25.2 | — 3.8 | 66 | ESE | 9 | 4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... |
| Christiania | 29.46 | 748.2 | 29.61 | 752.1 | 28.2 | — 2.1 | 81 | NE | 7 | 3 | ..... | ..... | 10 | ..... | ..... | 0.016 | 0.4 | Snowing | ..... |
| Tromsö | 29.81 | 757.2 | 29.85 | 758.3 | 23.0 | — 5.0 | 66 | NE | 4 | 2 | ..... | ..... | 5 | ..... | ..... | 0.031 | 0.8 | ..... | ..... |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.64 | 752.8 | 29.83 | 757.7 | 60.1 | 15.6 | 93 | WNW | 10.5 | 4.7 | ..... | ..... | 5 | ..... | ..... | 1.654 | 42.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.08 | 738.5 | 30.11 | 764.8 | 56.3 | 13.5 | 36 | NW | 15.0 | 6.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.07 | 763.8 | 30.16 | 766.0 | 63.7 | 17.6 | 70 | SE | 8.7 | 3.9 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.80 | 757.0 | 30.17 | 766.2 | 56.7 | 13.7 | 47 | N | 21.0 | 9.4 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 29.87 | 758.7 | 29.96 | 760.9 | 62.6 | 17.0 | 86 | SW | 28.0 | 12.5 | ..... | ..... | 10 | ..... | ..... | 0.740 | 18.8 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.74 | 755.3 | 29.74 | 755.4 | 85.6 | 29.8 | ..... | S | ..... | ..... | 3 | ..... | 9 | ..... | S | 1 | ..... | Overcast | J. F. R. R. Bastos, Com'd't. A. J. de Mattos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Sado, Porto Praya, Cape Verde Islands | 30.00* | 762.0* | 30.01* | 762.3* | 81.5 | 27.5 | ..... | NE | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 2 | NE | D. clouds | A. N. P. Sampaio, Com'd't. |
| S& da Bandeira, St. Paul de Loanda, Lower Guinea | 29.76 | 756.0 | 29.77 | 756.2 | ..... | ..... | ..... | WNW | ..... | ..... | 3 | ..... | 5 | ..... | WNW | 1 | ..... | Blue sky | F. Texeira da Silva, Com'd't. F. J. Ferreina, dos Amas, Com' |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.15 | 740.3 | 29.58 | 751.2 | 38.8 | 3.8 | 78 | Calm | 0 | 0 | ..... | ..... | 7ks;k | ..... | ..... | Astronomical Obs. |
| Wilna | 29.15 | 740.4 | 29.58 | 751.4 | 29.3 | — 1.5 | 54 | NNW | 4 | 2 | ..... | ..... | 5 | ..... | ..... | Astronomical Obs. |
| Dorpat | 29.31 | 744.5 | 29.56 | 750.8 | 31.6 | — 0.3 | 69 | W | 4 | 2 | ..... | ..... | 7ck | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.53 | 750.0 | 29.54 | 750.4 | 30.9 | — 0.6 | 53 | NE | 7 | 3 | ..... | ..... | 10n | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.24 | 742.6 | 29.57 | 751.1 | 20.1 | — 6.6 | 95 | N | 7 | 3 | ..... | ..... | 5 [ks | ..... | ..... | Ch. Forsten. |
| Kieff | 28.76 | 730.6 | 29.39 | 746.5 | 51.3 | 10.7 | 68 | S | 4 | 2 | ..... | ..... | 8c;ck;k; | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.54 | 750.2 | 29.61 | 752.0 | 50.0 | 10.0 | 87 | S | 45 | 20 | ..... | ..... | 3k | ..... | ..... | Kurdakof. |
| Kertch | 29.39 | 759.2 | 29.91 | 759.7 | 51.4 | 10.8 | 86 | S | 9 | 4 | ..... | ..... | 3 | ..... | ..... | Lagorio. |
| Moscow | 28.96 | 735.6 | 29.52 | 749.8 | 36.7 | 2.6 | 87 | S | 9 | 4 | ..... | ..... | 10s | ..... | ..... | Meteorological Obs. |
| Lugan | 29.59 | 751.5 | 29.79 | 756.6 | 59.4 | 15.2 | 37 | SSW | 22 | 10 | ..... | ..... | 4c | ..... | ..... | Meteorological Obs. |
| Archangel | 29.52 | 749.7 | 29.54 | 750.2 | 29.1 | — 1.6 | 84 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.65 | 727.8 | 30.06 | 763.4 | 62.1 | 16.7 | 30 | W | 4 | 2 | ..... | ..... | 0 | ..... | ..... | Physical Observatory |
| Astrakhan | 30.25 | 768.3 | 30.17 | 766.2 | 47.1 | 8.4 | 62 | S | 4 | 2 | ..... | ..... | 1k | ..... | ..... | Sebastianof. |
| Kasan | 29.60 | 751.8 | 29.87 | 758.8 | 39.6 | 4.2 | 72 | S | 11 | 5 | ..... | ..... | 10 | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.95 | 735.3 | 29.91 | 759.7 | 41.4 | 5.2 | 51 | SW | 22 | 10 | ..... | ..... | 8c | ..... | ..... | Light clouds |
| Nukuss | 29.91 | 759.8 | 30.15 | 765.9 | 40.6 | 4.8 | 84 | NNW | 9 | 4 | ..... | ..... | 10n | ..... | ..... | Meteorological Obs. |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Tashkend | 28.46 | 722.9 | 30.17 | 766.3 | 54.7 | 12.6 | 66 | NW | 4 | 2 | ..... | ..... | 3k | ..... | ..... | Bobrof. |
| Barnaul | 29.50 | 749.3 | 30.04 | 763.0 | 36.0 | 2.2 | 82 | SW | 0 | 0 | ..... | ..... | 10 | ..... | ..... | Michelson. |
| Yeniseisk | 29.45 | 747.9 | 29.78 | 756.5 | 27.5 | — 2.5 | 81 | SE | 7 | 3 | ..... | ..... | 4 | ..... | ..... | Meteorological Obs. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Marks. |
| Krotkowo* | 29.52 | 749.8 | 30.00 | 762.1 | 42.1 | 5.6 | 71 | SSW | 18 | 8 | ..... | ..... | 3s | ..... | ..... | Usolzof. |
| Peking, (China) | 29.91 | 759.6 | 30.05 | 763.2 | 55.8 | 13.2 | 10 | NW | 16 | 7 | ..... | ..... | 0 | ..... | ..... | Cand. Fatjanow. |
| Nertchinsk | 27.63 | 701.9 | 29.81 | 757.2 | 15.8 | — 9.0 | 55 | Calm | 0 | 0 | ..... | ..... | 2 | ..... | ..... | Light clouds |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 18.1 | — 7.7 | 78 | E | 11 | 5 | ..... | ..... | 5n | ..... | ..... | Meteorological Obs. |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 892 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | ..... | ..... | 29.65 | 753.0 | 51.8 | 11. | 58 | NE | 3.9 | 1.73 | ..... | 0 | 3k | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.01 | 762.2 | 30.07 | 763.7 | 52.0 | 11.1 | 67 | NW | 7.1 | 3.17 | ..... | 4 | 1 | NW | ..... | 0.370 | 9.4 | Hailing | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.05 | 687.0 | ..... | ..... | 42.8 | 6.0 | 73 | NE | 6.0 | 2.67 | ..... | 0 | 6 | ..... | ..... | 0 | 0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.75 | 704.8 | 29.98 | 761.5 | 54.9 | 12.7 | 31 | NW | 16.5 | 7.39 | ..... | 0 | 1 | ..... | ..... | 0 | 0 | Almost clear | The Staff. |
| Murcia, Met. Obs'y | 29.78 | 756.4 | 29.93 | 760.2 | 69.4 | 20.8 | 35 | N | 2.8 | 1.25 | ..... | 3 | 3 | E | ..... | 0 | 0 | Almost clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.24 | 742.7 | 30.15 | 765.7 | 62.0 | 11.1 | 58 | NNW | 9.6 | 4.31 | ..... | ..... | 9 | ..... | ..... | 0.031 | 0.8 | Almost cov. | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.91 | 759.6 | 29.97 | 761.3 | 69.6 | 20.9 | 88 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 30.04 | 763.0 | 30.14 | 765.5 | 57.6 | 14.2 | 68 | WSW | 10.8 | 4.8 | ..... | 0 | 1 | W | ..... | 0 | 0 | ..... | Capt. C. Pulazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.86 | 758.4 | 29.95 | 760.7 | 81.0 | 27.2 | 81 | SE | 10.5 | 4.72 | ..... | 2cs | 1k | SE | SE | 0 | 0 | Clear | Leonardo de Tejeda, Chief of Engineers. |

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft. The barometer readings at Barcelona are published as given.

## SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-12. | Clouds. Amount. Up'er 0-10. | Clouds. Amount. Low'r 0-10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.69 | 754.1 | 29.78 | 755.1 | 19.8 | — 6.8 | ..... | NNE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.69 | 754.2 | 29.74 | 755.5 | 21.6 | — 5.8 | 69 | NE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.69 | 754.2 | 29.78 | 756 5 | 23.4 | — 4.8 | 67 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.47 | 748.6 | 29.65 | 753.1 | 27.0 | — 2.8 | 66 | NNW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.55 | 750.6 | 29.61 | 752.1 | 33.8 | 1.0 | 68 | NNE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.60 | 751.7 | 29.67 | 753.6 | 27.1 | — 2.7 | 68 | N | 7.8 | 3.5 | ..... | ..... | 8 | ..... | NNE | 0 | 0 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.21 | 716.6 | 29.69 | 754.1 | 37.8 | 3.2 | 50 | S | ..... | ..... | 6 | ..... | 3 | ..... | ..... | 0.047 | 1.2 | Cloudy | The Observatory. |
| Zurich | 27.96 | 710.3 | 29.66 | 753.4 | 36.7 | 2.6 | 55 | W | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.047 | 1.2 | Cloudy | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —7.8 mm.; Thermometer, —5.8 cent.; Relative Humidity, —9 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.81 | 757.2 | 62.1 | 16.7 | 49 | SSW | 34 | 15.0 | ..... | ..... | 4 | ..... | SW | 0.150 | 3.8 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanidès. |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. Bertrand. |
| Valona | ..... | ..... | 29.79 | 756.6 | 68.5 | 14.7 | ..... | W | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | Imperial Observatory. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria.) Lee Obs'y | 30.01 | 762.2 | 30.13 | 765.2 | 62.1 | 16.7 | 64 | N | ..... | ..... | 1 | ..... | 1ks | ..... | ..... | 0 | 0 | D. clouds | Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.887 | 758.97 | 29.95 | 760.3 | 27.7 | — 2.4 | 93 | SW | 33 | 14.8 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.34 | 745.2 | 29.67 | 753.6 | 10 | —12.2 | ..... | W | 5 | 2.2 | ..... | ..... | 10s | ..... | W | 0.27 | 6.9 | Light snow. | W. R. Bigg. |
| *Chatham, N B | 28.89 | 733.8 | 28.95 | 735.3 | 29 | — 1.7 | 77 | S | 21 | 9.4 | ..... | 5k | 2ks | S | S | 0.48 | 12.2 | Fair | G. A. Blair. |
| Charlottetown, P. E. Island | 29.04 | 737.6 | 29.08 | 738.6 | 39 | 3.9 | 88 | S | 13 | 5.8 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.29 | 744.0 | 29.49 | 749.0 | 8.0 | —13.3 | 91 | NW | ..... | ..... | 3 | ..... | 10n | ..... | ..... | 0.20 | 5.1 | Stormy | James Smith, M. A. |
| Dalhousie, N. B | 28.81 | 731.8 | 28.81 | 732.5 | 31.5 | — 0.3 | 98 | SE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.25 | 6.3 | Gloomy | H. A. Johnson. |
| Esquimault, B. C | 29.54 | 750.3 | 29.59 | 751.6 | 48.3 | 9.1 | 100 | Calm | ..... | ..... | ..... | ..... | 7cs | ..... | ..... | 0.10 | 2.5 | Cloudy | W. H. Bevis. |
| *Father Point, Quebec | 28.80 | 731.5 | 28.82 | 732.0 | 24 | — 4.4 | 97 | NE | 54 | 24.1 | ..... | ..... | 10n | ..... | ..... | 0.30 | 7.6 | Light snow. | J. McWilliams. |
| Fredericton, N. B | 28.97 | 735.8 | 29.04 | 737.6 | 25.7 | — 3.5 | 67 | S | 21 | 9.4 | ..... | ..... | 7s | ..... | S | 0.39 | 9.9 | Cloudy | Prof. Harrison. |
| *Fort Garry Manitoba | 29.14 | 740.1 | 30.01 | 762.2 | 27 | — 2.8 | 94 | SE | 4 | 1.8 | ..... | 5k | 2ics | SW | SW | 0 | 0 | Cloudy | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Straug, M. A. |
| Granton, Ontario | 28.75 | 730.2 | 29.95 | 760.7 | 12.5 | —10.8 | 90 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | James Grant. |
| *Halifax, N. S | 29.00 | 738.1 | 29.20 | 741.7 | 31 | — 0.6 | 94 | SW | 26 | 11.6 | ..... | ..... | 10n | ..... | SW | 0.336 | 8.58 | Cloudy | F. Allison, M. A. |
| Hamilton, Ontario | 29.49 | 749.0 | 29.89 | 759.2 | 19.2 | — 7.1 | 84 | SW | ..... | ..... | 1 | 10cs | 0 | ..... | ..... | 0 | 0 | Cloudy | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.69 | 754.1 | 29.72 | 754.9 | 51 | 10.6 | 79 | S | ..... | ..... | 3 | ..... | 2ks | ..... | S | 0.16 | 4.1 | Cloudy | E. Weedon. |
| *Kingston, Ontario | 29.30 | 744.2 | 29.66 | 753.4 | 9 | —12.8 | 72 | W | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 0.14 | 3.6 | Cloudy | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.24 | 742.7 | 29.28 | 743.7 | 45 | 7.2 | ..... | S | 16 | 7.2 | ..... | ..... | 10n | ..... | ..... | 0.81 | 20.6 | Overcast | C. H. Rigby. |
| *Montreal, Quebec | 29.14 | 740.1 | 29.35 | 745.5 | 10 | —12.2 | 83 | W | 27 | 12.1 | ..... | ..... | 10n | ..... | ..... | 0.67 | 17.0 | Heavy snow | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.10 | 739.1 | 29.85 | 758.2 | 11 | —11.7 | 80 | N | 13 | 5.8 | ..... | 5k | 5ks | N | N | 0 | 0 | Cloudy | Rev. R. Mosley. |
| Peterboro, Ontario | 28.95 | 735.3 | 29.76 | 755.9 | 12.9 | —10.6 | 67 | N | ..... | ..... | ..... | ..... | 10s | ..... | ..... | 0 | 0 | ..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.19 | 741.4 | 29.94 | 760.5 | 14 | —10.0 | 64 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | H. Morgan. |
| Port Hastings, N. S | 29.18 | 741.2 | 29.23 | 742.4 | 40.6 | 4.8 | ..... | SW | 6 | 2.7 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | Peter Grant. |
| Port Stanley, Ontario | 29.26 | 743.2 | 29.95 | 760.7 | 17 | — 8.3 | 83 | W | 6 | 2.7 | ..... | 5k | 2n | NW | NW | 0.19 | 4.8 | Light snow. | M. Payne. |
| *Quebec, Quebec | 28.69 | 728.7 | 29.03 | 737.3 | 18 | — 7.8 | 84 | N | ..... | ..... | 5 | ..... | 10n | ..... | ..... | 0.51 | 13.0 | Cloudy | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.21 | 741.9 | 29.71 | 754.6 | 12 | —11.1 | 82 | NW | 10 | 4.5 | ..... | ..... | 10s | ..... | NW | Inap. | Inap. | Cloudy | W. H. McIntyre. |
| St. Andrews, N. B | 29.02 | 737.1 | 29.07 | 738.4 | 26 | — 3.3 | 79 | W | 15 | 6.7 | ..... | 2k | 5ks | W | ..... | 0.08 | 2.0 | Cloudy | Dr. Gove. |
| St. John, N. B | 28.96 | 735.6 | 29 13 | 739.0 | 36 | 2.2 | 94 | S | 21 | 9.4 | ..... | ..... | 10ks | ..... | ..... | 0.010 | 0.25 | ..... | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.13 | 739.9 | 29.89 | 759.2 | 20 | — 6.7 | 89 | N | 15 | 6.7 | ..... | ..... | 10n | ..... | ..... | 0.04 | 1.0 | Cloudy | K. Stewart. |
| Stayner, Ontario | 29.01 | 736.8 | 29.85 | 758.2 | 15 | — 9.4 | 84 | NW | 15 | 6.7 | ..... | ..... | 10n | ..... | NW | 0.22 | 5.6 | Cloudy | R. J. Cole. |
| Stratford, Ontario | 28.56 | 725.4 | 29.94 | 760.5 | 11.7 | —11.3 | 88 | W | 7 | 3.1 | ..... | 1cs | 2s | ..... | ..... | 0.05 | 1.3 | Fair | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.20 | 743.2 | 29.29 | 744.0 | 47 | 8.3 | 95 | S | 17 | 7.6 | ..... | 5k | 2n | SW | S | 0.71 | 18.0 | Clearing | T. C. Hill. |
| *Toronto, Ontario | 29.44 | 747.8 | 29.85 | 758.2 | 17 | — 8.3 | 68 | W | 19 | 8.5 | ..... | ..... | 10ks | ..... | NW | 0.02 | 0.5 | Cloudy | Magnetic Observatory. |
| Windsor, N. S | 29.00 | 738.1 | 29.16 | 740.7 | 31.0 | — 0.6 | 68 | S | 36 | 16.1 | ..... | 1cs | 8ks | ..... | ..... | 0.13 | 3.3 | Fair | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 47.6 | 8.8 | 100 | S | ..... | ..... | ..... | 5ks | 5n;s | ..... | ..... | 0.02 | 0.5 | Cloudy | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.32 | 744.7 | 29.56 | 750.8 | 12 | —11.1 | 80 | NW | 18 | 8.0 | | | 10s | | W | 0.14 | 3.6 | Threatening | |
| Alpena, Michigan | 29.23 | 742.4 | 29.91 | 759.7 | 16 | — 8.9 | 83 | W | 8 | 3.6 | | | 10s | | W | 0.03 | 0.8 | Cloudy | |
| Atlantic City, New Jersey | 29.78 | 756.4 | 29.80 | 756.9 | 21 | — 6.1 | 57 | W | 24 | 10.7 | | 0 | 0 | | | 0.17 | 4.3 | Clear | |
| Augusta, Georgia | 29.71 | 754.6 | 29.90 | 759.4 | 51 | 10.6 | 52 | Calm | 0 | 0 | | 0 | Sm'e | | Calm | 0 | 0 | Smoky | |
| Baltimore, Maryland | 29.80 | 756.9 | 29.85 | 758.2 | 25 | — 3.9 | 60 | NW | 14 | 6.3 | | 2k | 0 | NW | | 0.21 | 5.3 | Clear | |
| Barnegat, New Jersey | 29.72 | 754.9 | 29.75 | 755.6 | 22 | — 5.6 | 60 | W | 18 | 8.0 | | 0 | 0 | | | 0.09 | 2.3 | Clear | |
| Bismarck, Dakota | 27.93 | 709.4 | 29.79 | 756.7 | 34 | 1.1 | 70 | SE | 20 | 8.9 | | 0 | 8s | | Calm | 0 | 0 | Fair | |
| Boise City, Idaho | 26.84 | 681.7 | 29.72 | 754.9 | 53 | 11.7 | 67 | N | 1 | 0.4 | | | 10s | | Calm | 0 | 0 | Threatening | |
| Boston, Massachusetts | 29.28 | 743.7 | 29.45 | 748.0 | 14.5 | — 9.7 | 38 | SW | 28 | 12.5 | | 1cs | 0 | W | | 0.07 | 1.8 | Clear | |
| Brackettville, Texas | 28.77 | 730.7 | 29.81 | 757.2 | 49 | 9.4 | 85 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 28.96 | 734.0 | 29.93 | 760.2 | 28 | — 2.2 | 88 | SE | 8 | 3.6 | | 8cs | 0 | NW | | 0 | 0 | Cloudy | |
| Brownsville, Texas | 29.92 | 760.0 | 29.99 | 761.7 | 63 | 17 2 | 94 | S | 2 | 0.9 | | 0 | Fog | | | 0 | 0 | Foggy | |
| Buffalo, New York | 29.09 | 738.9 | 29.84 | 757.9 | 14 | —10.0 | 82 | W | 16 | 7.2 | | | 10s | | W | 0.60 | 15.2 | Cloudy | |
| Burkes, Arizona | | | | | 54 | 12.2 | 55 | Calm | | | 0 | 0 | 0 | | | 0 | 0 | Clear | |
| Burlington, Vermont | 29.17 | 740.9 | 29.44 | 747.8 | 11 | —11.7 | 60 | W | 16 | 7.2 | | 8cs | 2s | Calm | W | 0.24 | 6.1 | Cloudy | |
| Cairo, Illinois | 29.69 | 754.1 | 30.10 | 764.6 | 43 | 6.1 | 51 | E | 10 | 4.5 | | 0 | 0 | | | 0 | 0 | Clear | |
| Camp Grant, Arizona | 25.09 | 637.3 | 29.89 | 759.2 | 50 | 10.0 | 32 | N | | | 1 | 0 | 0 | | | 0 | 0 | Clear | |
| Camp Verde, Arizona | 26.63 | 676.4 | 30.12 | 765.0 | 53 | 11.7 | 42 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Campo, California | 27.30 | 693.4 | 29.87 | 757.7 | 43 | 6.1 | 91 | SW | 3 | 1.3 | | 5k | 0 | W | | 0.28 | 7.1 | Fair | |
| Cape Hatteras, N. Carolina | 29.82 | 757.4 | 29.83 | 758.7 | 42 | 5.6 | 74 | NE | 18 | 8.0 | | 2k | 0 | NE | | 0.02 | 0.5 | Fair | |
| Cape Henry, Virginia | 29.84 | 757.9 | 29.87 | 758.7 | 33 | 0.6 | 61 | NW | 30 | 13.4 | | 2k | 2s | NW | N | 0 | 0 | Fair | |
| Cape Lookout, N. Carolina | 29.80 | 756.9 | 29.81 | 757.2 | 47 | 8.3 | 48 | N | 15 | 6.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Cape May, New Jersey | 29.80 | 756.9 | 29.83 | 757.7 | 24 | — 4.4 | 61 | NW | 40 | 17.9 | | 5k | 0 | NW | | 0.08 | 2.0 | Fair | |
| Charleston, South Carolina | 29.81 | 757.2 | 29.88 | 758.9 | 56 | 13.3 | 35 | N | 7 | 3.1 | | 0 | Haze | | Calm | 0 | 0 | Hazy | |
| Cheyenne, Wyoming | 23.83 | 605.3 | 29.77 | 756.1 | 40 | 4.4 | 65 | NW | 4 | 1.8 | | 0 | 2s | | Calm | 0 | 0 | Clear | |
| Chicago, Illinois | 29.30 | 744.2 | 30.03 | 762.7 | 27 | — 2.8 | 88 | NW | 5 | 2.2 | | 8k | 0 | NW | | 0.04 | 1.0 | Fair | |
| Cincinnati, Ohio | 29.37 | 746.0 | 30.04 | 763.0 | 27 | — 2.8 | 82 | NW | 6 | 2.7 | | 7k | 0 | NW | | Inap. | Inap. | Fair | |
| Cleveland, Ohio | 29.24 | 742.7 | 30.01 | 762.2 | 29 | — 6.7 | 70 | NW | 15 | 6.7 | | 0 | 5ks | | NW | 0.14 | 3.6 | Fair | |
| Concho, Texas | 28.12 | 714.2 | 29.82 | 757.4 | 45 | 7.2 | 75 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Corsicana, Texas | 29.56 | 749.3 | 29 97 | 761.2 | 51 | 10.6 | 65 | Calm | 0 | 0 | | 2cs | Haze | W | Calm | 0 | 0 | Fair | |
| Davenport, Iowa | 29.41 | 747.0 | 30.08 | 764.0 | 31 | — 0.6 | 69 | E | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Deadwood, Dakota | 25.09 | 637.3 | | | 44 | 6.7 | 68 | S | 3 | 1.3 | | 5cs | 0 | | | 0 | 0 | Fair | |
| Denison, Texas | 29.20 | 741.7 | 30.00 | 762.0 | 51 | 10.6 | 65 | N | 3 | 1.3 | | 1cs | Sm'e | N | | 0 | 0 | Clear | |
| Denver, Colorado | 24.56 | 624.3 | 29.80 | 756 9 | 43 | 6.1 | 36 | S | 8 | 3.6 | | 0 | 5s | | Calm | 0 | 0 | Fair | |
| Detroit, Michigan | 29.28 | 743.7 | 29.98 | 761.5 | 20 | — 6.7 | 56 | NW | 6 | 2.7 | | 8k | 0 | NW | | 0.04 | 1.0 | Fair | |
| Dodge City, Kansas | 27.28 | 692.9 | 29.55 | 750 6 | 47 | 8.3 | 49 | S | 20 | 8.9 | | 2c | 2s | Calm | S | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.33 | 745.0 | 30.06 | 763.5 | 30 | — 1.1 | 47 | S | 1 | 0.4 | | 0 | 1s | | Calm | 0 | 0 | Clear | |
| Duluth, Minnesota | 29.20 | 744.0 | 29.99 | 761.7 | 28 | — 2.2 | 77 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Eagle Pass, Texas | 29.08 | 738.6 | 29.82 | 757.4 | 52 | 11.1 | 86 | Calm | 0 | 0 | | Haze | 0 | Calm | | 0 | 0 | Hazy | |
| Eastport, Maine | 29.01 | 736.8 | 29.08 | 738.6 | 24 | — 4.4 | 74 | S | 31 | 13.9 | | | 10n | | SW | 0.18 | 4.6 | Light snow | |
| Erie, Pennsylvania | 29.16 | 740.7 | 29.92 | 760.0 | 19 | — 7.2 | 85 | NW | 13 | 5.8 | | | 10s | | NW | 0.14 | 3.6 | Cloudy | |
| Escanaba, Michigan | 29.29 | 744.0 | 29.97 | 761.2 | 25 | — 3.9 | 75 | W | 7 | 3.1 | | | 10s | | W | 0.02 | 0.5 | Cloudy | |
| Florence, Arizona | 28.20 | 716.3 | 29.80 | 756.9 | 52 | 11.1 | 30 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | 24.02 | 610.1 | 30.02 | 762.5 | 43 | 6.1 | 66 | SW | 5 | 2.2 | | 2c | 0 | | | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.40 | 645.2 | | | 43 | 6.1 | 67 | NW | 1 | 0.4 | | 0 | 2s | | Calm | 0 | 0 | Fair | |
| Fort Gibson, Indian Ter | 29.45 | 748.0 | 29.99 | 761.7 | 44 | 6.7 | 68 | SE | 3 | 1.3 | | 5cs | Sm'e | N | Calm | 0 | 0 | Fair | |
| Fort Griffin, Texas | 28.69 | 728.7 | 29.98 | 761.5 | 46 | 7.8 | 62 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.50 | 749.3 | 29.53 | 750.0 | 27 | — 2.8 | 88 | NE | 11 | 4.9 | | | 10s | | N | 0 | 0 | Cloudy | |
| Fort Sill, Indian Territory | 28.74 | 730.0 | 29.84 | 757.9 | 52 | 11.1 | 47 | SE | 4 | 1.8 | | 2cs | 0 | NW | | 0 | 0 | Clear | |
| Galveston, Texas | 29.90 | 759.4 | 29.94 | 760.5 | 63 | 17.2 | 78 | W | 4 | 1.8 | | 0 | Haze | | Calm | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.31 | 744.5 | 29.99 | 761.7 | 26 | — 3.3 | 88 | E | 1 | 0.4 | | | 10s | | Calm | 0.01 | 0.3 | Cloudy | |
| Indianapolis, Indiana | 29.24 | 742.7 | 30.06 | 763.5 | 28 | — 2.2 | 66 | NW | 3 | 1.3 | | 0 | 8s | | N | Inap. | Inap. | Fair | |
| Indianola, Texas | 29.95 | 760.7 | 29.98 | 761.5 | 64 | 17.8 | 89 | W | 12 | 5.4 | | 0 | Haze | | Calm | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.53 | 732.3 | 29.97 | 761.2 | 50 | 10.0 | 52 | SE | 4 | 1.8 | | 1c | 0 | | | 0 | 0 | Clear | |
| Jacksonville, Florida | 29.84 | 757.9 | 29.86 | 758.4 | 64 | 17.8 | 53 | W | 4 | 1.8 | | Haze | 0 | W | | 0 | 0 | Hazy | |
| Keokuk, Iowa | 29.40 | 746.7 | 30.03 | 762.7 | 40 | 4.4 | 65 | Calm | 0 | 0 | | 0 | Haze | | Calm | 0 | 0 | Clear | |
| Key West, Florida | 29.92 | 760.0 | 29.95 | 760.7 | 70 | 21.1 | 80 | W | 5 | 2.2 | | 5ck | 2s | W | W | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 29.83 | 757.7 | 29.89 | 758.4 | 37 | 2.8 | 63 | NE | 21 | 9.4 | | 8k | 0 | N | | 0 | 0 | Fair | |
| Knoxville, Tennessee | 28.99 | 736.3 | 30.04 | 763.0 | 34 | 1.1 | 79 | NE | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| La Crosse, Wisconsin | 29.28 | 743.7 | 30.06 | 763.5 | 28 | — 2.2 | 88 | S | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 25.97 | 659.6 | 30.12 | 765.0 | 43 | 6.1 | 75 | Calm | 0 | 0 | | 5k | 0 | S | | 0 | 0 | Fair | |
| Laredo, Texas | 29.52 | 749.8 | 29.86 | 758.4 | 57 | 13.9 | 87 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Leavenworth, Kansas | 29.14 | 740.1 | 30.01 | 762.2 | 40 | 4.4 | 65 | NE | 2 | 0.9 | | 5ck | 0 | NW | | 0 | 0 | Fair | |
| Los Angeles, California | 29.57 | 751.1 | 29.92 | 760.0 | 47 | 8.3 | 80 | N | 4 | 1.8 | | 2ck | 2s | SW | Calm | 0.22 | 5.6 | Fair | |
| Louisville, Kentucky | 29.49 | 749.0 | 30.08 | 764.0 | 27 | — 2.8 | 53 | N | 6 | 2.7 | | 0 | Sm'e | | N | 0 | 0 | Clear | |
| Lynchburg, Virginia | 29.18 | 741.2 | 29.88 | 758.9 | 35 | 1.7 | 61 | NW | 8 | 3.6 | | 0 | 0 | | | 0.02 | 0.5 | Clear | |
| Marquette, Michigan | 29.21 | 741.9 | 29.94 | 760.5 | 28 | — 2.2 | 88 | W | 9 | 4.0 | | | 10n | | Calm | 0.28 | 7.1 | Light snow | |
| Mason, Texas | 28.33 | 719.6 | 30.14 | 765.5 | 48 | 8.9 | 70 | NW | 4 | 1.8 | | 2c | 0 | Calm | | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.72 | 754.9 | 30.05 | 763.3 | 48 | 8.9 | 48 | NE | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.25 | 742.9 | 30.02 | 762.5 | 24 | — 4.4 | 74 | NW | 6 | 2.7 | | 1cs | 0 | | | 0.06 | 1.5 | Clear | |
| Mobile, Alabama | 29.91 | 759 7 | 29.96 | 761.0 | 59 | 15.0 | 51 | N | 7 | 3.1 | | 0 | Haze | | Calm | 0 | 0 | Clear | |
| Montgomery, Alabama | 29.75 | 755.6 | 29.98 | 761.5 | 52.5 | 11.4 | 60 | N | 1 | 0.4 | | 0 | Haze | | Calm | 0 | 0 | Clear | |
| Morgantown, West Virginia | 28.87 | 733.3 | 29.98 | 761.5 | 24 | — 4.4 | 61 | W | 15 | 6.7 | | 0 | 0 | | | 0.14 | 3.6 | Clear | |
| Mt. Washington, N. H. | 22.60 | 574.0 | 28.96 | 735.6 | —14 | —25.6 | 100 | NW | 72 | 32.1 | | | 10n | | NW | 1.03 | 26.2 | Sleeting | |
| Nashville, Tennessee | 29.52 | 749.8 | 30.07 | 763.8 | 37 | 2.8 | 71 | N | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| New Haven, Connecticut | 29.50 | 749.3 | 29.62 | 752.3 | 23 | — 5.0 | 47 | NW | 22 | 9.8 | | 2k | 0 | NW | | 0.18 | 4.6 | Fair | |
| New London, Connecticut | 29.54 | 750.3 | 29.59 | 751.6 | 18 | — 7.8 | 84 | W | 18 | 8.0 | | 5cs | 1s | NW | W | 0.05 | 1.3 | Fair | |
| New Orleans, Louisiana | 29.86 | 758.4 | 29.92 | 760.0 | 62 | 16.7 | 88 | Calm | 0 | 0 | | 0 | Fog | haz | Calm | 0 | 0 | Fair | |
| Newport, Rhode Island | 29.50 | 749.3 | 29.55 | 750.6 | 18 | — 7.8 | 53 | NW | 32 | 14.3 | | 5k | 0 | W | | 0.07 | 1.8 | Fair | |
| New York, New York | 29.52 | 749.8 | 29.71 | 754.6 | 15 | — 9.4 | 65 | NW | 17 | 7.6 | | 5k | 0 | NW | | 0.12 | 3.0 | Fair | |
| Norfolk, Virginia | 29.84 | 757.9 | 29.91 | 759.7 | 31 | — 0.6 | 58 | N | 8 | 3.6 | | 2k | 0 | N | | 0 | 0 | Clear | |
| North Platte, Nebraska | 26.86 | 682.2 | 29.43 | 747.5 | 33 | 3.3 | 81 | E | 8 | 3.6 | | 5ck | 0 | SE | | 0 | 0 | Fair | |
| Olympia, Washington Ter. | 29.55 | 750.6 | 29.55 | 751.6 | 51 | 10.6 | 93 | Calm | 0 | 0 | | | 10n | | Calm | 0.20 | 5.1 | Light rain | |
| Omaha, Nebraska | 28.86 | 733.0 | 29.96 | 761.0 | 39 | 3.9 | 64 | SE | 6 | 2.7 | | 5c | 0 | Calm | | 0 | 0 | Fair | |
| Oswego, New York | 29.37 | 746.0 | 29.71 | 754.6 | 15 | — 9.4 | 82 | NW | 20 | 8.9 | | | 10n | | | 0.17 | 4.3 | Light snow | |
| Pembina, Dakota | 29.09 | 738.9 | 29.95 | 760.7 | 27.5 | — 2.5 | 82 | SE | 4 | 1.8 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Philadelphia, Pennsylvania | 29.76 | 755.9 | 29.81 | 757.2 | 20 | — 6.7 | 56 | W | 29 | 13.0 | | 8k | 0 | W | | 0.06 | 1.5 | Cloudy | |
| Phœnix, Arizona | 28.66 | 728.0 | 30.47 | 773.9 | 52 | 11.1 | 54 | E | | | | 0 | 0 | | | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.59 | 449.3 | 29.90 | 759.4 | 14 | —10.0 | 64 | N | 24 | 10.7 | | 8k | 0 | N | | 0 | 0 | Fair | |
| Ploche, Nevada | 23.80 | 604.5 | 29.57 | 751.1 | 41 | 5.0 | 57 | S | 14 | 6.3 | | | 10s | | S | 0 | 0 | Cloudy | |
| Pittsburg, Pennsylvania | 29.08 | 738.6 | 29.94 | 760.5 | 20 | — 6.7 | 70 | NW | 15 | 6.7 | | 5k | 5s | NW | NW | 0.03 | 0.8 | Cloudy | |
| Port Huron, Michigan | 29.25 | 742 9 | 29.95 | 760.7 | 19 | — 7.2 | 85 | W | 14 | 6.3 | | 8k | 2ks | N | W | 0.06 | 1.5 | Cloudy | |
| Portland, Maine | 29.22 | 742.2 | 29.27 | 743.4 | 16 | — 8.9 | 66 | W | 11 | 4.9 | | 5k | Haze | W | | 0.12 | 3.0 | Fair | |
| Portland, Oregon | 29.59 | 751.6 | 29.67 | 753.6 | 56 | 13.3 | 93 | N | 1 | 0.4 | | | 10n | | NW | 0.06 | 1.5 | Light rain | |
| Prescott, Arizona | 24.63 | 625.6 | 29.99 | 761.7 | 36 | 2 2 | 61 | SW | | | 1 | 0 | 0 | | | 0 | 0 | Clear | |
| Punta Rassa, Florida | 29.94 | 760.5 | 29.96 | 761.0 | 70 | 21.1 | 85 | W | 16 | 7.2 | | | 10s | | W | 0 | 0 | Cloudy | |
| Red Bluff, California | 29.48 | 748.8 | 29.84 | 757.9 | 49 | 9.4 | 85 | SE | 16 | 7.2 | | | 10n | | Calm | 0.52 | 13.2 | Light rain | |
| Rochester, New York | 29.10 | 739.1 | 29.75 | 755.6 | 13 | —10.6 | 81 | NW | 16 | 7.2 | | 8k | 0 | NW | | 0.21 | 5:3 | Fair | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roseburg, Oregon | 29.20 | 741.7 | 29.76 | 755.9 | 49.5 | 9.7 | 93 | S | 10 | 4.5 | ..... | ..... | 10m | ..... | Calm | 1.06 | 26.9 | Light rain... | |
| Sacramento, California | 29.82 | 757.4 | 29.80 | 759.4 | 50 | 10.0 | 86 | S | 5 | 2.2 | ..... | 2k | 8s | S | SW | 0.79 | 20.1 | Cloudy..... | |
| St. Louis, Missouri | 29.48 | 748.8 | 30.07 | 763.8 | 37 | 2.8 | 63 | SE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| St. Marks, Florida | 29.89 | 759.2 | 29.91 | 759.7 | 60 | 15.6 | 54 | N | 9 | 4.0 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Smoky..... | |
| St. Paul, Minnesota | 29.12 | 739.6 | 29.98 | 761 5 | 29 | — 1.7 | 83 | Calm | 0 | 0 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear..... | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.39 | 644.9 | 29.72 | 754.9 | 49 | 9.4 | 64 | SE | 4 | 1.8 | ..... | 5k | 2s | SW | SW | 0 | 0 | Fair..... | |
| San Antonio, Texas | 29.25 | 742.9 | 29.84 | 757.9 | 55 | 12.8 | 81 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| San Diego, California | 29.90 | 759.4 | 29.97 | 761.2 | 52 | 11.1 | 93 | NW | 2 | 0.9 | ..... | ..... | 10n | ..... | Calm | 0.02 | 0.5 | Light rain... | |
| Sandusky, Ohio | 29.32 | 744.7 | 30.03 | 762.7 | 22 | — 5.6 | 72 | N | 25 | 11.2 | ..... | 10k | 0 | N | ..... | Inap. | Inap. | Cloudy..... | |
| Sandy Hook, New Jersey | 29.70 | 754.4 | 29.72 | 754.9 | 19 | — 7.2 | 54 | NW | 44 | 19.7 | ..... | 5k | 0 | NW | ..... | 0.12 | 3.0 | Fair ..... | |
| San Francisco, California | 29.83 | 757.7 | 29.89 | 759.2 | 51 | 10.6 | 86 | S | 3 | 1.3 | ..... | ..... | 10n | ..... | S | 0.43 | 10.9 | Light rain... | |
| Santa Fé, New Mexico | 23.18 | 588.8 | 29.92 | 760.0 | 44 | 6.7 | 45 | Calm | 0 | 0 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy ..... | |
| Savannah, Georgia | 29.78 | 756.4 | 29.87 | 758.7 | 67 | 13.9 | 41 | N | 6 | 2.7 | ..... | Haze | Haze | ..... | ..... | 0 | 0 | Hazy..... | |
| Shreveport, Louisiana | 29.78 | 756.4 | 30.00 | 762.0 | 56 | 13.3 | 40 | NE | 6 | 2.7 | ..... | 5cs | Sm'e | Calm | Calm | 0 | 0 | Fair..... | |
| Smithville, North Carolina | 29.81 | 757.2 | 29.85 | 758.2 | 48 | 8.9 | 56 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Springfield, Massachusetts | 29.37 | 746.0 | 29.51 | 749.5 | 18 | — 7.8 | 53 | W | 12 | 5.4 | ..... | 5k | 0 | W | ..... | 0.02 | 0.5 | Fair ..... | |
| Stockton, Texas | 26.91 | 683.5 | 29.91 | 759.7 | 43 | 6.1 | 51 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Thatcher's Island, Mass | 29.36 | 745.7 | 29.41 | 747.0 | 16 | — 8.9 | 33 | W | 36 | 16.1 | ..... | 1k | 0 | W | ..... | 0.07 | 1.8 | Clear ..... | |
| Toledo, Ohio, | 29.28 | 743.7 | 29.99 | 761.7 | 25 | — 3.9 | 87 | NW | 9 | 4.0 | ..... | ..... | 10s | ..... | NW | 0.03 | 0.8 | Cloudy..... | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 50 | 10.0 | 64 | SE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Tybee Island, Georgia | 29.83 | 757.7 | 29.86 | 758.4 | 56 | 13.3 | 38 | NW | 12 | 5.4 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear..... | |
| Umatilla, Oregon | 29.21 | 741.9 | ..... | ..... | 55 | 12.8 | 93 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy..... | |
| Vicksburg, Mississippi | 29.73 | 755.1 | 29.99 | 761.7 | 56 | 13.3 | 46 | NE | 4 | 1 8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear ..... | |
| Virginia City, Montana | 23.97 | 608.8 | 29.45 | 748.0 | 43 | 6.1 | 59 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy..... | |
| Visalia, California | 29.58 | 751.3 | 29.96 | 761.0 | 46 | 7.8 | 92 | SE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0.16 | 4.1 | Clear..... | |
| Washington, D. C | 29.78 | 756.4 | 29.90 | 759.4 | 24 | — 4.4 | 74 | NW | 18 | 8.0 | ..... | 2k | 0 | NW | ..... | 0.05 | 1.3 | Fair .. ..... | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 47 | 8.3 | 48 | SW | ..... | ..... | 1 | 5ck | 0 | Calm | ..... | 0 | 0 | Fair..... | |
| Wilmington, N. Carolina | 29.76 | 755.9 | 29.84 | 757.9 | 46 | 7.8 | 76 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| Winnemucca, Nevada | 25.39 | 644.9 | 29.75 | 755.6 | 39 | 3.9 | 73 | Calm | 0 | 0 | ..... | 0 | 5ks | ..... | S | 0.06 | 1.5 | Fair ..... | |
| Wood's Holl, Mass | 29.47 | 748.5 | 29.52 | 749.8 | 21 | — 6.7 | 60 | NW | 25 | 11.2 | ..... | 2c | 5s | NW | NW | 0.02 | 0.5 | Fair ..... | |
| Yankton, Dakota | 28.66 | 728.0 | 29.98 | 761.5 | 35 | 1.7 | 71 | E | 8 | 3.6 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair..... | |
| Yuma, Arizona | 29.70 | 754.4 | 29.86 | 758.4 | 60 | 15.6 | 55 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A | 30.24 | 768.1 | 30.30 | 769.6 | — 1.0 | —18.3 | 84 | W | 9 | 4.0 | ..... | ..... | 10n | ..... | ..... | 0.30 | 7.6 | Snowing..... | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I | 29.94 | 760.5 | 29.96 | 761.0 | 73 | 22.8 | 81 | SE | 3.6 | 1.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Gall. |
| Navassa, W. I | 29.85 | 758.2 | 29.93 | 760.2 | 81 | 27.2 | ..... | SE | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy..... | F. M. Everett. |
| Paramaribo, D. Guiana, S. A | ..... | ..... | 30.00 | 762.0 | 83 | 28.3 | 79 | E | ..... | ..... | 3 | ..... | 8ks | ..... | ..... | 0 | 0 | Cloudy..... | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | 30.07 | 763.6 | 30.07 | 763.8 | 85.1 | 29.5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ½ cloudy.... | Dr. H. Groot. |
| Medellin, Colombia, S. A | 25.25 | 641.3 | ..... | ..... | 70.5 | 21.4 | 81 | Calm | ..... | ..... | 0 | 6cs | 8ks; s | ..... | ..... | 0.14 | 3.6 | ..... | Thomas Herran. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,893 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 740 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573,4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.0 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,064.6 ft., or 324.4 m.; Phœnix, 1,300 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,160.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,680 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,302.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.64 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er —10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.86 | 758.4 | 50 | 10.0 | 49 | 9.4 | 100 | SE | 5 | 2.2 | ..... | ..... | 10n | ..... | S | 0.496 | 12.55 | ..... | ..... | Raining..... | |
| Navy Yard, Pensacola, Fla. | 30.04 | 763.0 | 60 | 15.6 | 60 | 15.6 | 88 | NNE | 4 | 1.8 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Portsmouth, N.H | 29.47 | 748.5 | 70 | 21.1 | 14 | —10.0 | 64 | W | 13 | 5.8 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan | 29.90* | 759.4* | 57 | 13.9 | 47 | 8.3 | 88 | Calm | ..... | ..... | 0 | ..... | 10n | ..... | W | 0.04 | 1.0 | ..... | ..... | Misty..... | |
| Adams, Panama | 29.97 | 761.2 | 82 | 27.8 | 82 | 27.8 | 83 | NNW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Alliance, Piraeus, Greece | 29.84‡ | 757.9‡ | ..... | ..... | 58 | 14.4 | ?? | S | ..... | ..... | 3–4 | ..... | 9 | ..... | S | ..... | ..... | ..... | ..... | Pleasant..... | |
| Ashuelot, Shanghai, China | 30.05* | 763.3* | 69 | 20.6 | 64 | 17.8 | 94 | NW | ..... | ..... | 3–6 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Squally..... | |
| Canonicus, New Orleans, La | 29.91 | 759.7 | 48 | 8.9 | 64 | 17.8 | 94 | NW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | Pleasant..... | |
| Colorado, New York, N. Y. | 29.69‡ | 754.1‡ | ..... | ..... | 19 | — 7.2 | 69 | WNW | 24 | 10.7 | ..... | ..... | 5 | ..... | WNW | 0.12 | 3.0 | ..... | ..... | Fair..... | |
| Constitution, N. 48° 45′ W. 6° 46′ | 30.07‡ | 763.8‡ | ..... | ..... | 46 | 7.8 | 84 | NNW | ..... | ..... | 5 | ..... | 6 | ..... | NNW | ..... | ..... | Rough | N | Fair ..... | |
| Despatch, Constantinople, Turkey. | 29.94 | 760.5 | 71 | 21.7 | 60 | 15.6 | 55 | SW | ..... | ..... | 4 | ..... | 2 | ..... | SW | ..... | ..... | Smooth | ..... | Fair ..... | |
| Enterprise, Pensacola, Florida | 29.88‡ | 758.9‡ | ..... | ..... | 63 | 17.2 | 62 | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Misty..... | |
| Franklin, Norfolk, Va | 29.87‡ | 758.7‡ | ..... | ..... | 34 | 1.1 | 62 | NE | 10.0 | 4.5 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | D. clouds..... | |
| Gettysburg Valetta, Malta | 29.85‡ | 758.2‡ | ..... | ..... | 61 | 16.1 | ?? | NNW | ..... | ..... | 2 | ..... | 2 | ..... | Calm | Blank | Blank | ..... | ..... | Fair ..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.04 | 763.0 | 73 | 22.8 | 73 | 22.8 | 72 | NE | ..... | ..... | 3 | ..... | 2 | ..... | NE | ..... | ..... | ..... | ..... | Clear ..... | |
| Marion, Smyrna, Turkey | 29.96 | 761.0 | 62 | 16.7 | 61 | 16.1 | 61 | S | ..... | ..... | 6 | ..... | 10 | ..... | S | 0 | 0 | Smooth | S | Cloudy..... | |
| Michigan, Erie, Pa | 29.39 | 746.5 | 64 | 17.8 | 21 | — 6.1 | 43 | NNW | ..... | ..... | 4 | ..... | 10 | ..... | NNW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monongahela, Hong-Kong, China | 30 06* | 763.5* | 73 | 22.8 | 73 | 22.8 | 81 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | Light | Light | ..... | ..... | D. clouds..... | |
| New Hampshire, Port Royal, S. C | 30.03 | 762.7 | 61 | 16.1 | 56 | 13.3 | 51 | N | 10 | 4.5 | ..... | ..... | 2 | ..... | W | 0 | 0 | ..... | ..... | Misty..... | |
| Omaha, N. 13° 35′, W. 53° 07′ | 30.14* | 765.5* | 82 | 27 8 | 81.5 | 27.5 | 70 | ENE | 3 | 1.3 | ..... | ..... | 3 | ..... | ENE | 0 | 0 | Mod'ate | NE | Bright ..... | |
| Onward, Callao, Peru | 30.00† | 762.0† | ..... | ..... | 73 | 22.8 | 90 | ESE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, N. 21° 35′, W. 97° 00′ | 30.01‡ | 762.2‡ | ..... | ..... | 72 | 22.2 | 95 | NNW | ..... | ..... | 1 | ..... | 2 | ..... | W | ..... | ..... | Mod'ate | NNW | Fair ..... | |
| Palos, Shanghai, China | 30.03* | 762.7* | 67 | 19.4 | 56 | 13.3 | 81 | NW | ..... | ..... | 3–4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Pensacola, Honolulu, H. I | 30.32 | 770.1 | 73 | 22.8 | 70 | 21.1 | 95 | NE | 2 | 0.9 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | ..... | Fair ..... | |
| Plymouth. Norfolk, Va | 29.96‡ | 761.0‡ | ..... | ..... | 37 | 2.8 | 71 | NNE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Powhatan, Port Royal, S, C | 29.93‡ | 760.2‡ | ..... | ..... | 58 | 14.4 | 94 | NW | 4.8 | 2.1 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Smooth | ..... | Misty..... | |
| Ranger. Amoy, China | 30.08* | 764.0* | ..... | ..... | 72 | 22.2 | 85 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Blue sky..... | |
| Rio Bravo, Brownsville, Texas | ..... | ..... | ..... | ..... | 61 | 16.1 | 100 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Foggy ..... | |
| Santee. Annapolis, Md | 29.93* | 760.2* | 48 | 8.9 | 27 | — 2.8 | ..... | NW | ..... | ..... | 6 | ..... | 4 | ..... | NW | 0.01 | 0.3 | ..... | ..... | Clear..... | |
| Saratoga, Washington, D. C | 29.82* | 757.4* | ..... | ..... | 29 | — 1.7 | 100 | WNW | ..... | ..... | 4 | ..... | 5 | ..... | W | Mod'ate | Mod'ate | ..... | ..... | Clear..... | |
| St. Louis, League Island, Pa | 29.75 | 755.6 | 53 | 11.7 | 24 | — 4.4 | 74 | NW | 27 | 12.1 | ..... | ..... | 8 | ..... | NW | 0.12 | 3.0 | ..... | ..... | Fair ..... | |
| Supply, Havre, France | 29.78 | 756.4 | 42 | 5.6 | 42 | 5.6 | 74 | NNW | ..... | ..... | 5 | ..... | 10 | ..... | N | ..... | ..... | ..... | ..... | Light rain.. | |
| Swatara, Cartagena, New Grenada | 29.99* | 761.7* | ..... | ..... | 83 | 28.3 | 87 | Calm | ..... | ..... | 0 | ..... | 6 | ..... | N&E | ..... | ..... | ..... | ..... | D. clouds..... | |
| Tennessee, N. 6° 20′, E. 82° 36′ | 29.92* | 760.0* | 86 | 30.0 | 87 | 30.6 | 84 | N | 12 | 5.4 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | Slight | NE | D. clouds..... | |
| Trenton, Piraeus, Greece | 29.87‡ | 758.7‡ | ..... | ..... | 62 | 16.7 | 88 | SW | ..... | ..... | 6 | ..... | 5 | ..... | SW | 0.1 | 3. | Mod'ate | SW | Squally ..... | |
| Tuscarora, N. 24° 15, 31″ W. 110° 20′ 47″ | 29.98 | 761.5 | 65 | 18.3 | 64 | 17.8 | 83 | SSE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Mod'ate | SSE | Clear..... | |
| Vandalia, Naples, Italy | 29 67‡ | 753.6‡ | ..... | ..... | 57 | 13.9 | 75 | SSW | ..... | ..... | 3 | ..... | 2 | ..... | SW | ..... | ..... | ..... | ..... | Fair ..... | |
| Wabash. Boston, Mass | 29.45‡ | 748.0‡ | ..... | ..... | 14 | —10.0 | ..... | W | 42 | 18.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level: corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | Character. | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |

### PACIFIC MAIL S. S. CO. MARINE SERIES.

Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Panama, Port Townsend, W. T. | | | 29.65* | 753.1* | | | | Calm | | | 0 | | 2 | | Calm | | | Fine | Capt. Seabury. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, Hong-Kong, China | | | | | 71 | 21.7 | | W | | | 3 | | 10 | | | | | Overcast | Capt. Maury. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Corrected for temperature and elevation; instrumental error not known.

### WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, N. 41° 17,' W. 59° 21' | | | 29.50† | 749.3† | 58 | 14.4 | 88 | S | | | 6 | | 8ck | | SSW | High | SSW | Fair | Capt. W. H. Thompson |
| S. S. Celtic, New York, N. Y. | | | 30.34† | 770.6† | 16 | — 8.9 | | NW | | | 4 | | 10 | NW | | | | D. clouds | Capt. B. Gleadell. |
| S. S. Germanic, N. 47° 43', W. 34° 01' | | | 30.28† | 769.1† | 50 | 19.0 | ?? | Var. | | | 2 | | | | NW | Long | NW | D. clouds | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Anerold.

### OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, N. 39° 44', E. 159° 44' | | | 29.89* | 759.2* | | | | ESE | | | 6 | | Heavy | | NW;E | Mod'ate | NW | Squally | Capt. John Metcalf. |
| S. S. Gaelic, N. 27° 33', E. 125° 00' | | | 29.97† | 761.2† | 64 | 17.8 | ?? | NE | | | 5 | | c | | NE | Short | NE | D. clouds | Capt. W. H. Kidley |
| S. S. Oceanic, N. 37° 49', W. 152° 32' | | | 29.89 | 759.2 | 51 | 10.6 | 86 | W | | | 3 | | 4 | | WNW | High | | D. clouds | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

### NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAME OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | Character | Direction From— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, St. George's Channel | | | 30.02† | 762.5† | 44 | 6.7 | 84 | NNE | | | 3 | | 5 | | NE | Light | ENE | Partly cl'dy | Captain Sargent. |
| S. S. Ohio, Philadelphia, Pa | | | 29.72 | 754.9 | 24.5 | —4.2 | 92 | WNW | | | 7 | | 0 | | | | | Clear | Captain Morrison. |
| S. S. Pennsylvania | | | | | | | | | | | | | | | | | | | Captain Harris. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. †Aneroid; unreliable, corrected for elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |

**ALLAN LINE MARINE SERIES.**

Furnished by the coöperation of A. Schumacher, & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Scandinavian | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.)**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Crisfield, Md. | | | 29.68 | 753.9 | 30 | — 1.1 | 78 | N | 28 | 12.5 | | | 2k | | N | | | Clear | Capt. James Jorgensen |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.81 | 757.2 | 17 | — 8.3 | 98 | SE | 3.1 | 1.4 | | | 10s | | Calm | | | Snowing | O. T. Sherman. |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. **Errata**:—From February 24 to March 24, 1878, inclusive, the force of the wind recorded by the schooner "Florence" has been erroneously published as velocity, the figures in the miles per hour column should be placed in force column, and the meters per second erased. On and after this date the velocity will be expressed in miles per hour and meters per second.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 26, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.07 | 763.8 | 62.1 | 16.7 | ..... | NE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Dr. Ollive. |
| Nemours | ..... | ..... | 30.10 | 764.4 | 63.1 | 17.3 | 78 | E | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Michel. |
| Algiers | ..... | ..... | 30.12 | 765.0 | 67.6 | 14.2 | 55 | NW | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Towlliere. |
| La Calle | ..... | ..... | 30.16 | 766.0 | 57.9 | 14.4 | 47 | NW | ..... | ..... | 7 | ..... | 6 | ..... | ..... | 0.12 | 3. | Cloudy | Boulangeot. |
| Tunis | ..... | ..... | 30.11 | 764.7 | 56.8 | 13.8 | 44 | NW | ..... | ..... | 9 | ..... | 6 | ..... | ..... | 0.067 | 1.7 | Cloudy | Jacques. |
| Sfax | ..... | ..... | 30.18 | 766.o | 64.4 | 18.0 | ..... | W | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Gau. |
| Saida | ..... | ..... | 30.26 | 768.6 | 63.1 | 17.3 | 83 | ENE | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Herbin. |
| Tebessa | ..... | ..... | 30.14 | 765.5 | ..... | ..... | ..... | N | ..... | ..... | 6 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Bourgeois. |
| Geriville | ..... | ..... | 30.21 | 767.2 | 60.8 | 16.0 | 85 | NW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair | Lemaillot. |
| Laghouat | ..... | ..... | 30.23 | 767.9 | 61.7 | 16.5 | 37 | W | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Guyot. |
| Biskra | ..... | ..... | 30.24 | 768.1 | 73.8 | 23.2 | 74 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,380 ? m.; or 4,461.7 ? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.12 | 739.7 | 29.69 | 754.0 | 36.7 | 2.6 | 75 | NE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0.028 | 0.7 | Rain & snow | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.04 | 737.6 | 29.83 | 757.7 | 35.6 | 2.0 | 78 | NE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbiski. |
| Eperies | 28.78 | 731.0 | 29.68 | 753.9 | 36.5 | 2.5 | 92 | N | ..... | ..... | 2 | ..... | 9k;s | ..... | S | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.47 | 723.2 | 29.75 | 755.6 | 41.0 | 5.0 | 45 | NNE | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0.156 | 3.95 | ..... | Andreas Rospini. |
| Hermannstadt | 28.08 | 713.1 | 29.53 | 750.1 | 34.9 | 1.6 | 87 | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.289 | 7.35 | Snowing | Prof. Reissenberg |
| Kremsmünster | 28.48 | 723.4 | 29.87 | 758.6 | 34.9 | 1.6 | 75 | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.150 | 3.8 | ..... | Prof. C. Wagner |
| Lemberg | 28.72 | 729.8 | 29.76 | 755.8 | 32.4 | 0.2 | 92 | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.157 | 4.0 | ..... | Dr. T. Stanecki. |
| Pola | 29.58 | 751.2 | 29.69 | 754.1 | 45.5 | 7.5 | 52 | NNE | ..... | ..... | 2 | ..... | 10s | ..... | ..... | 0.331 | 8.4 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.16 | 740.6 | 29.63 | 752.7 | 38.5 | 3.6 | 87 | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.146 | 3.7 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.24 | 742.7 | 29.52 | 749.9 | 45.1 | 7.3 | 83 | E | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Karl Stancel. |
| Trieste | 29.63 | 752.7 | 29.74 | 755.3 | 47.5 | 8 6 | 58 | NNE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Cloudy | P. Busin. |
| Vienna | 29.03 | 737.4 | 29.76 | 756.0 | 38.7 | 3.7 | 67 | NNW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0.094 | 2.4 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 843.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.50 | 723.8 | 30.05 | 763.3 | 37.0 | 2.8 | 77 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.024 | 0.6 | Light snow | Prof. M. Passau. |
| Brussels | 29.83 | 757.6 | 30.04 | 762.9 | 35.2 | 1.8 | 90 | W | ..... | ..... | 2 | ..... | 2 | ..... | WNW | 0.039 | 1.0 | ..... | Royal Observatory. |
| Furnes | 30.08 | 763.9 | 30.10 | 764.5 | 43.0 | 6.1 | 62 | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | M. E. de Cae. |
| Maeseyck | 29.85 | 758.1 | 29.97 | 761.3 | 34.9 | 1.6 | 97 | NNW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0.102 | 2.6 | Snowing | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

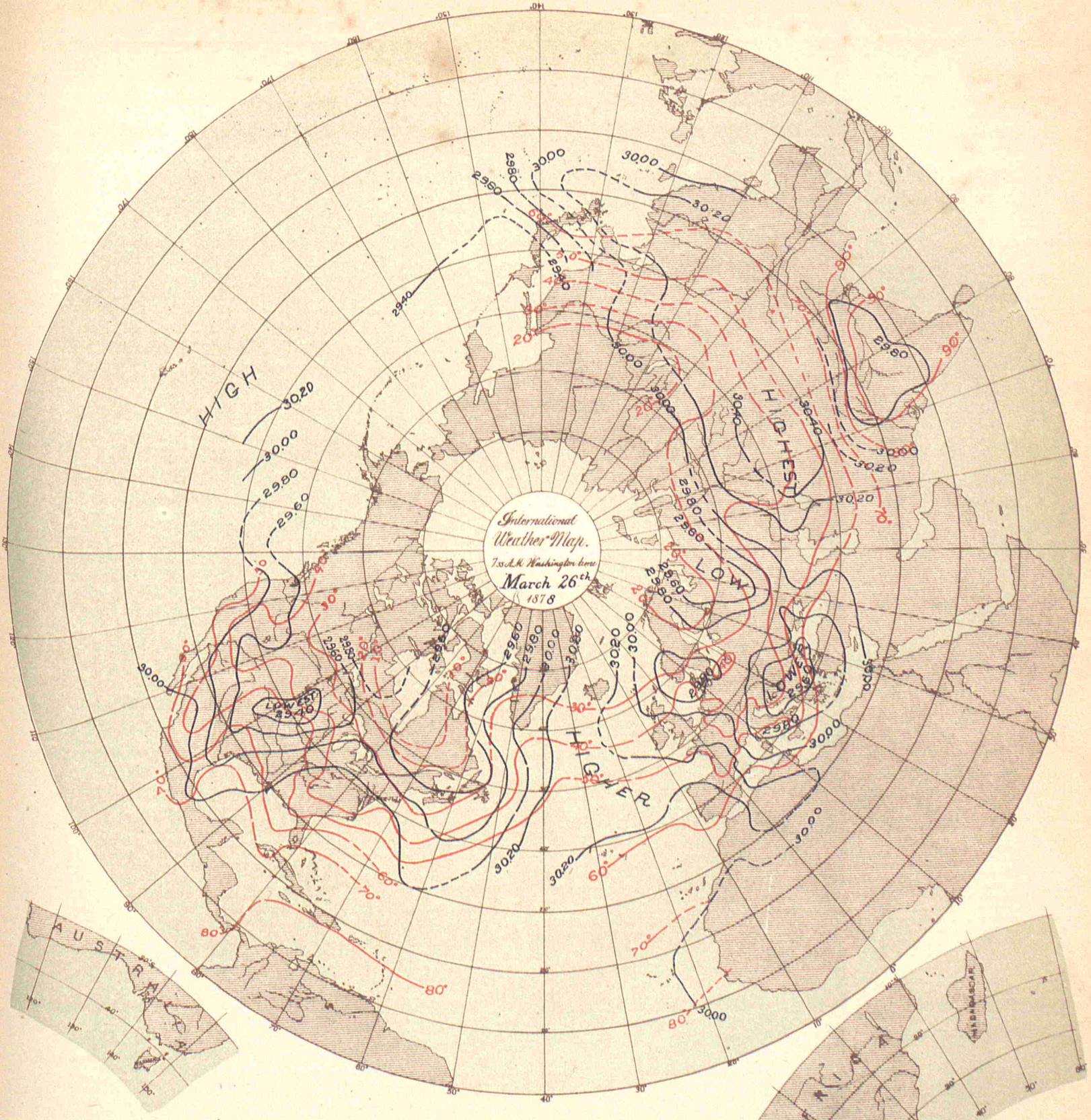
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E. Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.82 | 757.4 | 29.92 | 760.0 | 36.5 | 2.5 | ..... | WNW | 15 | 6.7 | ..... | ..... | 9 | ..... | ..... | 0.310 | 7.87 | Overcast..... | W. Boswell. |
| Ardrossan | 29.98 | 761.5 | 30.00 | 762.0 | 44 | 6.7 | ..... | W | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.11 | 764.8 | 45.0 | 7.2 | ..... | W | 12 | 5.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | S. Call, for Dr. Robinson. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.08 | 764.0 | 43.0 | 6.1 | ..... | WNW | 15 | 6.7 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 30.17 | 766.3 | 46.8 | 8.2 | ..... | WSW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | J. Dreyer. |
| Bradford, Yorkshire | 29.62 | 752.3 | 30.01 | 762.2 | 41.5 | 5.3 | ..... | N | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | D. clouds.... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.92 | 760.0 | 29.95 | 760.7 | 85.5 | 29.7 | ..... | NE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds.... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 30.05 | 763.3 | 48.0 | 8.9 | ..... | NW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds.... | H. Todd. [H.C. |
| Cardington | ..... | ..... | 30.07 | 763.8 | 46.6 | 8 1 | ..... | NW | ..... | ..... | 1 | ..... | 4 | ..... | ..... | Blank | Blank | D. clouds.... | John McLaren. |
| Chatham, School M. E. | 29.93 | 760.2 | 30.07 | 763.8 | 45.2 | 7.3 | ..... | NW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.64 | 727.4 | 30.16 | 766.1 | 39.2 | 4.0 | ..... | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | Alexander Watt. |
| Donaghadee | 30.03 | 762.7 | 30.06 | 763.5 | 46 | 7.8 | ..... | WSW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | J. Mac Gowan. |
| Dover | 30.06 | 763.5 | 30.09 | 764.3 | 42 | 5.6 | ..... | NW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Clear..... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 30.05 | 763.3 | 43.9 | 6.6 | ..... | NNW | 6.0 | 2.7 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | Thomas Mackereth. |
| Falmouth, Observatory | 29.95 | 760.7 | 30.18 | 766.6 | 46.0 | 7.8 | ..... | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff. |
| Fort Napier, (Natal) | 27.78 | 705.6 | 29.99 | 761.7 | 83.0 | 28.3 | ..... | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.67 | 753.6 | 29.90 | 759.4 | 89 | 31.7 | ..... | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | |
| Galway, Queen's College | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.07 | 763.8 | 30.12 | 765.0 | 60.2 | 15.7 | ..... | E | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | Corpl. C. Aitken, A. H. C. |
| Glasgow, Observatory | 29.76 | 755.9 | 29.96 | 761.0 | 42.9 | 6.1 | ..... | WSW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy..... | D. G. Maclean. |
| Great Yarmouth | 30.00 | 762.0 | 30.00 | 762.0 | 41 | 5.0 | ..... | NW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.90 | 759.4 | 30.08 | 764.0 | 44.5 | 6.9 | ..... | NW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff, for G. B. Airy. |
| Guernsey | 29.94 | 760.5 | 30.16 | 766.1 | 47 | 8.3 | ..... | WNW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | Dr. S. E. Hoskins, F. R. S. |
| Helston | ..... | ..... | 30.18 | 766.6 | 50 | 10.0 | ..... | NW | ..... | ..... | 4 | ..... | 3c | ..... | ..... | 0.17 | 4.3 | Fine..... | M. P. Moyle. |
| Holyhead | 30.05 | 763.3 | 30.11 | 764.8 | 45 | 7.2 | ..... | WNW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | John Tilston. |
| Jersey | 29.90 | 759.4 | 30.20 | 767.1 | 46.0 | 7.8 | ..... | WNW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 30.09 | 764.3 | 44.0 | 6.7 | ..... | WNW | 11 | 4.9 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff. |
| Kingstown | 30.12 | 765.0 | 30.15 | 765.8 | 44 | 6.7 | ..... | NW | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 30.06 | 763.5 | 43.9 | 6.6 | ..... | W | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | Wm. J. Harrison, F. G. S. |
| Malta, (Mediterranean) | 29.87 | 758.7 | 29.94 | 760 5 | 57.6 | 14.2 | ..... | W | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | Sgt. Fred. Travis, A. H. |
| Nairn | 29.80 | 756.9 | 29.89 | 759.2 | 33 | 0.6 | ..... | ENE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | W. D. Penny. [O. |
| Nassau, (Bahamas) | ..... | ..... | 30.02 | 762.5 | 74.0 | 23.3 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | C. S. Duncombe. |
| Nottingham, Observatory | 29.85 | 758.2 | 30.05 | 763.3 | 47.7 | 8.7 | ..... | NNW | ..... | ..... | 2 | ..... | 5k;ks | ..... | NNW | 0 | 0 | D. clouds.... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.54 | 750.3 | 30.07 | 763.8 | 43.7 | 6.5 | ..... | NW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.09 | 764 3 | 44 | 6.7 | ..... | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | Mr. Lucas. |
| Plymouth | 30.08 | 764.0 | 30.16 | 766.1 | 45.9 | 7.7 | ..... | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Merrifield. |
| Roche's Point | 30.11 | 764.8 | 30.16 | 766.1 | 46 | 7.8 | ..... | SW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | Fine..... | W. Kennedy. |
| Saint Ann's Head | 30.00 | 762.0 | 30.17 | 766.3 | 42 | 5.6 | ..... | NW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | John C. Walker. |
| Sandwick Manse, (Orkneys.) | ..... | ..... | 29.88 | 758.9 | 35.1 | 1.7 | ..... | N | 15 | 6.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snow-show's | Rev. C. Clouston, L. L. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.58 | 751.3 | 60.4 | 15.8 | ..... | SSW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | Blank | Blank | D. clouds.... | Sergt. W. H. Lyne. |
| Sheffield | 29.77 | 756.1 | 30.05 | 763.3 | 45.1 | 7.3 | ..... | W | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0.16 | 4.1 | D. clouds.... | Rev. F. W. Cooper. |
| Silloth Rectory | 29.98 | 761.5 | 30.01 | 762.2 | 47.7 | 8.7 | 60 | NW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0.130 | 3.30 | D. clouds.... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.64 | 752.8 | 30.05 | 763.3 | 40.8 | 4.9 | ..... | W | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | Blue sky..... | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 29.83 | 757.7 | 35 | 1.7 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | John Sutherland. |
| Stratfield Turgiss | 29.89 | 759.2 | 30.11 | 764.8 | 45.6 | 7.6 | ..... | W | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. C. H. Griffith, F. M. |
| Thurso | ..... | ..... | 29.87 | 758.7 | 35 | 1.7 | ..... | WNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 30.16 | 766.1 | 52 | 11.1 | ..... | NW | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 30.18 | 766.6 | 46.8 | 8.2 | ..... | WSW | 8 | 3.6 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.32 | 744.7 | 74.0 | 23.3 | 83 | N | ..... | ..... | 2 | ..... | 10n | ..... | ..... | 0 | 0 | Covered ..... | Francis Abbott, F. R. A. S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.73 | 755.1 | 29.91 | 759.8 | 82.9 | 28.3 | 68 | ENE | 14.5 | 6.5 | ..... | 4 | 2 | ..... | NE | 0.27 | 6.9 | Cloudy; fine | C. Meldrum. |
| Melbourne, Observatory | 29.55 | 750.6 | 29.64 | 752.8 | 69.0 | 20.6 | 86 | SSW | 2 | 0.9 | ..... | ..... | 3 | ..... | ..... | 0.01 | 0.3 | Lightning.... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1, 400 feet, or 426.7 meters; Fort Napier, 2,200 ft, or 670.6 m.

| MARINE SERIES. VESSELS. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Algeria | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. Cuto |
| Barque Maroon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. C. Prehn. [R. |
| S. S. Peruvian, N. 49° 0′, W. 37° 20′ | ..... | ..... | 30.22 | 767.6 | 53 | 11.7 | ..... | N | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 2 | SW | D. clouds.... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire, N. 39° 5′ W. 70° 55′ | ..... | ..... | 30.01 | 766 2 | 43 | 6.1 | ..... | WNW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 4 | NW | D. clouds.... | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'r 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.21 | 665.7 | | | 71.2 | 21.8 | 82 | E | | | 1 | 0c | 3s | | NE | 0 | 0 | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.70 | 754.3 | 29.74 | 755.5 | 37.8 | 3.2 | 68 | W | | | 2 | | 9 | | | | | | |
| Fanöe | 29.70 | 754.3 | 29.72 | 754.8 | 36.3 | 2.4 | 84 | W | | | 4 | | 5 | | | | | | |
| Godthaab, (Greenland) | 29.93 | 760.1 | 29.97 | 761.2 | 35.6 | 2.0 | 85 | Calm | | | 0 | | 10 | | | | | | |
| Stykkisholm, (Iceland) | 30.26 | 768.7 | 30.31 | 769.8 | 26.2 | — 3.2 | 91 | E | | | 4 | | 5 | | | | | | |
| Thorshavn, (Faröe) | | | | | | | | N | | | 2 | | | | | | | | |
| Vestervig | 29.47 | 748.6 | 29.64 | 752.9 | 39.9 | 4.4 | 80 | W | | | 4 | | 4 | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.60 | 749.3 | 30.05 | 763.3 | 44.6 | 7 | 94 | SW | | | 4 | | 5 | | | 0.059 | 1.5 | Cloudy | Collignon, Director. |
| Amiens, Normal School | 30.00 | 762.0 | 30.11 | 764.8 | 43.7 | 7.6 | 55 | W | | | 2 | | 2 | | NW | 0 | 0 | Slightly cl'dy | Bonvarne, Director. |
| Avignon, Normal School | 30.06 | 763.4 | 30.13 | 765.4 | 49.6 | 9.8 | 81 | N | | | 2 | | 2 | | N | 0 | 0 | Partly cl'dy | Mr. Giraud, Director |
| Bar-sur-Seine | 29.57 | 751.0 | 30.14 | 765.6 | 40.8 | 4.9 | 59 | NW | | | 2 | | 8k | | | 0.059 | 1.5 | Very cloudy | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 42.3 | 5.7 | 37 | NNW | | | 3 | | 8 | | NNW | 0 | 0 | Very cloudy | Normal School. |
| Besançon | 29.22 | 742.2 | 30.15 | 765.7 | 36.9 | 2.7 | 86 | NW | | | 3 | | 8 | | W | 0.283 | 7.2 | Very cloudy | Normal School. |
| Bourg-en-Bresse | 29.26 | 743.3 | 30.18 | 766.5 | 37.4 | 3 | 80 | W | | | 2 | | 5kn | | W | 0.20 | 5. | Cloudy | Normal School. |
| Bourges, Normal School | 29.58 | 751.3 | 30.15 | 765.8 | 42.4 | 5.8 | 91 | WNW | | | 1 | | 2 | | W | 0 | 0 | Slightly cl'dy | A. Wagner, Director. |
| Brest, Naval Observatory | 29.91 | 759.6 | 30.12 | 765.1 | 46.2 | 7.9 | 71 | Calm | | | 0 | | 5n | | Calm | 0 | 0 | | The Staff. |
| Carcassonne, Normal School | 29.82 | 757.5 | 30.25 | 768.4 | 45.3 | 7.4 | 93 | W | | | 2 | | 2 | | W | 0 | 0 | Slightly cl'dy | Vateau, Director. |
| Caen | 30.11 | 764.9 | 30.19 | 766.8 | 40.4 | 8 | 55 | NW | | | 2 | | 5 | | N | 0.246 | 6.25 | Cloudy | Normal School. |
| Chartres, Normal School | 29.58 | 751.3 | 30.16 | 766.1 | 43.6 | 6.4 | 94 | N | | | 2 | | 8 | | N | 0.071 | 1.8 | | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.76 | 755.9 | 30.09 | 764.2 | 41.7 | 5.4 | 66 | W | | | 3 | | 5k | | W | 0.016 | 0.4 | Cloudy | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.80 | 731.5 | 30.21 | 767.4 | 40.1 | 4.5 | 52 | N | | | 2 | | 8 | | NW | 0.122 | 3.1 | Very cloudy | Alluard, Director. |
| Commercy, Normal School | 29.18 | 741.2 | 30.10 | 764.5 | 36.3 | 2.4 | 79 | W | | | 4 | | 8 | | W | 0 | 0 | Very cloudy | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.93 | 734.8 | 30.07 | 763.8 | 43.5 | 6.4 | 51 | NW | | | 6 | | 2 | | NW | 0 | 0 | ¾ Covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 30.02 | 762.4 | 30.23 | 767.9 | 50.7 | 10.4 | 50 | NW | | | 2 | | 5 | | W | 0.039 | 1.0 | Cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.89 | 759.1 | 30.20 | 767.1 | 43.5 | 6.4 | 94 | NW | | | 6 | | 8 | | NW | 0.098 | 2.5 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.17 | 741.0 | 30.12 | 765.0 | 38.8 | 3.8 | 83 | NE | | | 2 | | 5 | | NE | 0.307 | 7.80 | Cloudy | Voudez, Director. |
| Lorient, Naval Observatory | 30.02 | 762.5 | 30.12 | 765.0 | 51.4 | 10.8 | 62 | W | | | 2 | | 8 | | W | 0 | 0 | ¾ covered | T. Carré, Director. |
| Mâcon, Normal School | 29.45 | 747.9 | 30.13 | 765.3 | 37.0 | 2.8 | 89 | Calm | | | 0 | | 5 | | | 0 | 0 | Cloudy | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | 29.03 | 737.4 | 30.12 | 765.0 | 37.4 | 3 | 63 | NW | | | 4 | | 2 | | SE | 0 | 0 | Slightly cov. | Normal School. |
| Nismes, Normal School | 29.87 | 758.6 | 30.07 | 763.7 | 50.4 | 10.2 | 35 | NW | | | 6 | | 5 | | NW | 0 | 0 | Cloudy | Boyer, Director. |
| Orleans, Normal School | 29.74 | 755.4 | 30.13 | 765.2 | 40.6 | 4.8 | 87 | | | | | | 8 | | | 0.12 | 3. | Very cloudy | Bernard, Director. |
| Paris, Observatory | 29.89 | 759.3 | 30.14 | 765.6 | 42.8 | 6.0 | 57 | W | | | 1 | | 9 | | | 0 | 0 | Almost cov'd | National Observatory. |
| Privas | 29.07 | 738.4 | 30.17 | 766.2 | 46.4 | 8 | 32 | N | | | 2 | | 5 | | N | 0 | 0 | Cloudy | Normal School |
| Puy de Dome (Summit) | | | | | | | | | | | | | | | | | | | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.24 | 768.2 | 30.28 | 769.0 | 54.0 | 12.2 | 54 | W | | | 3 | | 0 | | | 0 | 0 | Clear | Lt. Decante, Director. |
| Rouen, Normal School | 30.06 | 763.5 | 30.15 | 765.7 | 44.8 | 7.1 | 45 | NW | | | 6 | | 5 | | N | 0.299 | 7.6 | Cloudy | F. Lucard, Director. |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | M. H. Hercouet. |
| Tarbes, Normal School | 29.12 | 739.6 | 30.23 | 767.7 | 48.2 | 9 | 61 | SW | | | 2 | | 10 | | | 0 | 0 | Covered | T. Hugues, Director. |
| Villefranche | 29.45 | 748.1 | 30.19 | 766.8 | 43.7 | 6.5 | 62 | NW | | | 2 | | 5 | | S | 0.094 | 2.4 | Cloudy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.81 | 757.1 | 29.84 | 757.8 | 80.6 | 27 | | | | | | | | | | 0 | 0 | | L'Abbé Marchési. |
| Lyons | | | 30.15 | 765.8 | 44.8 | 7.1 | | | | | | | 7 | | | 0.012 | 0.3 | | M. Jeys. |
| Marseilles, Observatory | | | 30.03 | 762.8 | 47.8 | 8.8 | 27 | NW | | | 6 | | 2 | | | 0 | 0 | Partly cl'dy | The Staff. |
| Mont-Louis | 24.87 | 631.7 | 30.19 | 766.7 | 32.5 | 0.3 | 38 | W | 18.6 | 8.33 | | | 1 | | W | 0.157 | 4.0 | | Mr. Falguère. |
| Nice | 29.73 | 755.1 | 29.81 | 757.1 | 55.9 | 13.3 | 16 | NW | | | 2 | | 1 | | NW | 0 | 0 | Clear | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.85 | 758.1 | 30.12 | 765.1 | 43.2 | 6.2 | 55 | W | | | 2 | | 8 | | WNW | 0 | 0 | | Marié Davy, Director. |
| Perpignan | | | 30.25 | 768.4 | 48.6 | 9.2 | 42 | N | 26.1 | 11.67 | | | 4 | | NW | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.43 | 569.6 | | | 23.0 | — 5.0 | | N | | | 1 | | 4 | | | 0.476 | 12.1 | Snowy | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.97 | 761.2 | 30.13 | 765.4 | 46.4 | 8.0 | 60 | NW | | | 1 | | 9 | | NW | | | Snowing | E. Renou. |
| Toulouse, Observatory | 29.56 | 750.9 | 30.20 | 769.4 | 45.9 | 7.7 | 38 | NW | | | 4 | | 6 | | | 0 | 0 | | The Staff. |
| Tours | 29.80 | 756.8 | 29.99 | 761.8 | 48.2 | 9.0 | 48 | W | | | 3 | | 8 | | N | 0.150 | 3.8 | | C. Marquet. |
| Versailles, (near Paris) | | | 30.17 | 766.3 | 44.2 | 6.8 | 42 | NW | | | 2 | | 7 | | | 0 | 0 | Fair | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.22 | 767.6 | 30.24 | 768.2 | 45.3 | 7.4 | 73 | E | 4.0 | 1.8 | | | 2 | | | 0 | 0 | Clear | Mare Iechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,866 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 185 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | W | | | 1 | | 10 | | | 0.255 | 6.48 | | Prof. Dr. Hoh. |
| Berlin | 29.66 | 753.4 | 29.84 | 757.9 | 37.8 | 3.2 | 86 | SE | | | 1 | | 1 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.30 | 744.2 | 29.83 | 757.6 | 36.3 | 2.4 | 89 | NW | | | 1 | | 5 | | | 0.020 | 0.5 | | Royal University Obs'y |
| Carlsruhe | 29.56 | 760.9 | 30.00 | 762.1 | 40.3 | 4.6 | 55 | NW | | | 5 | | 10 | NNW | | 0.079 | 2.00 | | Albert Senz. |
| Cassel | 29.33 | 745.0 | 29.94 | 760.4 | 40.8 | 4.9 | 75 | NW | | | 5 | | 6k | | | 0.12 | 3. | | Dr. H. Möhl. |
| Crefeld | 29.76 | 755.9 | 29.92 | 760.0 | 42.4 | 5.8 | 62 | WNW | | | 3 | | 2 | | | 0 | 0 | | Director Lose. |
| Emden | 29.89 | 759.1 | 29.92 | 760.0 | 42.6 | 5.9 | 52 | NW | | | 2 | | 6 | | | 0.035 | 0.9 | | Prof. Prestel. |
| Frankfort on the Main | 29.61 | 752.0 | 29.98 | 761.5 | 43.9 | 6.6 | 45 | NNW | | | 9 | | 10 | NNW | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 28.54 | 724.9 | 30.04 | 763.1 | 30.9 | — 0.6 | 96 | WSW | | | 4 | | 7ks | | | 0.004 | 0.1 | Fine | M. Wilhelm. |
| Hamburg | 29.76 | 755.8 | 29.83 | 757.6 | 39.2 | 4.0 | 66 | W | | | 3 | | 7 | | | 0 | 0 | | Captain F. Hegemann. |
| Kiel | 29.76 | 755.8 | 29.77 | 756.2 | 39.2 | 4.0 | 62 | SW | | | | | | | | 0.001 | 0.02 | Fair | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.80 | 756.9 | 29.88 | 758.9 | 40.3 | 4.6 | 49 | S | | | 2 | | 3 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 29.75 | 755.6 | 42.1 | 5.6 | | S | | | 3 | | 8 | WNW | | 0.020 | 0.5 | | H. Müller. |
| Leipsic, Observatory | 29.43 | 747.6 | 29.87 | 758.6 | 37.2 | 2.9 | 74 | NW | | | 1 | | 4cs | | | | | | Prof. Bruhns. |
| Memel, Naval School | 29.85 | 758.2 | 29.90 | 759.4 | 33.4 | 0.8 | 63 | W | | | 2 | | 5 | S | | 0 | 0 | | Reinbrecht von Skalweit. |
| Neufahrwasser | 29.83 | 757.6 | 29.84 | 758.0 | 39.7 | 4.3 | 63 | E | | | 5 | | 10 | | | 0.033 | 0.83 | Covered | A. Lothes. |
| Posen | 29.57 | 751.1 | 29.87 | 758.7 | 37.8 | 3.2 | 81 | S | | | 5 | | 5 | NNW | | 0.012 | 0.30 | Rain; graupel | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.50 | 749.2 | 30.07 | 763.6 | 40.6 | 4.8 | 49 | NNW | | | 4 | | 5 | NW | | | | Snowing | Dr. Schur. |
| Stuttgart | 29.01 | 736.8 | 29.98 | 761.5 | 37.0 | 2.8 | 62 | N | | | 1 | | 5 | | | | | | Prof. Schoder. |
| Treves, (Trier) | 29.41 | 747.0 | 29.93 | 760.2 | 39.7 | 4.3 | 53 | W | | | 5 | | 10 | | | 0.026 | 0.67 | Foggy | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.38 | 720.8 | 29.95 | 760.7 | 31.6 | — 0.2 | 90 | WNW | 2 | 1 | | | 10 | | NW | 0.008 | 0.2 | Covered | Dr. Von Bebber. |
| Wustrow, Naval School | 29.80 | 756.9 | 29.83 | 757.7 | 37.2 | 2.9 | 87 | NNW | | | 2 | | 4 | | | 0.037 | 0.94 | Fair | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.26 | 743.2 | 29.65 | 753.0 | 66.2 | 19.0 | | W | | | 5.5 | | | | | | | Clear | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.84 | 757.8 | 29.89 | 759.1 | 82.5 | 28.1 | 65 | WSW | 25.07 | 11.27 | | | 1 | | | 0 | 0 | D. clouds | |
| Deesa | 29.38 | 746.1 | 29.84 | 757.8 | 98.1 | 36.7 | 26 | Calm | | | | | 6 | W | | 0 | 0 | D. clouds | |
| Bombay | 29.79 | 756.7 | 29.83 | 757.6 | 82.7 | 28.2 | 76 | NW | 19.0 | 8.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.80 | 706.2 | 29.74 | 755.5 | 94.7 | 34.8 | 36 | W | | | | | 5 | | NW | 0 | 0 | Dust-whirl | |
| Lahore | 29.05 | 737.9 | 29.78 | 756.5 | 86.5 | 30.3 | 42 | Calm | 2.2 | 1.0 | | | 10 | | | 0 | 0 | Cloudy | |
| Belgaum | 27.35 | 694.6 | 29.83 | 757.8 | 87.6 | 30.9 | 45 | W | 10.0 | 4.5 | | | 1 | | E | 0 | 0 | Misty | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.89 | 733.7 | 29.76 | 756.0 | 91.8 | 33.2 | 30 | Calm | 0.6 | 0.3 | | | 10 | | | 0 | 0 | | |
| Agra | 29.24 | 742.8 | 29.79 | 756.7 | 94.6 | 34.8 | 27 | W | | | | | | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.76 | 730.5 | 29.76 | 756.0 | 99.4 | 37.4 | 19 | S | 3.6 | 1.6 | | | | | | 0 | 0 | Blue sky | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.33 | 745.1 | 29.70 | 754.2 | 93.5 | 34.2 | 76 | WSW | 1.0 | 0.4 | | | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.46 | 748.2 | 29.76 | 755.9 | 94.8 | 34.9 | 31 | Calm | 0.7 | 0.3 | | | 10 | | | 0 | 0 | Overcast | |
| Patna | 29.57 | 751.2 | 29.75 | 755.6 | 98.0 | 36.7 | 22 | W | 1.7 | 0.8 | | | 4 | W | W | 0 | 0 | D. clouds | |
| Hazaribagh | 27.82 | 706.6 | 29.79 | 756.6 | 89.8 | 32.1 | 18 | NW | 6.6 | 2.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.75 | 755.7 | 29.83 | 757.8 | 90.2 | 32.3 | 41 | S | 4.7 | 2.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.80 | 756.8 | 29.82 | 757.4 | 86.2 | 30.1 | 54 | SW | 8.0 | 3.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.42 | 747.2 | 29.80 | 757.0 | 89.2 | 31.8 | 20 | SSW | 3.0 | 1 3 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.81 | 757.1 | 29.90 | 759.4 | 82.4 | 28.0 | 75 | WSW | 5.6 | 2.5 | | | 0 | | | 0 | 0 | D. clouds | |
| Sibsagar | 29.54 | 750.2 | 29.87 | 758.8 | 77.1 | 25.1 | 76 | ENE | 1.3 | 0.6 | | | 8 | SW | SW | 0 | 0 | | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.56 | 725.5 | 29.90 | 759.3 | 94.5 | 34.7 | 37 | NE | 2.6 | 1.2 | | | | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum't'al error and temperature. Inches. | Barometer. Corrected for instrum't'al error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 28.28 | 743.7 | 29.70 | 754.3 | 47.3 | 8.5 | 20 | W | 0.7 | 0.3 | | | 10 | | | 0.035 | 0.9 | | Prof. Giovanni Codig. |
| Padua | 29.62 | 752.4 | 29.73 | 755.2 | 45.9 | 7.7 | 42 | WSW | 16.8 | 7.5 | | | 10 | | | 0 | 0 | | Prof. Dott. Lorenzoni |
| Vicenza | 29.54 | 750.3 | 29.74 | 755.3 | 46.2 | 7.9 | 45 | W | 8.1 | 3.6 | | | 9 | W | | 0 | 0 | | Conte Alm. Da Schio. |
| Bergamo | 28.45 | 722.6 | 29.78 | 756.5 | 46.8 | 8.2 | 11 | W | | | 4 | | 2 | | | 0 | 0 | | Prof. Trionfini Carlo. |
| Milan | 29.30 | 744.2 | 29.83 | 757.6 | 50.4 | 10.2 | | N | | | 6 | | 3 | | | 0 | 0 | | Prof. Schiaparelli. |
| Moncalieri | 28.95 | 735.4 | 29.87 | 758.7 | 48.7 | 9.3 | 16 | WNW | 11.2 | 5.0 | | | 5 | | | 0 | 0 | | Prof. P. F. Denza. |
| Mondovi | 27.88 | 708.2 | 29.82 | 757.3 | 44.2 | 6.8 | 12 | NW | | | 8 | | 0 | | | 0 | 0 | | Prof. D. C. Bruno. |
| Porto Maurizio | 29.61 | 752.2 | 29.84 | 757.9 | 54.3 | 12.4 | 11 | NW | | | 4 | | 4 | E | | 0 | 0 | | Prof. L. Vassallo. |
| Genoa | 29.65 | 753.0 | 29.82 | 757.4 | 53.2 | 11.8 | 8 | N | 9.4 | 4.2 | | | 8 | N | | 0 | 0 | | Prof. G. M. Garibaldi. |
| Parma | 29.50 | 749.3 | 29.83 | 757.6 | 50.9 | 10.5 | 34 | NNW | | | 8 | | 2 | | | 0 | 0 | | Prof. P. Pigorini. |
| Florence | 29.54 | 750.3 | 29.80 | 756.9 | 46.4 | 8.0 | 51 | NE. | | | 4 | | 7 | | | 0.157 | 4.0 | | Cav. F. Meucci. |
| Leghorn | 29.68 | 753.9 | 29.77 | 756.1 | 48.9 | 9.4 | 35 | WNW | 5.6 | 2.5 | | | 3 | | | 0 | 0 | | Prof. P. Monte. |
| Pesaro | 29.71 | 754.5 | 29.76 | 755.8 | 41.5 | 5.3 | 73 | N | 19.9 | 8.9 | | | 10 | N | | 0.134 | 3.4 | | Prof. Luigi Guidi. |
| Urbino | 28.19 | 716.0 | 29.76 | 755.8 | 35.6 | 2.0 | 73 | NW | | | 2 | | 10 | | | 0.343 | 8.7 | | Prof. P. Serpieri. |
| Grosseto | 29.65 | 753.0 | 29.76 | 755.9 | 51.1 | 10.6 | 57 | NNW | | | 4 | | 4 | SE | | 0 | 0 | | Avv. P. Ponticelli. |
| Rome | 29.59 | 751.5 | 29.76 | 756.0 | 50.0 | 10.0 | 37 | N | 15.0 | 6.7 | | | 10 | | | 0.295 | 7.5 | | Prof. P. G. S. Ferrari. |
| Naples, O. U | 29.52 | 749.7 | 29.72 | 754.8 | 50 4 | 10.2 | 41 | WNW | | | 6 | | 6 | W | | 0.197 | 5.0 | | Prof. L. Palmieri. |
| Lecce | | | | | 50.5 | 10.3 | 42 | WNW | 19.9 | 8.9 | | | 8 | W | | 0.020 | 0.5 | | Prof. C. De Giorgi. |
| Cagliari | 29.76 | 756.0 | 29.96 | 760.9 | 49.8 | 9.9 | 40 | NW | | | 6 | | 9 | W | | 0.110 | 2.8 | | Prof. A. Pacinotti. |
| Cosenza | 28.86 | 733.1 | 29.76 | 755.8 | 46.4 | 8.0 | 80 | SW | 13.7 | 6.1 | | | 10 | | | 0.661 | 16.8 | | Prof. F. D. Conti. |
| Palermo | 29.56 | 750.8 | 29.82 | 757.3 | 52.2 | 11.2 | 33 | W | 25.6 | 11.4 | | | 9 | W | | 0.024 | 0.6 | | Prof. G. Cacciatore. |
| Syracuse | 29.74 | 755.3 | 29.81 | 757.2 | 57.6 | 14.2 | 49 | WNW | | | 8 | | 6 | WNW | | 0 | 0 | | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.17 | 741.0 | 29.73 | 755.1 | 49.1 | 9.5 | 49 | WSW | 15.0 | 6.7 | | | 7 | W | | 0 | 0 | | Prof. F. Brioschi |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.8 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 29.54 | 750.3 | 29.61 | 752.1 | 47.9 | 8.8 | 54 | N | 14.1 | 6.3 | | 0 | 0 | | | 0 | 0 | Clear | The Observatory. |
| Tokei (Yeddo) University | 29.48 | 748 8 | 29.58 | 751.2 | 48.3 | 9.1 | 53 | NNW | 14 | 6.3 | | | | | | 0.31 | 7.9 | Clear | Prof. P. V. Veeder. |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | | | | | | | | | | | | | | | | | | | I. N. Marin, M. D. |
| Córdoba | | | | | | | | | | | | | | | | | | | C. Peña, M. D. |
| Cuernavaca | | | | | | | | | | | | | | | | | | | L. Castillo, A. E. |
| Guadalajara | 25.00 | 635.1 | 30.06 | 763.6 | 43.2 | 6.2 | 53 | W | 0.9 | 0.4 | | 0 | 5 | | SW | 0 | 0 | ⅜ cloudy | Prof. L. Perez. |
| Guanajuato | 23.63 | 600.3 | 29.88 | 759.0 | 57.2 | 14.0 | 50 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Fair | Prof. V. Fernandez |
| Leon | | | | | 53.2 | 11.8 | 43 | N | 0.9 | 0.4 | | 1cs | 0 | | SW | 0 | 0 | Blue sky | Prof. M. Leal. |
| Mexico | 23.03 | 585.0 | 30.16 | 765.9 | 48.6 | 9.2 | 48 | Calm | 0 | 0 | | 2c | 0 | SW | | 0 | 0 | Slightly fo'gy | Central Observatory. |
| Orizaba | | | | | | | | | | | | | | | | | | | N. N. |
| Orizaba | | | | | | | | | | | | | | | | | | | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | | | | | 50.5 | 10.3 | 52 | NE | 0.9 | 0.4 | | 1ks | 0 | SW | | 0 | 0 | Clear | M. V. de Leon, M. E. |
| Puebla | 23.32 | 592.2 | 30.08 | 763.9 | 43.5 | 6.4 | 68 | E | 7.2 | 3.2 | | 0 | 0 | | | 0 | 0 | Clear | Prof. B. Gonzales. |
| Toluca | | | | | | | | | | | | | | | | | | | Prof. C. Velazquez. |
| Tlacotalpam | 29.86 | 758.4 | 29.87 | 758.7 | 67.0 | 19.5 | 88 | S | 0.9 | 0.4 | | 0 | 0 | | | 0 | 0 | Foggy | Prof. F. R. Bayly. |
| San Luis Potosi | | | | | | | | | | | | | | | | | | | G. Barroeta, M. D. |
| Vera-Cruz | 29.87 | 758.6 | 29.89 | 759.3 | 68.9 | 20.5 | 81 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Dry fog | Prof. J. Rossell. |
| Zacatecas | | | | | 49.1 | 9.5 | 72 | SW | 5.1 | 2.3 | | 3c | 0 | | | 0 | 0 | Clear | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | | | | | | | | | | | | | | | | | | | P. Spina. [M. M. D. D. |
| Morelia | | | | | | | | | | | | | | | | | | | M. Tena, F. L. Param. |
| Durango | | | | | | | | | | | | | | | | | | | M. V. de Leon, C. E. |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,934.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.04 | 763.0 | 30.04 | 763.0 | 41.4 | 5.2 | | NW | | | 4 | | | | | 0.150 | 3.8 | | |
| Groningen | 29.83 | 757.6 | 29.88 | 759.0 | 40.3 | 4.6 | | NW | | | 4 | | | | | 0.067 | 1.7 | | |
| Helder | 29.93 | 760.1 | 29.93 | 760.1 | 39.6 | 4.2 | | WNW | | | 4 | | | | | 0.068 | 1.6 | | |
| Hellevoetsluis | 30.00 | 762.1 | 30.00 | 762.1 | 42.1 | 5.6 | 70 | WNW | | | 3 | | | | | | | | |
| Utrecht | 29.93 | 760.1 | 29.97 | 761.3 | 42.6 | 5.9 | 64 | WNW | | | 4 | | 2 | | | 0.071 | 1.8 | Light cloudy | H. v d Brink. |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instru.n'tal error and temperature. Inches. | Barometer. Corrected for instru.n'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.63 | 752.5 | 29.68 | 753.9 | *32 0 | 0.0 | 38 | N | 6.5 | 2.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.32 | 757.5 | 29.86 | 758.5 | 24.1 | — 4.4 | 63 | NE | 18 | 8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.55 | 750.6 | 29.71 | 754.5 | 28.2 | — 2.1 | 77 | NE | 11 | 5 | ..... | ..... | 10 | ..... | ..... | 0.051 | 1.3 | Snowing | |
| Tromsö | 29.78 | 756.3 | 29.82 | 757.4 | 21.2 | — 6.0 | 69 | E | 4 | 2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.87 | 758.7 | 30.07 | 763.6 | 57.2 | 14.0 | 82 | NNW | 9.4 | 4.2 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.14 | 740.2 | 30.17 | 766.4 | 59.0 | 15.0 | 41 | E | 13.6 | 6.1 | ..... | ..... | 8 | E | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 29.98 | 761.6 | 30.07 | 763.6 | 64.2 | 17.9 | 52 | SE | 3.1 | 1.4 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.77 | 756.1 | 30.13 | 765.3 | 55.0 | 12.8 | 58 | ENE | 3.8 | 1.7 | ..... | ..... | 9 | WSW | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 29.95 | 760.6 | 30.03 | 762.8 | 60.4 | 15.8 | 67 | N | 18.1 | 8.1 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.71 | 754.5 | 29.71 | 754.7 | 86.0 | 30.0 | ..... | SSW | ..... | ..... | 1 | ..... | 4 | ..... | SSW | 1 | ..... | Blue sky | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Sado, Porto Praya, Cape Verde Islands | 30.00* | 762.0* | 30.01* | 762.3* | 83.7 | 28.7 | ..... | SW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 1 | ..... | D. clouds | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.77 | 756.1 | 29.77 | 756.2 | ..... | ..... | ..... | NW | ..... | ..... | 1 | ..... | 1 | ..... | NW | 1 | ..... | Blue sky | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreira, dos Amas, Com' |

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.40 | 746.8 | 29.84 | 757.8 | 37.8 | 3.2 | 66 | SSE | 7 | 3 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.47 | 748.4 | 29.90 | 759.5 | 32.9 | 0.5 | 49 | W | 2 | 1 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Heavy clouds | Astronomical Obs. |
| Dorpat | 29.55 | 750.5 | 29.80 | 756.9 | 25.5 | — 3.6 | 78 | WNW | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.66 | 753.4 | 29.68 | 753.8 | 22.6 | — 5.2 | 76 | NW | 16 | 7 | ..... | ..... | 8ks;n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.37 | 746.0 | 29.71 | 754.6 | 18.3 | — 7.6 | 100 | N | 13 | 6 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Ch. Forsten. |
| Kieff | 29.18 | 741.2 | 29.84 | 757.8 | 36.9 | 2.7 | 55 | NNE | 4 | 2 | ..... | ..... | 5c;k;ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.78 | 756.4 | 29.85 | 758.2 | 50.4 | 10.2 | 55 | NE | 18 | 8 | ..... | ..... | 8n | ..... | ..... | ..... | ..... | Light clouds | Kurdakof. |
| Kertch | 29.82 | 757.3 | 29.84 | 757.8 | 54.9 | 12.7 | 77 | S | 2 | 1 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Light clouds | Lagorio. |
| Moscow | 29.03 | 737.4 | 29.60 | 751.8 | 29.3 | — 1.5 | 78 | SSW | 9 | 4 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | Snowing | Meteorological Obs. |
| Lugan | 29.61 | 752.0 | 29.81 | 757.2 | 48.6 | 9.2 | 75 | E | 2 | 1 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Meteorological Obs. |
| Archangel | 29.47 | 748.4 | 29.48 | 748.9 | 19.4 | — 7.0 | 89 | N | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.57 | 725.7 | 29.97 | 761.2 | 62.1 | 16.7 | 21 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.23 | 767.8 | 30.15 | 765.7 | 41.0 | 5.0 | 76 | SE | 7 | 3 | ..... | ..... | 9k | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Kasan | 29.54 | 760.2 | 29.81 | 757.2 | 38.8 | 3.8 | 80 | S | 20 | 9 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 29.12 | 739.6 | 30.08 | 764.0 | 44.8 | 7.1 | 48 | SW | 4 | 2 | ..... | ..... | 4c;cs | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.92 | 759.9 | 30.16 | 765.9 | 45.7 | 7.6 | 86 | NW | 7 | 3 | ..... | ..... | 10k | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.67 | 728.1 | 30.41 | 772.4 | 49.1 | 9.5 | 70 | Calm | 0 | 0 | ..... | ..... | 4k | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.80 | 756.9 | 30.35 | 770.8 | 34.3 | 1.3 | 82 | SW | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.67 | 753.5 | 30.00 | 762.1 | 32.2 | 0.1 | 94 | W | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Krotkowo* | 29.47 | 748.6 | 29.96 | 760.9 | 43.0 | 6.1 | 75 | S | 20 | 9 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Peking, (China) | 29.93 | 760.3 | 30.08 | 763.9 | 55.0 | 12.8 | 24 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.83 | 706.9 | 30.04 | 763.1 | 11.7 | —11.3 | 36 | NW | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 20.3 | — 6.5 | 82 | E | 20 | 9 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | ..... | ..... | 30.06 | 763.5 | 50.4 | 10.2 | 45 | SSW | 8.4 | 1.50 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Ar.tonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.23 | 767.7 | 30.28 | 769.2 | 52.5 | 11.4 | 64 | E | 3.5 | 1.56 | ..... | 2 | 3 | SE | ..... | 0.197 | 5.0 | Cloudy | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.81 | 680.9 | ..... | ..... | 46.8 | 8.2 | 62 | NE | 7.2 | 3.23 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.94 | 709.8 | 30.19 | 766.8 | 55.8 | 13.2 | 36 | SW | 3.7 | 1.67 | ..... | 0 | 8 | ..... | ..... | 0 | 0 | Cloudy | The Staff. |
| Murcia, Met. Obs'y | 30.08 | 764.1 | 30.23 | 767.9 | 65.3 | 18.5 | 42 | NE | 2.6 | 1.17 | ..... | 1 | 1 | E | ..... | 0 | 0 | Almost clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.19 | 741.5 | 30.09 | 764.2 | 59.2 | 15.1 | 41 | SE | 3.1 | 1.39 | ..... | 9 | 0 | Calm | ..... | Inap. | Inap. | Almost cov. | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.97 | 761.1 | 30.03 | 762.8 | 66.2 | 19.0 | 88 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 30.01 | 762.3 | 30.11 | 764.8 | 64.4 | 18.0 | 44 | E | 37.7 | 16.9 | ..... | 1 | 2 | W | E | 0 | 0 | ..... | Capt. C. Pulazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.90 | 759.4 | 29.99 | 761.7 | 78.4 | 25.8 | 83 | SE | 0 | 0 | ..... | 2s | 1k | SE | SE | 0 | 0 | Clear | Leonardo de Tejeda, Chief of Engineers. |

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft. The barometer readings at Barcelona are published as given.

## SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.85 | 758.1 | 29.89 | 759.1 | 16.2 | — 8.8 | ..... | N | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0. | 0 | ..... | |
| Umea | 29.85 | 758.1 | 29.90 | 759.4 | 22.6 | — 5.2 | 100 | NE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0.031 | 0.8 | ..... | |
| Hernosand | 29.87 | 758.6 | 29.92 | 759.9 | 24.1 | — 4.4 | 75 | N | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.69 | 754.1 | 29.87 | 758.6 | 29.5 | — 1.4 | 76 | NNE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0.008 | 0.2 | ..... | |
| Wisby | 29.76 | 755.8 | 29.82 | 757.3 | 32.4 | 0.2 | 74 | SE | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.77 | 756.1 | 29.84 | 758.0 | 29.3 | — 1.5 | 55 | NW | 3.8 | 1.7 | ..... | ..... | 7 | ..... | NE | 0 | 0 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.66 | 728.0 | 30.14 | 765.6 | 36.1 | 2.3 | 61 | WNW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.146 | 3.7 | Covered | The Observatory. |
| Zurich | 28.36 | 720.4 | 30.08 | 764.0 | 31.6 | — 0.2 | 87 | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +3.6 mm.; Thermometer, —6.8 cent.; Relative Humidity, +2 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.65 | 753.1 | 63.7 | 17.6 | 49 | SW | 13 | 6.0 | ..... | ..... | 2 | ..... | SW | 0.260 | 6.6 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stéfanidès. |
| Valona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. Bertrand. |
| Varna | ..... | ..... | 29.66 | 753.3 | 49.3 | 9.6 | ..... | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.67 | 17. | Rain & hail. | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria.) Lee Obs'y | 29.91 | 759.7 | 30.02 | 762.6 | 64.9 | 18.3 | 66 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | Imperial Observatory. |
| | | | | | | | | | | | | | | | | | | | Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.46 | 748.3 | 29.53 | 750.0 | 25.7 | — 3.5 | 68 | SW | 4 | 1.8 | ..... | 3k | 0 | SW | ..... | ..... | ..... | Fine | Hon. J. Ferguson. |
| Brockville, Ontario | 29.55 | 750.6 | 29.87 | 758.7 | 30 | — 1.1 | ..... | W | 1 | 0.4 | ..... | ..... | 10s | ..... | W | 0.05 | 1.3 | Cloudy | W. R. Bigg. |
| *Chatham, N B | 29.49 | 749.0 | 29.55 | 750.6 | 22 | — 5.6 | 79 | S | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | G. A. Blair. |
| Charlottetown, P. E. Island | 29.69 | 751.6 | 29.68 | 752.6 | 26 | — 3.3 | 67 | SW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.57 | 751.1 | 29.77 | 756.1 | 26.2 | — 3.1 | 81 | NW | ..... | ..... | 2 | ..... | 10s | ..... | ..... | 0 | 0 | Threatening | James Smith, M. A. |
| Dalhousie, N. B | 29.44 | 747.8 | 29.47 | 748 5 | 24.5 | — 4.1 | 70 | SW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.10 | 2.5 | Clear | H. A. Johnson. |
| Esquimault, B. C | 29.56 | 750.8 | 29.60 | 751.8 | 49.3 | 9.6 | 100 | SW | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0.47 | 11.9 | Rainy | W. H. Bevis. |
| *Father Point, Quebec | 29.40 | 746.7 | 29.42 | 747.3 | 23 | — 5.0 | 86 | W | 45 | 20.1 | ..... | ..... | 10s | ..... | W | 0.28 | 7.1 | Clearing | J. McWilliams. |
| Fredericton, N. B | 29.60 | 751.8 | 29.67 | 753.6 | 25.2 | — 3.8 | 61 | SW | 12 | 5.4 | ..... | 7ck | 0 | W | ..... | 0 | 0 | Cloudy | Prof. Harrison. |
| *Fort Garry Manitoba | 28.72 | 729.5 | 29.57 | 751.1 | 30 | — 1.1 | 89 | NW | 2 | 0.9 | ..... | 2ck | Haze | NW | NW | 0 | 0 | Fair | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.81 | 731.8 | 29.96 | 761.0 | 28.2 | — 2.1 | 98 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Grant. |
| *Halifax, N. S | 29.55 | 750.6 | 29.69 | 754.1 | 28 | — 2.2 | 92 | W | 16 | 7.2 | ..... | ..... | 10n | ..... | W | Inap. | Inap. | Cloudy | F. Allison, M. A. |
| Hamilton, Ontario | 29.58 | 751.3 | 29.97 | 761.2 | 34.2 | 1.2 | 88 | SW | ..... | ..... | 1 | 5ck | 0 | ..... | ..... | 0 | 0 | Cloudy | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.73 | 755.1 | 29.76 | 755.9 | 31 | — 0.6 | 84 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast | E. Weedon. |
| *Kingston, Ontario | 29.50 | 749.3 | 29.85 | 758.2 | 30 | — 1.1 | 95 | W | 5 | 2.2 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.69 | 754.1 | 29.73 | 755.1 | 25 | — 3.9 | ..... | W | 8 | 3.6 | ..... | 5k | 0 | W | ..... | 0.23 | 5.8 | Fair | C. H. Rigby. |
| *Montreal, Quebec | 29.52 | 749.8 | 29.74 | 755.4 | 25 | — 3.9 | 70 | W | 24 | 10.7 | ..... | ..... | 10n | ..... | ..... | 0.03 | 0.8 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.15 | 740.4 | 29.86 | 758.4 | 31 | — 0.6 | 82 | W | 12 | 5.4 | ..... | 2ck | 0 | W | ..... | 0 | 0 | Fair | Rev. R. Mosley. |
| Peterboro, Ontario | 29.08 | 738.6 | 29.86 | 758.4 | 33 | 0.6 | 67 | W | ..... | ..... | ..... | 0 | 6ks | ..... | ..... | 0 | 0 | Bright | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.26 | 743.2 | 29.98 | 761.5 | 32 | 0.0 | 79 | SW | 6 | 2.7 | ..... | 5k | 0 | NW | ..... | 0 | 0 | Fair | H. Morgan. |
| Port Hastings, N. S | 29.64 | 752.8 | 29.69 | 754.1 | 27.0 | — 2.3 | ..... | NW | 3 | 1.3 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.33 | 745.0 | 30.00 | 762.0 | 33 | 0.6 | 87 | W | 10 | 4.5 | ..... | 8ck | 0 | NW | ..... | 0 | 0 | Cloudy | M. Payne. |
| *Quebec, Quebec | 29.28 | 743.7 | 29.62 | 752.3 | 22 | — 5.6 | 86 | W | ..... | ..... | 6 | ..... | 10n | ..... | ..... | 0.11 | 2.8 | Light snow | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.29 | 744.0 | 29.76 | 755.9 | 30 | — 1.1 | 62 | W | 10 | 4.5 | ..... | ..... | 8s | ..... | W | 0 | 0 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 29.64 | 752.8 | 29.69 | 754.1 | 32 | 0.0 | 74 | W | 10 | 4.5 | ..... | 2k | 2s | NW | ..... | 0 | 0 | Cloudy | Dr. Gove. |
| St. John, N. B | 29.53 | 750.0 | 29.70 | 754.4 | 23 | — 5.0 | 86 | NW | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.17 | 740.9 | 29.90 | 759.4 | 33 | 0.6 | 98 | SW | 9 | 4.0 | ..... | 5ck | 0 | W | ..... | Inap. | Inap. | Clearing | K. Stewart. |
| Stayner, Ontario | 29.09 | 738.9 | 29.89 | 759.2 | 34 | 1.1 | 72 | NW | 8 | 3.6 | ..... | 5k | 0 | NW | ..... | Inap. | Inap. | Fair | R. J. Cole. |
| Stratford, Ontario | 28.62 | 726.9 | 29.96 | 761.0 | 28.0 | — 2.2 | 87 | SW | 8 | 3.6 | ..... | 2ck | 5s | NW | ..... | 0.05 | 1.3 | Fair | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.67 | 753.6 | 29.70 | 754.4 | 30 | — 1.1 | 55 | SW | 14 | 6.3 | ..... | 2k | 0 | W | ..... | 0.18 | 4.6 | Clear | T. C. Hill. |
| *Toronto, Ontario | 29.55 | 750.6 | 29.95 | 760.7 | 31 | — 0.6 | 86 | SW | 7 | 3.1 | ..... | 5k | 2s | W | W | Inap. | Inap. | Cloudy | Magnetic Observatory. |
| Windsor, N. S | 29.58 | 751.3 | 29.67 | 753.6 | 28.0 | — 2.2 | 82 | SW | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | Inap. | Inap. | Snowing | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 31.0 | — 0.6 | ..... | W | ..... | ..... | ..... | 5 | 5n | ..... | ..... | 0.50 | 12.7 | Cloudy | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'per 0—10 | CLOUDS. Amount. Low'r 0—10 | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.65 | 753.1 | 29.88 | 758.9 | 32 | 0.0 | 69 | Calm | 0 | 0 | ..... | 0 | 8ks | ..... | W | Inap. | Inap. | Fair | |
| Alpena, Michigan | 29.17 | 740.9 | 29.83 | 757.7 | 32 | 0.0 | 89 | W | 10 | 4.5 | ..... | ..... | 10s | ..... | W | Inap. | Inap. | Cloudy | |
| Atlantic City, New Jersey | 30.05 | 763.3 | 30.07 | 763.8 | 31 | — 0.6 | 79 | W | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Augusta, Georgia | 29.88 | 758.9 | 30.07 | 763.8 | 45 | 7.2 | 61 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Smoky | |
| Baltimore, Maryland | 30.05 | 763.3 | 30.10 | 764.5 | 33 | 0.6 | 51 | W | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Barnegat, New Jersey | 30.02 | 762.5 | 30.04 | 763.0 | 32 | 0.0 | 60 | W | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Bismarck, Dakota | 27.61 | 701.3 | 29.47 | 748.5 | 38 | 3.3 | 72 | NW | 1 | 0.4 | ..... | 0 | 6s | ..... | Calm | 0 | 0 | Fair | |
| Boise City, Idaho | 26.91 | 683.5 | 29.79 | 756.7 | 40 | 4.4 | 82 | S | 4 | 1.8 | ..... | 2k | 6s | Calm | Calm | 0.52 | 13.2 | Fair | |
| Boston, Massachusetts | 29.70 | 754.4 | 29.89 | 758.4 | 33 | 0.6 | 61 | W | 15 | 6.7 | ..... | 1k | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Brackettville, Texas | 28.59 | 726.2 | 29.58 | 751.3 | 67 | 19.4 | 69 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 28.48 | 723.4 | 29.48 | 748.8 | 31 | — 0.6 | 95 | SE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Brownsville, Texas | 29.74 | 755.4 | 29.80 | 756.9 | 68 | 20.0 | 90 | SE | 16 | 7.2 | ..... | 0 | 8ks | ..... | SE | 0 | 0 | Cloudy | |
| Buffalo, New York | 29.22 | 742.2 | 29.94 | 760.5 | 33 | 0.6 | 79 | SW | 10 | 4.5 | ..... | 5k | 6s | W | W | 0 | 0 | Cloudy | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 53 | 11.7 | 54 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.54 | 750.3 | 29.81 | 757.2 | 29 | — 1.7 | 67 | S | 7 | 3.1 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Cairo, Illinois | 29.56 | 750.8 | 29.96 | 761.0 | 56 | 10.0 | 45 | SE | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Grant, Arizona | 24.88 | 631.9 | 29.68 | 753.9 | 45 | 7.2 | 53 | N | ..... | ..... | 1 | 0 | 2ks | ..... | W | 0 | 0 | Fair | |
| Camp Verde, Arizona | 26.54 | 674.1 | 30.02 | 762.5 | 45 | 7.2 | 68 | SW | ..... | ..... | 3 | ..... | 10ks | ..... | SW | 0.01 | 0.3 | Cloudy | |
| Campo, California | 27.30 | 693.4 | 29.87 | 758.7 | 43 | 6.1 | 91 | Calm | 0 | 0 | ..... | 5k | 0 | SW | ..... | 0.08 | 2.0 | Fair | |
| Cape Hatteras, N. Carolina | 30.13 | 765.3 | 30.13 | 765.3 | 43 | 6.1 | 83 | NE | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Henry, Virginia | 30.10 | 764.5 | 30.13 | 765.3 | 39 | 3.9 | 46 | NE | 7 | 3.1 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 30.08 | 764 0 | 30.10 | 764.5 | 50 | 10.0 | 65 | NE | 18 | 8.0 | ..... | Haze | 5ks | ..... | Calm | 0 | 0 | Cloudy | |
| Cape May, New Jersey | 30.06 | 763.5 | 30.09 | 764.3 | 34 | 1.1 | 70 | NW | 28 | 12.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 30.01 | 762.2 | 30.07 | 763.8 | 52 | 11.1 | 93 | N | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Cheyenne, Wyoming | 23.70 | 602.0 | 29.64 | 752.8 | 45 | 7.2 | 100 | NE | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light rain | |
| Chicago, Illinois | 29.13 | 739.9 | 29.82 | 757.4 | 41 | 5.0 | 65 | S | 11 | 4.9 | ..... | ..... | 10s | ..... | S | 0.02 | 0.5 | Cloudy | |
| Cincinnati, Ohio | 29.36 | 745.7 | 30.01 | 763.0 | 33 | 0.6 | 84 | SE | 4 | 1.8 | ..... | 9k | Fog | NW | Calm | 0 | 0 | Cloudy | |
| Cleveland, Ohio | 29.29 | 744.0 | 30.05 | 763.3 | 30 | — 1.1 | 68 | S | 10 | 4.5 | ..... | 8cs;k | 0 | Calm;NW | ..... | 0 | 0 | Fair | |
| Concho, Texas | 27.78 | 705.6 | 29.39 | 746.5 | 60 | 15.6 | 70 | S | 18 | 8.0 | ..... | 4k | 0 | S | ..... | 0 | 0 | Fair | |
| Corsicana, Texas | 29.24 | 745.2 | 29.80 | 756 9 | 55 | 12.8 | 74 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Davenport, Iowa | 29.06 | 738.1 | 29.68 | 753.9 | 46 | 7.8 | 77 | S | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0.05 | 1.3 | Cloudy | |
| Deadwood, Dakota | 25.04 | 636.0 | ..... | ..... | 37 | 2.8 | 81 | S | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Denison, Texas | 28.97 | 735.8 | 29.76 | 755.9 | 56 | 13.3 | 63 | SE | 5 | 2.2 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Denver, Colorado | 24.40 | 619.8 | 29.62 | 752.3 | 50 | 10.0 | 32 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Detroit, Michigan | 29.28 | 743.7 | 29.98 | 761.5 | 31 | — 0.6 | 89 | SW | 6 | 2.7 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Dodge City, Kansas | 26.98 | 685.3 | 29.16 | 740.7 | 56 | 13.3 | 51 | S | 20 | 8.9 | ..... | ..... | 8ks | ..... | S | 0 | 0 | Cloudy | |
| Dubuque, Iowa | 28.92 | 734.6 | 29.61 | 752.1 | 45 | 7.2 | 76 | S | 12 | 5.4 | ..... | ..... | Fog | ..... | Calm | 0.01 | 0.3 | Foggy | |
| Duluth, Minnesota | 28.91 | 734.3 | 29 59 | 751.6 | 37 | 2.8 | 90 | NE | 7 | 3.1 | ..... | 0 | 5ks | ..... | NE | 0.02 | 0.5 | Fair | |
| Eagle Pass, Texas | 28.99 | 736.3 | 29.69 | 754.1 | 62 | 16.7 | 88 | Calm | 0 | 0 | ..... | ..... | 10k | ..... | E | 0 | 0 | Cloudy | |
| Eastport, Maine | 29.62 | 752.3 | 29.60 | 754.1 | 28 | — 2.2 | 66 | SW | 12 | 5.4 | ..... | 5ck | 0 | W | ..... | Inap. | Inap. | Fair | |
| Erie, Pennsylvania | 29.25 | 742.9 | 29.99 | 761.7 | 34 | 1.1 | 79 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Escanaba, Michigan | 29.12 | 739.6 | 29.78 | 756.4 | 35 | 1.7 | 90 | SE | 5 | 2.2 | ..... | ..... | 10s | ..... | SE | 0.03 | 0.8 | Cloudy | |
| Florence, Arizona | 28.14 | 714.7 | 29.74 | 755.4 | 53 | 11.7 | 79 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Fort Bayard, New Mexico | 23.87 | 606.3 | 29.87 | 758.7 | 41 | 5.0 | 57 | W | 19 | 8.5 | ..... | 2k | 7s | W | W | 0 | 0 | Cloudy | |
| Fort Craig, New Mexico | 25.14 | 638.5 | ..... | ..... | 60 | 10.0 | 35 | SE | 18 | 8.0 | ..... | 0 | 2ks | ..... | SW | 0 | 0 | Fair | |
| Fort Gibson, Indian Ter | 29.20 | 741.7 | 29.72 | 754.9 | 58 | 14.4 | 37 | SE | 8 | 3.6 | ..... | Haze | Sm'e | Calm | Calm | 0 | 0 | Smoky | |
| Fort Griffin, Texas | 28.42 | 721.9 | 29.05 | 753.1 | 57 | 13.9 | 57 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.48 | 748.8 | 29.52 | 749.8 | 25 | — 2.2 | 100 | NE | 9 | 4.0 | ..... | ..... | 10k | ..... | N | 0 | 0 | Cloudy | |
| Fort Sill, Indian Territory | 28.48 | 723.4 | 29.56 | 750.8 | 53 | 11.7 | 54 | Calm | 0 | 0 | ..... | Haze | Haze | ..... | ..... | 0 | 0 | Hazy | |
| Galveston, Texas | 29.84 | 757.9 | 29.88 | 758.9 | 66 | 18.9 | 94 | S | 6 | 2.7 | ..... | 0 | 1ks | ..... | S | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.20 | 741.7 | 29.85 | 758.2 | 41 | 5.0 | 65 | SW | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Threatening | |
| Indianapolis, Indiana | 29.17 | 740.9 | 29.97 | 761.2 | 38 | 3.3 | 63 | SE | 7 | 3.1 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Indianola, Texas | 29.82 | 757.4 | 29.85 | 758.2 | 67 | 19.4 | 89 | SE | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.58 | 725.9 | 29.68 | 753.9 | 56 | 13.3 | 63 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.02 | 762.5 | 30.04 | 763.0 | 54 | 12.2 | 74 | NE | 4 | 1.8 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Hazy | |
| Keokuk, Iowa | 29.05 | 737.9 | 29.66 | 753.4 | 47 | 8.3 | 70 | SE | 10 | 4.5 | ..... | 0 | 4s | ..... | Calm | Inap. | Inap. | Fair | |
| Key West, Florida | 29.99 | 761.7 | 30.02 | 762.5 | 71 | 21.7 | 71 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Kittyhawk, North Carolina | 30.12 | 765.0 | 30.14 | 765.5 | 41 | 5.0 | 65 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Knoxville, Tennessee | 29.07 | 738.4 | 30.11 | 764.8 | 33 | 0.6 | 70 | Calm | 0 | 0 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Hazy | |
| La Crosse, Wisconsin | 28.84 | 732.5 | 29.56 | 750.8 | 46 | 7.8 | 69 | S | 11 | 4.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| La Mesilla, New Mexico | 25.79 | 655.0 | 29.94 | 760.5 | 44 | 6.7 | 67 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.32 | 744.7 | 29.64 | 752.8 | 66 | 18.9 | 84 | SE | 12 | 5.4 | ..... | 0 | 5ks | ..... | SE | 0 | 0 | Fair | |
| Leavenworth, Kansas | 28.74 | 730.0 | 29.55 | 750.6 | 54 | 12.2 | 49 | S | 12 | 5.4 | ..... | ..... | Sm'e | ..... | S | 0 | 0 | Smoky | |
| Los Angeles, California | 29.56 | 750.8 | 29.90 | 759.4 | 45 | 7.2 | 84 | N | 5 | 2.2 | ..... | 0 | 4s | ..... | SW | 0.03 | 0.8 | Fair | |
| Louisville, Kentucky | 29.43 | 747.5 | 30.01 | 762.2 | 40 | 4.4 | 56 | SE | 10 | 4.5 | ..... | 8ck | Sm'e | NW | Calm | 0 | 0 | Cloudy | |
| Lynchburg, Virginia | 29.40 | 746.7 | 30.11 | 764.8 | 38 | 2.2 | 62 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.03 | 737.3 | 29.73 | 755.1 | 37 | 2 8 | 81 | SW | 2 | 0.9 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light snow | |
| Mason, Texas | 28.10 | 713.7 | 29.81 | 757.2 | 60 | 15.6 | 77 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.64 | 752.8 | 29.96 | 761.0 | 50 | 10.0 | 53 | SE | 4 | 1.8 | ..... | Haze | Hz;sm' | Calm | Calm;SE | 0 | 0 | Hazy | |
| Milwaukee, Wisconsin | 29.05 | 737.9 | 29.78 | 756.4 | 39 | 3.9 | 91 | S | 10 | 4.5 | ..... | 8cs | Sm'e | NW | ..... | 0 | 0 | Cloudy | |
| Mobile, Alabama | 29.98 | 761.5 | 30.03 | 762.7 | 52 | 11.1 | 73 | N | 3 | 1.3 | ..... | Haze | Sm'e | Calm | Calm | 0 | 0 | Hazy | |
| Montgomery, Alabama | 29.85 | 758.2 | 30.09 | 764.3 | 47 | 8.3 | 76 | N | 2 | 0.9 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Morgantown, West Virginia | 29.00 | 736.6 | 30.11 | 764.8 | 27 | — 2.8 | 76 | Calm | 0 | 0 | ..... | 2c | Sm'e | W | ..... | Inap. | Inap. | Fair | |
| Mt. Washington, N. H. | 23.16 | 588.2 | 29.52 | 749.8 | 0 | —17.8 | 100 | NW | 54 | 24.1 | ..... | ..... | Fog | ..... | NW | 0.84 | 21.3 | Foggy | |
| Nashville, Tennessee | 29.49 | 749.0 | 30.04 | 763.0 | 40 | 4 4 | 65 | NE | 2 | 0.9 | ..... | ..... | Haze | ..... | Calm | 0 | 0 | Hazy | |
| New Haven, Connecticut | 29.83 | 757.7 | 29.94 | 760.5 | 40 | 4.4 | 56 | W | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New London, Connecticut | 29.89 | 759.2 | 29.94 | 760.5 | 36 | 2.2 | 61 | W | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| New Orleans, Louisiana | 29.90 | 759.4 | 29.96 | 761.0 | 59 | 15.0 | 82 | SE | 6 | 2.7 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Fair | |
| Newport, Rhode Island | 29.84 | 757.9 | 29.90 | 759.4 | 32 | 0.0 | 59 | SW | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New York, New York | 29.81 | 757.2 | 30.00 | 762.0 | 32 | 0.0 | 79 | W | 10 | 4.5 | ..... | 2k | 8ks | W | W | 0 | 0 | Cloudy | |
| Norfolk, Virginia | 30.12 | 765.0 | 30.18 | 766.6 | 36 | 2.2 | 71 | E | 1 | 0.4 | ..... | Haze | Sm'e | ..... | ..... | 0 | 0 | Smoky | |
| North Platte, Nebraska | 26.66 | 677.2 | 29.18 | 741.2 | 40 | 4.4 | 78 | NW | 8 | 3.6 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Olympia, Washington Ter. | 29.61 | 752.1 | 29.55 | 753.1 | 49 | 9.4 | 93 | S | 5 | 2.2 | ..... | ..... | 10n | ..... | Calm | 0.82 | 20.8 | Light rain | |
| Omaha, Nebraska | 28.34 | 719.8 | 29.37 | 746.0 | 54 | 12.2 | 61 | S | 10 | 4.5 | ..... | 0 | Haze | ..... | Calm | 0.02 | 0.5 | Clear | |
| Oswego, New York | 29.58 | 751.3 | 29.90 | 759.4 | 36 | 2.2 | 61 | NW | 16 | 7.2 | ..... | 10k | 0 | NW | ..... | 0.02 | 0.5 | Cloudy | |
| Pembina, Dakota | 28.67 | 728.2 | 29.52 | 749.8 | 29 | — 1.7 | 78 | SE | 3 | 1.3 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Philadelphia, Pennsylvania | 30.02 | 762.5 | 30.08 | 764.0 | 31 | — 0.6 | 68 | W | 14 | 6.3 | ..... | 5cs | 0 | W | ..... | 0 | 0 | Fair | |
| Phœnix, Arizona | 28.65 | 727.7 | 30.45 | 773.4 | 49 | 9.4 | 71 | S | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.42 | 442.5 | 29.62 | 752.3 | 16 | — 8.9 | 49 | S | 12 | 5.4 | ..... | 5k | 0 | S | ..... | 0 | 0 | Fair | |
| Ploche, Nevada | 23.73 | 602.7 | 29.50 | 749.3 | 32 | 0.0 | 69 | W | 3 | 1.3 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| Pittsburg, Pennsylvania | 29.22 | 742.2 | 30.07 | 763.8 | 29 | — 1.7 | 78 | W | 5 | 2.2 | ..... | 1k | 0 | W | ..... | Inap. | Inap. | Clear | |
| Port Huron, Michigan | 29.25 | 742.9 | 29.94 | 760.5 | 31 | — 0.6 | 89 | SW | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Portland, Maine | 29.70 | 754.4 | 29.75 | 755.6 | 30 | — 1.1 | 57 | W | 14 | 6.3 | ..... | 8k | Haze | ..... | NW | 0 | 0 | Cloudy | |
| Portland, Oregon | 29.68 | 753.9 | 29.78 | 756.4 | 49 | 9.4 | 85 | S | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.93 | 23.6 | Light rain | |
| Prescott, Arizona | 24.40 | 619.8 | 29.76 | 755.9 | 38 | 3.3 | 63 | SE | ..... | ..... | 1 | ..... | 10s | ..... | SE | 0 | 0 | Threatening | |
| Punta Rassa, Florida | 30.02 | 762.5 | 30.03 | 762.7 | 68 | 20.0 | 84 | NW | 4 | 1.8 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Red Bluff, California | 29.53 | 750.0 | 29.89 | 759.2 | 51 | 10.6 | 86 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.77 | 19.6 | Cloudy | |
| Rochester, New York | 29.28 | 743.7 | 29.91 | 759.7 | 31 | — 0.6 | 79 | W | 10 | 4.5 | ..... | 3k;ck | 0 | Calm | ..... | 0.01 | 0.3 | Fair | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roseburg, Oregon | 29.26 | 743.2 | 29.82 | 757.4 | 47 | 8.3 | 92 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.75 | 19.1 | Cloudy | |
| Sacramento, California | 29.85 | 757.7 | 29.91 | 759.7 | 51 | 10.6 | 86 | S | 4 | 1.8 | ..... | 1c | 0 | SW | ..... | Inap. | Inap. | Clear | |
| St. Louis, Missouri | 29.25 | 742.9 | 29.82 | 757.4 | 48 | 8.9 | 49 | S | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| St. Marks, Florida | 30.03 | 762.7 | 30.05 | 763.3 | 44 | 6.7 | 93 | NW | 2 | 0.9 | ..... | 0 | Fog | ..... | ..... | 0 | 0 | Clear | |
| St. Paul, Minnesota | 28.66 | 728.0 | 29.47 | 748.5 | 40 | 4.4 | 73 | SE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.34 | 643.6 | 29.67 | 753.6 | 30 | 3.9 | 91 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.49 | 12.4 | Light rain | |
| San Antonio, Texas | 29.08 | 738.6 | 29.65 | 753.1 | 65 | 18.3 | 80 | SE | 4 | 1.8 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| San Diego, California | 29.90 | 759.4 | 29.97 | 761.2 | 50 | 10.0 | 86 | E | 5 | 2.2 | ..... | 0 | 5s | ..... | W | 0.04 | 1.0 | Fair | |
| Sandusky, Ohio | 29.34 | 745.2 | 30.03 | 762.7 | 33 | 0.6 | 70 | SW | 10 | 4.5 | ..... | 2cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Sandy Hook, New Jersey | 29.98 | 761.5 | 30.01 | 762.2 | 33 | 0.6 | 79 | SW | 25 | 11.2 | ..... | 2k | 5ks | SW | W | 0 | 0 | Cloudy | |
| San Francisco, California | 29.86 | 758.4 | 29.92 | 760.0 | 51 | 10.6 | 86 | SW | 4 | 1.8 | ..... | 0 | 8ks | ..... | SW | Inap. | Inap. | Fair | |
| Santa Fé, New Mexico | 22.91 | 581.9 | 29.45 | 748.0 | 44 | 6.7 | 52 | SE | 8 | 3.6 | ..... | 2k | 2s | Calm | Calm | 0 | 0 | Fair | |
| Savannah, Georgia | 29.95 | 760.7 | 30.05 | 763.3 | 52 | 11.1 | 47 | NW | 3 | 1.3 | ..... | Haze | Haze | ..... | ..... | 0 | 0 | Hazy | |
| Shreveport, Louisiana | 29.66 | 753.4 | 29.88 | 758.9 | 57 | 13.9 | 75 | SE | 3 | 1.3 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.05 | 763.3 | 30.08 | 764.0 | 50 | 10.0 | 86 | N | 7 | 3.1 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Springfield, Massachusetts | 29.71 | 754.6 | 29.84 | 757.9 | 37 | 2.8 | 45 | W | 5 | 2.2 | ..... | 10k | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Stockton, Texas | 26.68 | 677.7 | 29.68 | 753.9 | 55 | 12.8 | 68 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.79 | 756.7 | 29.85 | 758.2 | 32 | 0.0 | 50 | W | 16 | 7.2 | ..... | 1c | 0 | NW | ..... | 0 | 0 | Clear | |
| Toledo, Ohio, | 29.29 | 744.0 | 29.99 | 761.7 | 34 | 1.1 | 79 | SW | 6 | 2.7 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 49 | 9.4 | 64 | SW | ..... | ..... | 1 | 5k | 0 | SW | ..... | 0 | 0 | Fair | |
| Tybee Island, Georgia | 30.01 | 762.2 | 30.04 | 763.0 | 52 | 11.1 | 53 | NW | 4 | 1.8 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Smoky | |
| Umatilla, Oregon | 29.29 | 744.0 | ..... | ..... | 47 | 8.3 | 92 | SW | 24 | 10.7 | ..... | ..... | 10n | ..... | SW | 0.70 | 17.8 | Light rain | |
| Vicksburg, Mississippi | 29.72 | 754.9 | 29.98 | 761.5 | 58 | 11.7 | 48 | SE | 7 | 3.1 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Hazy | |
| Virginia City, Montana | 23.98 | 609.1 | 29.46 | 748.3 | 36 | 2.2 | 80 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Visalia, California | 29.56 | 750.8 | 29.94 | 760.5 | 44 | 6.7 | 92 | Calm | 0 | 0 | ..... | 1c | 0 | NW | ..... | 0.01 | 0.3 | Clear | |
| Washington, D. C. | 30.03 | 762.7 | 30.15 | 765.8 | 31 | — 0.6 | 69 | W | 10 | 4.5 | ..... | 2ck | 0 | W | ..... | 0 | 0 | Fair | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 41 | 5.0 | 33 | SW | ..... | ..... | 1 | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 30.00 | 762.0 | 30.09 | 764.3 | 44 | 6.7 | 91 | NE | 7 | 3.1 | ..... | 2k | Sm'e | NE | Calm | 0 | 0 | Fair | |
| Winnemucca, Nevada | 25.41 | 645.4 | 29.77 | 756.1 | 39 | 3.9 | 73 | SW | 9 | 4.0 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Wood's Holl, Mass | 29.85 | 758.2 | 29.90 | 759.4 | 38 | 3.3 | 71 | NW | 16 | 7.2 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Clear | |
| Yankton, Dakota | 28.17 | 715.5 | 29.44 | 747.8 | 36 | 2 2 | 80 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Yuma, Arizona | 29.72 | 754.9 | 29.88 | 758.9 | 55 | 12.8 | 53 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 29.92 | 760.0 | 29.97 | 761.2 | 0.5 | —17.5 | 85 | NW | 3 | 1.3 | ..... | 2ck | 6s | N | ..... | 0.08 | 2.0 | Cloudy | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 29.99 | 761.7 | 30.01 | 762.2 | 68 | 20.0 | 79 | SE | 2.4 | 1.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.16 | 766.1 | 30.17 | 766.3 | 78 | 25.6 | 86 | Calm | 0 | 0 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.88 | 758.9 | 29.96 | 761.0 | 79 | 26.1 | ..... | NE | 10 | 4.5 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | ..... | ..... | 29.99 | 761.7 | 83 | 28.3 | 79 | E | ..... | ..... | 2 | 5ck | 5k | E | ..... | 0.115 | 2.92 | Fair | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | 30.05 | 763.2 | 30.06 | 763.4 | 82.4 | 28 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.87 | 22. | Cloudy | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.23 | 640.8 | ..... | ..... | 65.5 | 18.6 | 90 | Calm | ..... | ..... | 0 | 1k | 1s | ..... | ..... | 0.12 | 3.0 | ..... | Thomas Herran. |

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medillin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,700 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.6 m.; Concho, 1, 750 ft., or 538.4 m.; Deadwood, (?); Denver, 5,152 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.6 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.8 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,560 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,916.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,500 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,550 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,645 (?) ft., or 775.7 (?) m.; Virginia City, 5,460 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.16 in.; Mt. Washington, 8.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 1—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.88 | 758.9 | 51 | 10.6 | 50 | 10.0 | 100 | NNE | 1 | 0.4 | ..... | ..... | 6n | ..... | E | 0.011 | 0.28 | ..... | ..... | Threatening | |
| Navy Yard, Pensacola, Fla. | 30.12 | 765.0 | 58 | 14.4 | 59 | 15.0 | 88 | NE | 7 | 3.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Navy Yard, Portsmouth, N. H. | 29.89 | 759.2 | 74 | 23.3 | 29 | — 1.7 | 66 | WSW | 6 | 2.7 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Naval Hospital, Yokohama, Japan | 29.57* | 751.1* | 57.2 | 14.0 | 58.2 | 14.6 | 12 | NW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0.26 | 6.6 | ..... | ..... | Clear | |
| Adams, Panama | 29.94 | 760.5 | 82 | 27.8 | 82 | 27.8 | 83 | NNW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy | |
| Alliance, Piraeus, Greece | 29.64‡ | 752.8‡ | ..... | ..... | 66 | 18.9 | 79 | S | ..... | ..... | 4 | ..... | 3 | ..... | S&W | ..... | ..... | ..... | ..... | Clear | |
| Ashuelot, Shanghai, China | 30.30* | 769.6* | 62 | 16.7 | 48 | 8.9 | 70 | ESE | ..... | ..... | 1 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | D. clouds | |
| Canonicus, New Orleans, La | 29.92 | 760.0 | 45 | 7.2 | 58 | 14.4 | 94 | ENE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Colorado, New York, N. Y. | 29.98‡ | 761.5‡ | ..... | ..... | 35 | 1.7 | 54 | WSW | 12 | 5.4 | ..... | ..... | 8 | ..... | NW | 0 | 0 | ..... | ..... | Cloudy | |
| Constitution, N. 49° 02′ W. 6° 12′ | 30.19‡ | 766.8‡ | ..... | ..... | 47 | 8.3 | 85 | NNW | ..... | ..... | 2 | ..... | 5 | ..... | NNW | ..... | ..... | Smooth | ..... | Fair | |
| Despatch, Constantinople, Turkey. | 29.74 | 755.4 | 67 | 19.4 | 60 | 15.6 | 71 | SW | ..... | ..... | 3 | ..... | 5 | ..... | SW | ..... | ..... | Smooth | ..... | Fair | |
| Enterprise, Pensacola, Florida | 30.03‡ | 762.7‡ | ..... | ..... | 63 | 17.2 | 52 | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Misty | |
| Franklin, Norfolk, Va | 30.24‡ | 768.1‡ | ..... | ..... | 40 | 4.4 | 48 | N | 3.6 | 1.6 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | D. clouds | |
| Gettysburg Valetta, Malta | 29.96‡ | 761.0‡ | ..... | ..... | 57 | 13.9 | 94 | W | ..... | ..... | 6 | ..... | 5 | ..... | W | Blank | Blank | ..... | ..... | Fair | |
| Guard, Porto Grande, Cape Verde Islands. | 29.98 | 761.5 | 73 | 22.8 | 72 | 22.2 | 80 | NE | ..... | ..... | 2 | ..... | 8 | ..... | NE | ..... | ..... | ..... | ..... | Cloudy | |
| Marion, Smyrna, Turkey | 29.76 | 755.9 | 64 | 17.8 | 66 | 18.9 | 50 | S | ..... | ..... | 7 | ..... | 5 | ..... | S | 0 | 0 | Smooth | S | Fair | |
| Michigan, Erie, Pa | 29.48 | 748.8 | 68 | 20.0 | 34 | 1.1 | 79 | WSW | ..... | ..... | 2 | ..... | 10 | ..... | WSW | ..... | ..... | ..... | ..... | Cloudy | |
| Monongahela, Hong-Kong, China | 30.10* | 764.5* | 66 | 18.9 | 66 | 18.9 | 84 | ENE | ..... | ..... | 3–5 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Misty | |
| New Hampshire, Port Royal, S. C. | 30.21 | 767.3 | 61 | 16.1 | 54 | 12.2 | 67 | NW | 2 | 0.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Misty | |
| Omaha, N. 14° 17′, W. 54° 52′ | 30.12* | 765.0* | 82 | 27.8 | 81 | 27.2 | 70 | ENE | 2 | 0.9 | ..... | ..... | 5 | ..... | ENE | 0 | 0 | Smooth | ..... | Bright | |
| Onward, Callao, Peru | 29.98† | 761.5† | ..... | ..... | 73 | 22.8 | 90 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | ..... | ..... | Long | W | Misty | |
| Ossipee, Tampico, Mexico | 29.87‡ | 758.7‡ | ..... | ..... | 71 | 21.7 | ?? | SW | ..... | ..... | 2 | ..... | 5 | ..... | S | ..... | ..... | Mod'ate | ESE | Fair | |
| Palos, Shanghai, China | 30.31* | 769.9* | 62 | 16.7 | 48 | 8.9 | 70 | E | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Pensacola, Honolulu, H. I. | 30.28 | 769.1 | 72 | 22.2 | 70 | 21.1 | 100 | NE | 8 | 3.6 | ..... | ..... | 4 | ..... | NE | 0.01 | 0.3 | ..... | ..... | Fair | |
| Plymouth, Norfolk, Va | 30.18‡ | 766.6‡ | ..... | ..... | 40 | 4.4 | 64 | ENE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Light haze | |
| Powhatan, Port Royal, S. C. | 30.08‡ | 764.0‡ | ..... | ..... | 56 | 13.3 | 94 | Calm | 0 | 0 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Smooth | ..... | Misty | |
| Ranger, Amoy, China | 30.27* | 768.8* | ..... | ..... | 64 | 17.8 | 48 | ENE | ..... | ..... | 1–4 | ..... | 8 | ..... | Calm | ..... | ..... | ..... | ..... | D. clouds | |
| Rio Bravo, Brownsville, Texas | ..... | ..... | ..... | ..... | 63 | 17.2 | 94 | SSE | ..... | ..... | 2 | ..... | 6 | ..... | SE | ..... | ..... | ..... | ..... | ..... | |
| Santee, Annapolis, Md. | 30.17* | 766.3* | 59 | 15.0 | 36 | 2.2 | 80 | NW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Saratoga, Washington, D. C. | 30.04* | 763.0* | ..... | ..... | 39 | 3.9 | 91 | NW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| St. Louis, League Island, Pa | 29.98 | 761.5 | 55 | 12.8 | 33 | 0.6 | 100 | W | 15 | 6.7 | ..... | ..... | 5 | ..... | NW | 0 | 0 | ..... | ..... | Fair | |
| Supply, Havre, France | 30.20 | 767.1 | 48 | 8.9 | 44 | 6.7 | 60 | NW | ..... | ..... | 1 | ..... | 2 | ..... | NW | ..... | ..... | ..... | ..... | Clear | |
| Swatara, Cartagena, New Grenada | 29.96* | 761.0* | ..... | ..... | 84 | 28.9 | 83 | NNE | ..... | ..... | 2 | ..... | 6 | ..... | N&E | ..... | ..... | ..... | ..... | D. clouds | |
| Tennessee, N. 6° 53′, E. 80° 48′ | 29.90* | 759.4* | 86 | 30.0 | 85 | 29.4 | 79 | E | 9 | 4.0 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Slight | ENE | D. clouds | |
| Trenton, Piraeus, Greece | 29.70‡ | 754.4‡ | ..... | ..... | 68 | 20.0 | 74 | S | ..... | ..... | 3–5 | ..... | 2 | ..... | SW | 0 | 0 | Smooth | ..... | Hazy | |
| Tuscarora, N. 24° 15′ 31″ W. 110° 20′ 47″ | 29.98 | 761.5 | 63 | 17.2 | 64 | 17.8 | 68 | SSE | ..... | ..... | 4 | ..... | 2 | ..... | Calm | ..... | ..... | Smooth | ..... | Fair | |
| Vandalia, N. 40° 31′, E. 13° 29′ | 29.80‡ | 756.9‡ | ..... | ..... | 49 | 9.4 | 71 | W | ..... | ..... | 5 | ..... | 8 | ..... | WNW | ..... | ..... | Mod'ate | W | Stormy | |
| Wabash, Boston, Mass | 29.84‡ | 757.9‡ | ..... | ..... | 32 | 0.0 | 90 | W | 11 | 4.9 | ..... | ..... | 2 | ..... | W | 0 | 0 | ..... | ..... | Fair | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level: corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | Force. | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | Character. | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit.* | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Panama, Nanaimo, B. C. | | | 29.62* | 752.3* | | | | Calm | | | 0 | | 0 | | | | | Foggy | Capt. Cobb. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Tokio, Hong-Kong, China | | | | | 66 | 18.9 | | ENE | | | 7 | | 10 | | | | | | Capt. Dearborn. |
| S. S. Colima | | | | | | | | | | | | | | | | | | Overcast | Capt. Maury. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Corrected for temperature and elevation; instrumental error not known.

**WHITE STAR LINE MARINE SERIES.**

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, N. 41° 43,' W. 52° 09' | | | 29.73† | 755.1† | 60 | 15.6 | 88 | S | | | 3 | | 10 | | S | High | SSE | Rain and fog | Capt. W. H. Thompson |
| S. S. Celtic, New York, N. Y. | | | 29.76† | 755.9† | 40 | 4.4 | | NW | | | 4 | | | NW | | | | D clouds | Capt. B. Gleadell. |
| S. S. Germanic, N. 45° 16', W. 41° 30' | | | 30.26† | 768.6† | 58 | 14.4 | 100 | SW | | | 3 | | | | W | Long | W | D. clouds | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Aneroid.

**OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.**

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, N. 39° 58', E. 164° 12' | | | 29.45* | 748.0* | | | | W | | | 4 | | Light | | W | Mod'ate | W | D. clouds | Capt. John Metcalf. |
| S. S. Gaelic, N. 25° 30', E. 120° 40' | | | 29.99† | 761.7† | 60 | 15.6 | ?? | NE | | | 4 | | Haze | | NE | Smooth | NE | D. clouds | Capt. W. H. Kidley |
| S. S. Oceanic, N. 37° 41', W. 156° 31' | | | 30.01 | 762.2 | 50 | 10.0 | 79 | WNW | | | 4–5 | | 2 | | WNW | Heavy | | Squally | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

**NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.**

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsc... |
| S. S. Nürnberg, N. 49° 30', W. 5° 51' | | | 30.14 | 765.5 | 59.0 | 15.0 | 85 | NNW | | | 2 | | ck | | NW | Smooth | NNW | Fine | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | TRUE COURSE TOWARD— | HOURLY RATE IN KNOTS. | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | SEA-SWELL. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | Character | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | Captain Shackelford. | |
| S. S. Indiana, Mersey River | | | 30.21† | 767.3† | 40 | 4.4 | 91 | WNW | | | 4 | | 9? | | NW | | | Clear? | Captain Sargent. |
| S. S. Ohio, Philadelphia, Pa | | | 29.97 | 761.2 | 35 | 1.7 | 90 | WNW | | | 4 | | 8? | | WNW | | | Clear? | Captain Morrison. Captain Harris. |
| S. S. Pennsylvania | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. †Aneroid; unreliable, corrected for elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | Capt. Randle. | |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | Capt. Jackson. | |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | Capt. Nichols. | |

**ALLAN LINE MARINE SERIES.**

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Hibernian | | | | | | | | | | | | | | | | | | Capt. W. Richardson. | |
| S. S. Scandinavian | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.)**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Crisfield, Md. | | | 30.06 | 763.5 | 33 | 0.6 | 70 | Calm | 0 | 0 | | | 0 | | | | | Clear | Capt. James Jorgensen |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.66 | 763.4 | 15 | — 9.4 | 93 | WSW | 2.1 | 0.9 | | | 10s | | Calm | | | Fair | O. T. Sherman. |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer, U. S. A.*

Out of place.

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 28, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 29.99 | 761.7 | 63.7 | 17.6 | ..... | W | ..... | ..... | 1 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Dr. Ollive. |
| Nemours | ..... | ..... | 29.75 | 755.6 | 64.9 | 18.3 | 78 | NNW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair. | Michel. |
| Algiers | ..... | ..... | 29.64 | 752.8 | 63.7 | 17.6 | 80 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Towilliere. |
| La Calle | ..... | ..... | 29.72 | 754.9 | 70.9 | 26.6 | 59 | WSW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Boulangeot. |
| Tunis | ..... | ..... | 29.85 | 758.3 | 77.4 | 25.2 | 46 | SE | ..... | ..... | 6 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Jacques. |
| Sfax | ..... | ..... | 29.92 | 760.0 | 64 4 | 18.0 | ..... | WSW | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Gau. |
| Saida | ..... | ..... | 29.82 | 757.4 | 61.7 | 16.5 | 75 | SSW | ..... | ..... | 7 | ..... | 5 | ..... | ..... | 0.110 | 2.8 | Cloudy | Herbin. |
| Tebessa | ..... | ..... | 29.87 | 758.7 | ..... | ..... | ..... | SE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Bourgeois. |
| Geriville | ..... | ..... | 29.98 | 761.6 | 57.9 | 14.4 | 84 | SSW | ..... | ..... | 8 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Lemaillot. |
| Laghouat | ..... | ..... | 29.91 | 759.7 | 71.6 | 22.0 | 22 | ENE | ..... | ..... | 6 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Guyot. |
| Biskra | ..... | ..... | 29.92 | 759.9 | 71.1 | 21.7 | 80 | E | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair. | Chauvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.34 | 745.1 | 29.89 | 759.2 | 49.6 | 9.8 | 42 | SW | ..... | ..... | 5 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.05 | 737.9 | 29.83 | 757.7 | 42.8 | 6.0 | 53 | W | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbiski. |
| Eperies | 28.93 | 734.9 | 29.83 | 757.6 | 42.1 | 5.6 | 52 | S | ..... | ..... | 1 | ..... | 2cs | ..... | ..... | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.55 | 725.1 | 29.81 | 757.1 | 46.9 | 8.3 | 48 | SW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 0 | 7 | ..... | Andreas Rospini. |
| Hermannstadt | 28.50 | 723.9 | 29.97 | 761.3 | 37.9 | 3.3 | 51 | WNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 5 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.38 | 720.4 | 29.72 | 754.9 | 42.4 | 5.8 | 58 | NE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 7 | ..... | Prof. C. Wagner |
| Lemberg | 28.77 | 730.7 | 29.78 | 756.3 | 38.8 | 3.8 | 42 | NW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Dr. T. Stanecki. |
| Pola | 29.84 | 757.8 | 29.95 | 760.6 | 51.4 | 10.8 | 58 | SSE | ..... | ..... | 2 | ..... | 10s | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.49 | 749.0 | 29.97 | 761.1 | 41.7 | 5.4 | 55 | SW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.62 | 752.3 | 29.90 | 759.5 | 50.0 | 10.0 | 48 | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Karl Stancel. |
| Trieste | 29.89 | 759.2 | 29.99 | 761.8 | 43.5 | 6.4 | 91 | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.937 | 23.8 | Rainy | P. Busin. |
| Vienna | 29.06 | 738.2 | 29.78 | 756.5 | 47.6 | 8.8 | 87 | SSE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.04 | 712.2 | 29.57 | 751.1 | 36.7 | 2.6 | 90 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.720 | 18.3 | ..... | Prof. M. Passau. |
| Brussels | 29.35 | 745.5 | 29.86 | 750.7 | 39.7 | 4.3 | 73 | E | ..... | ..... | 1 | ..... | 10 | ..... | E? | 0.610 | 15.5 | Foggy | Royal Observatory. |
| Furnes | 29.51 | 749.6 | 29.54 | 750.2 | 43.2 | 6.2 | 64 | ESE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.429 | 10.9 | Foggy | M. E. de Cae. |
| Maeseyck | 29.47 | 748.5 | 29.60 | 751.7 | 41.2 | 5.1 | 100 | ESE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0.272 | 6.9 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 ? eet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

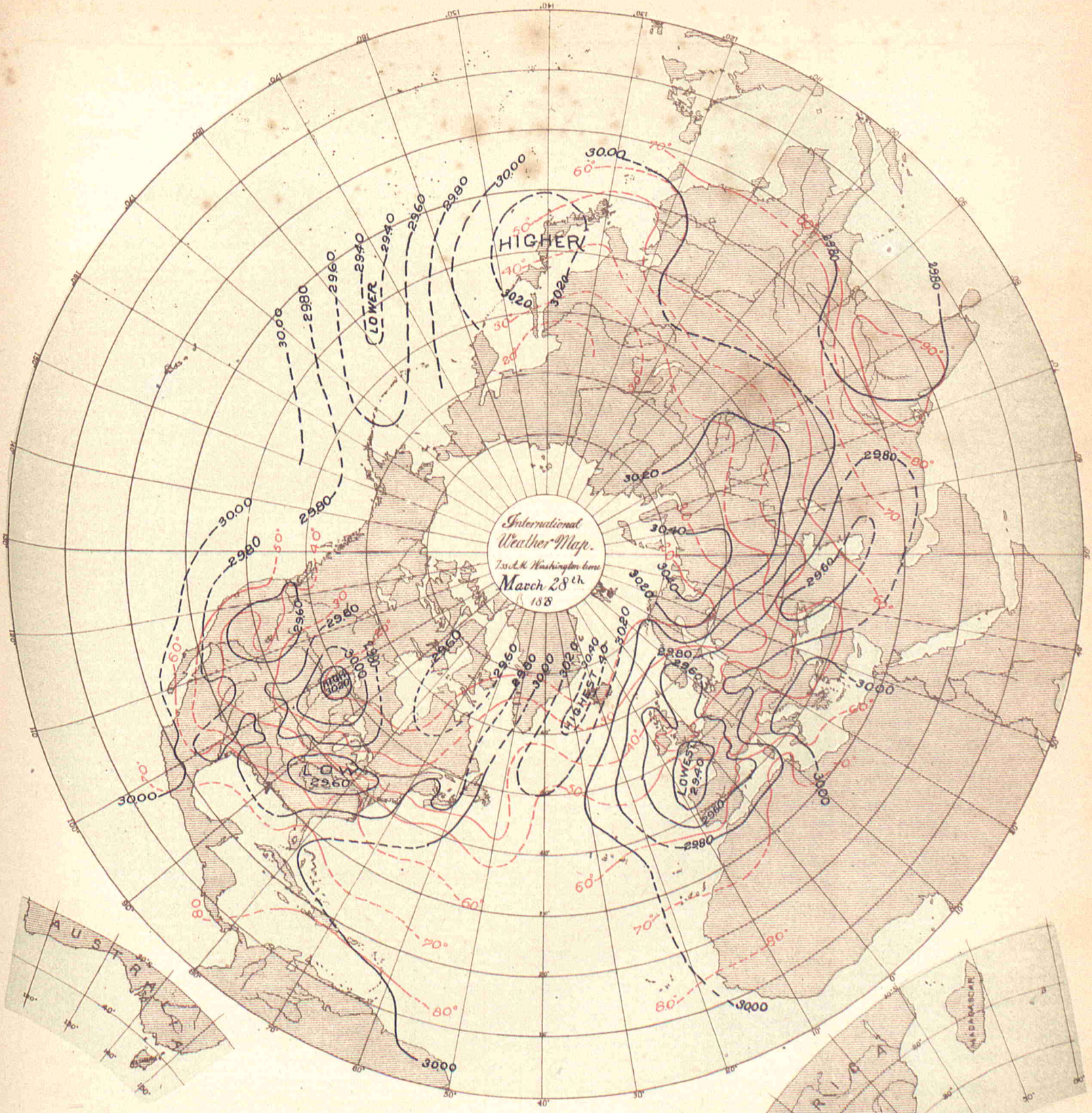
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E. Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. Points. | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.53 | 750.0 | 29.64 | 752.8 | 36.6 | 2.6 | ..... | SW | 7 | 3.1 | ..... | ..... | 2 | ..... | ..... | 0.020 | 0.51 | Blue sky..... | W. Boswell. |
| Ardrossan | 29.54 | 750.3 | 29.55 | 750.6 | 44 | 6.7 | ..... | SSE | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.54 | 750.3 | 35.2 | 1.8 | ..... | ENE | 9 | 4.0 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | Overcast..... | S. Call, for Dr. Robinson. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.52 | 749.8 | 31.2 | — 0.4 | ..... | E | 26 | 11.6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ... | 29.50 | 749.3 | 42.0 | 5.6 | ..... | NNE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | J. Dreyer. |
| Bradford, Yorkshire | 29.20 | 741.7 | 29.60 | 751.8 | 36.1 | 2.3 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.95 | 760.7 | 29.98 | 761.5 | 83 | 28.3 | ..... | NE | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.54 | 750.3 | 38.0 | 3.3 | ..... | ESE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Hail & snow | H. Todd. [H.C. |
| Cardington | ..... | ..... | 29.60 | 749.3 | 41.0 | 5.0 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast..... | John McLaren. |
| Chatham, School M. E. | 29.36 | 745.7 | 29.50 | 749.3 | 42.2 | 5.7 | ..... | NE | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | Lt. W. G. Morris, R. E. |
| Dartmoor | 27.91 | 708.9 | 29.39 | 746.5 | 38.0 | 3.3 | ..... | E | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Raining..... | Alexander Watt. |
| Donaghadee | 29.53 | 750.0 | 29.56 | 750.8 | 36 | 2.2 | ..... | SE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | J. Mac Gowan. |
| Dover | 29.46 | 748.3 | 29.48 | 748.8 | 40 | 4.4 | ..... | ESE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | ¾ clouded... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.55 | 750.6 | 34.5 | 1.4 | ..... | E | 2.4 | 1.1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | Thomas Mackereth. |
| Falmouth, Observatory | 29.14 | 740.1 | 29.37 | 746.0 | 45.4 | 7.4 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | The Staff. |
| Fort Napier, (Natal) | 27.67 | 702.8 | 29.87 | 758.7 | 86.4 | 30.2 | ..... | NW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.70 | 754.4 | 29.93 | 760.2 | 88 | 31.1 | ..... | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | |
| Galway, Queen's College | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.64 | 752.8 | 29.70 | 754.4 | 60.0 | 15.6 | ..... | W | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Showery..... | Corpl. C. Aitken, A.H.C. |
| Glasgow, Observatory | 29.36 | 745.7 | 29.57 | 751.1 | 38.9 | 3.8 | ..... | E | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | D. G. Maclean. |
| Great Yarmouth | 29.57 | 751.1 | 29.58 | 751.3 | 40 | 4.4 | ..... | E | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Blue sky..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.30 | 744.2 | 29.47 | 748.5 | 44.4 | 6.9 | ..... | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast..... | The Staff, for G. B. Airy. |
| Guernsey | 29.12 | 739.6 | 29.35 | 745.5 | 42.5 | 5.8 | ..... | ENE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 29.40 | 746.7 | 50 | 10.0 | ..... | E | ..... | ..... | 2 | ..... | 4k | ..... | ..... | 0 | 0 | Fine..... | M. P. Moyle. |
| Holyhead | 29.42 | 747.3 | 29.47 | 748.5 | 38 | 3.3 | ..... | E | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | John Tilston. |
| Jersey | 29.07 | 738.4 | 29.36 | 745.7 | 41.3 | 5.2 | ..... | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 29.56 | 750.8 | 43.2 | 6.2 | ..... | E | 23 | 10.3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | The Staff. |
| Kingstown | 29.47 | 748.5 | 29.50 | 749.3 | 39 | 3.9 | ..... | N | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.54 | 750.3 | 33.7 | 0.9 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.93 | 760.2 | 30.00 | 762.0 | 62.6 | 17.0 | ..... | SE | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | Sgt. Fred. Travis, A. H. |
| Nairn | 29.47 | 748.5 | 29.57 | 751.1 | 41 | 5.0 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Clear..... | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 30.01 | 762.2 | 74.5 | 23.6 | ..... | SE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | C. S. Duncombe. |
| Nottingham, Observatory | 29.36 | 745.7 | 29.55 | 750.6 | 33.6 | 0.9 | ..... | NE | ..... | ..... | 2 | ..... | 10n | ..... | ENE | 0.167 | 4.24 | Snowing..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 28.98 | 736.1 | 29.52 | 749.8 | 32.0 | 0.0 | ..... | ENE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Heavy snow | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.46 | 748.3 | 40 | 4.4 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | Mr. Lucas. |
| Plymouth | 29.29 | 744.0 | 29.36 | 745.7 | 45.4 | 7.4 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling.... | John Merrifield. |
| Roche's Point | 29.43 | 747.5 | 29.47 | 748.5 | 43 | 6.1 | ..... | NE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | Blank | Blank | Cloudy..... | W. Kennedy. |
| Saint Ann's Head | 29.26 | 743.2 | 29.44 | 747.8 | 36 | 2.2 | ..... | ENE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling.... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 29.61 | 752.1 | 35.6 | 2.0 | ..... | S | 13 | 5.8 | ..... | ..... | 2 | ..... | ..... | Blank | Blank | D. clouds.... | Rev. C. Clouston, L.L. D. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 30.00 | 762.0 | 45.2 | 7.3 | ..... | WSW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | Sergt. W. H. Lyne. |
| Sheffield | 29.32 | 744.7 | 29.60 | 751.8 | 36.2 | 2.3 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.03 | 0.8 | Snowing..... | W. F. Cooper. |
| Silloth Rectory | 29.51 | 749.5 | 29.54 | 750.3 | 42.6 | 5.9 | 58 | E | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | D. clouds.... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.16 | 740.7 | 29.56 | 750.8 | 36.0 | 2.2 | ..... | E | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 29.53 | 750.0 | 36 | 2.2 | ..... | NNW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ¾ clouded... | John Sutherland. |
| Stratfield Turgiss | 29.27 | 743.4 | 29.49 | 749.0 | 39.4 | 4.1 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling.... | Rev. C. H. Grimm, F.M. |
| Thurso | ..... | ..... | 29.59 | 751.6 | 39 | 3.9 | ..... | S | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 29.38 | 746.2 | 48 | 8.9 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 29.50 | 749.3 | 46.3 | 7.9 | ..... | NNE | 14 | 6.3 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.97 | 761.2 | 70.5 | 21.4 | 78 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.75 | 755.6 | 29.93 | 760.3 | 82.9 | 28.3 | 78 | ENE | 6.5 | 2.9 | ..... | 9 | 4 | ..... | ..... | 0.35 | 8.9 | Cloudy..... | C. Meldrum. |
| Melbourne, Observatory | 29.97 | 761.2 | 30.06 | 763.5 | 63.1 | 17.3 | 76 | N | 11 | 4.9 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | Fine..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m.

| Marine Series. Vessels. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | | | |
|---|---|---|---|---|---|
| S. S. Algeria | ..... | ..... | ..... | ..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | ..... | Capt. C. C. Prehn. [R. |
| S. S. Peruvian, N. 44° 40′, W. 49° 30′ | 3 | WSW | D. clouds | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire, N. 40° 25′ W. 61° 5′ | 3 | S | D. clouds | ..... | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. | | BAROMETER. Reduced to sea-level. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. Direction. | WIND. Velocity. | | WIND. Force. | CLOUDS. Amount. | | CLOUDS. Direction. | | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inches. | Millimeters. | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | Inches. | Millimeters. | | |
| San José | 26.20 | 665.5 | ..... | ..... | 69.8 | 21.0 | 86 | NE | ..... | ..... | 2 | 3pc | ..... | ..... | ..... | 0 | 0 | ..... | Federico Maison. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.58 | 751.3 | 29.63 | 752.5 | 37.8 | 3.2 | 76 | SW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... |
| Fanöe | 29.56 | 750.7 | 29.58 | 751.2 | 37.8 | 3.2 | 71 | WSW | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.84 | 758.0 | 29.89 | 759.1 | 37.4 | 3.0 | 78 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | 30.47 | 773.0 | 30.51 | 775.0 | 18.9 | — 7.3 | 95 | NE | ..... | ..... | 7 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Faröe) | 29.76 | 755.9 | 29.80 | 756.8 | 34.5 | 1.4 | 74 | NE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | ..... | Snowing |
| Vestervig | 29.33 | 744.9 | 29.50 | 749.2 | 35.6 | 2.0 | 93 | WSW | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 28.91 | 734.2 | 29.46 | 748.2 | 44.6 | 7 | 93 | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.075 | 1.9 | Covered | Collignon, Director. |
| Amiens, Normal School | 29.40 | 746.7 | 29.51 | 749.5 | 43.5 | 6.4 | 82 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Bonvarne, Director. |
| Avignon, Normal School | 29.60 | 751.8 | 29.68 | 753.8 | 57.2 | 14 | 45 | SE | ..... | ..... | 3 | ..... | 8 | ..... | SE | 0 | 0 | Very cloudy | Mr. Giraud, Director |
| Bar-sur-Seine | 28.89 | 733.9 | 29.45 | 748.0 | 48.0 | 8.9 | 81 | SSE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | Inap. | Inap. | Sprinkling | C. Saillard. |
| Beaumette Obs'y (Angers) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Albert Cheux. |
| Beauvais | ..... | ..... | ..... | ..... | 40.8 | 4.9 | 86 | E | ..... | ..... | 2 | ..... | 10 | ..... | E | 0 | 0 | Covered | Normal School. |
| Besançon | 28.73 | 729.8 | 29.61 | 752.2 | 52.5 | 11.4 | 66 | SSW | ..... | ..... | 2 | ..... | 8 | ..... | SW | 0 | 0 | Very cloudy | Normal School. |
| Bourg-en-Bresse | 28.69 | 728.6 | 29.58 | 751.4 | 51.6 | 10.9 | 70 | S | ..... | ..... | 8 | ..... | 5n | ..... | S | 0.055 | 1.4 | Cloudy | Normal School. |
| Bourges, Normal School | 28.86 | 733.1 | 29.41 | 747.0 | 48.9 | 9.4 | 92 | S | ..... | ..... | 1 | ..... | 10 | ..... | S | 0 | 0 | Covered | A. Wagner, Director. |
| Brest, Naval Observatory | 29.04 | 737.6 | 29.26 | 743.2 | 40.8 | 4.9 | 83 | NNE | ..... | ..... | 3 | ..... | 10 | ..... | NNE | 0.010 | 0.26 | Raining | The Staff. |
| Carcassonne, Normal School | 29.06 | 738.2 | 29.47 | 748.6 | 55.2 | 12.9 | 75 | E | ..... | ..... | 6 | ..... | 10 | ..... | E | 0 | 0 | Covered | Vateau, Director. |
| Caen | 29.30 | 744.1 | 29.37 | 746.0 | 42.8 | 6 | 63 | W | ..... | ..... | 2 | ..... | 8 | ..... | E | 0.063 | 1.6 | Very cloudy | Normal School. |
| Chartres, Normal School | 28.81 | 731.8 | 29.38 | 746.2 | 42.1 | 5.6 | 58 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.039 | 1. | Covered | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.16 | 740.6 | 29.48 | 748.8 | 42.4 | 5.8 | 94 | S | ..... | ..... | 3 | ..... | 10n | ..... | S | 0.008 | 0.2 | Covered | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.11 | 714.0 | 29.45 | 748.1 | 52.7 | 11.5 | 48 | SE | ..... | ..... | 3 | ..... | 10 | ..... | S | 0 | 0 | Covered | Alluard, Director. |
| Commercy, Normal School | 28.69 | 728.6 | 29.58 | 751.2 | 40.6 | 4.8 | 93 | ESE | ..... | ..... | 2 | ..... | 10 | ..... | E | 0 | 0 | Covered | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.58 | 725.8 | 29.72 | 754.8 | 55.6 | 13.1 | 47 | SE | ..... | ..... | 4 | ..... | 10 | ..... | SE | 0 | 0 | Covered | M. Kina. |
| Grenoble | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| La Roche-sur-Yon, N. School | 29.13 | 739.8 | 29.34 | 745.2 | 53.6 | 12.0 | 86 | SSE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.016 | 0.4 | Covered | Mouillot, Director. |
| Le Mans, Normal School | 29.06 | 738.0 | 29.36 | 745.8 | 45.7 | 7.6 | 83 | W | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.069 | 1.76 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 28.61 | 726.7 | 29.54 | 750.2 | 52.2 | 11.2 | 97 | SW | ..... | ..... | 6 | ..... | 10 | ..... | SW | 0 | 0 | Covered | Voudez, Director. |
| Lorient, Naval Observatory | 29.22 | 742.3 | 29.32 | 744.8 | 47.8 | 8.8 | 84 | E | ..... | ..... | 2 | ..... | 10 | ..... | E | 0.398 | 10.1 | Covered | T. Carré, Director. |
| Mâcon, Normal School | 28.87 | 733.2 | 29.51 | 749.5 | 53.4 | 11.9 | 71 | Calm | ..... | ..... | 0 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | M. Marchal, Director. |
| Metz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. A. Schuster, Dir. |
| Mirecourt | 28.59 | 726.1 | 29.64 | 752.8 | 44.6 | 7 | 85 | SW | ..... | ..... | 2 | ..... | 10 | ..... | NE | 0 | 0 | Covered | Normal School. |
| Nismes, Normal School | 29.47 | 748.6 | 29.68 | 753.8 | 56.8 | 13.8 | 53 | S | ..... | ..... | 6 | ..... | 10 | ..... | S | 0 | 0 | Covered | Boyer, Director. |
| Orleans, Normal School | 29.04 | 737.5 | 29.42 | 747.2 | 47.1 | 8.4 | 83 | E | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Bernard, Director. |
| Paris, Observatory | 29.20 | 741.6 | 29.44 | 747.8 | 40.1 | 4.5 | 90 | SE | ..... | ..... | 1 | ..... | 10 | ..... | SE | Inap. | Inap. | Raining | National Observatory. |
| Privas | 28.65 | 727.8 | 29.73 | 755.1 | 40.1 | 9.5 | 62 | S | ..... | ..... | 2 | ..... | 5 | ..... | S | 0 | 0 | Cloudy | Normal School |
| Puy de Dome (Summit) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.36 | 745.7 | 29.39 | 746.5 | 53.2 | 11.8 | 80 | S | ..... | ..... | 3 | ..... | 10 | ..... | S | 0.39 | 10. | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.35 | 745.4 | 29.43 | 747.6 | 41.4 | 5.2 | 81 | SE | ..... | ..... | 2 | ..... | 10 | ..... | E | 0.016 | 0.4 | Covered | F. Lucard, Director. |
| Saint Malo (Port) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. H. Hercouet. |
| Tarbes, Normal School | 28.49 | 723.7 | 29.56 | 750.8 | 53.6 | 12 | 54 | WSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | T. Hugues, Director. |
| Villefranche | 28.77 | 730.8 | 29.48 | 748.7 | 52.7 | 11.5 | 74 | SSE | ..... | ..... | 8 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.82 | 757.3 | 29.84 | 758.0 | 79.5 | 26.4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.39 | 10. | ..... | L'Abbé Marchesi. |
| Lyons | ..... | ..... | 29.62 | 752.4 | 51.1 | 10.6 | ..... | ..... | ..... | ..... | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | M. Jeys. |
| Marseilles, Observatory | ..... | ..... | 29.65 | 753.2 | 54.5 | 12.5 | 79 | SE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | Inap | Inap. | Rainy | The Staff. |
| Mont-Louis | 24.41 | 620.0 | 30.12 | 765.0 | 45.9 | 7.7 | 50 | SSW | 29.8 | 13.33 | ..... | ..... | 3 | ..... | SSW | 0 | 0 | ..... | Mr. Falguère. |
| Nice | 29.69 | 754.0 | 29.76 | 756.0 | 57.9 | 14.4 | 61 | SSW | ..... | ..... | 6 | ..... | 10 | ..... | E | 0 | 0 | Covered | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.16 | 740.6 | 29.43 | 747.6 | 39.2 | 4.0 | 97 | ESE | ..... | ..... | 3 | ..... | 10 | ..... | SE | 0.142 | 3.6 | Light rain | Marié Davy, Director. |
| Perpignan | ..... | ..... | 29.52 | 749.8 | 59.7 | 15.4 | 64 | S | 13.0 | 5.83 | ..... | ..... | 5 | ..... | SW | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.03 | 559.5 | ..... | ..... | 30.7 | — 0.7 | ..... | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Cloudy | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.28 | 743.7 | 29.46 | 747.9 | 40.3 | 4.6 | 92 | NE | ..... | ..... | 1 | ..... | 10 | ..... | SSE | 0.201 | 5.1 | Raining | E. Renou. |
| Toulouse, Observatory | 28.76 | 730.6 | 29.47 | 748.5 | 58.5 | 14.7 | 52 | SSE | ..... | ..... | 8 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Tours | 29.11 | 739.3 | 29.30 | 744.3 | 48.2 | 9.0 | 91 | SSW | ..... | ..... | 1 | ..... | 10 | ..... | SSW | 0 | 0 | ..... | C. Marquet. |
| Versailles, (near Paris) | ..... | ..... | 29.43 | 747.5 | 39.6 | 4.2 | 93 | ESE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.135 | 3.44 | Covered | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.08 | 764.0 | 30.10 | 764.6 | 49.5 | 9.7 | 96 | NE | 3.8 | 1.7 | ..... | ..... | 10n | ..... | ..... | 0.398 | 10.1 | Raining | Marie Decheyrens, S. J |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 29.58 | 751.3 | 29.75 | 755.6 | 43.2 | 6.2 | 53 | SW | | | 2 | | 4 | | | 0.059 | 2.26 | | Prof. Arndt. |
| Breslau | 29.29 | 743.9 | 29.82 | 757.3 | 39.9 | 4.4 | 63 | WNW | | | 2 | | 8 | | | 0.044 | 1.13 | | Royal University Obs'y |
| Carlsruhe | 29.17 | 740.8 | 29.59 | 751.6 | 46.8 | 8.2 | 70 | SW | | | 1 | | 10 | | | 0.118 | 3.0 | | Albert Senz. |
| Cassel | 29.06 | 738.0 | 29.66 | 753.3 | 41.0 | 5.0 | 74 | SE | | | 2 | | 5 | ESE | | 0.146 | 3.70 | | Dr. H. Möhl. |
| Crefeld | 29.43 | 747.4 | 29.59 | 751.5 | 43.3 | 6.3 | 60 | SE | | | 2 | | 9 | | | 0.16 | 4. | | Director Lose. |
| Emden | 29.67 | 753.7 | 29.71 | 754.6 | 39.6 | 4.2 | 84 | W | | | 2 | | 6 | | | 0.47 | 12. | | Prof. Prestel. |
| Frankfort on the Main | 29.29 | 743.9 | 29.66 | 753.3 | 45.3 | 7.4 | 60 | E | | | 2 | | 9 | | | 0.114 | 2.9 | | Physical Society. |
| Friedrichshafen | 28.22 | 716.8 | 29.68 | 753.9 | 40.3 | 4.6 | 66 | NE | | | 5 | | 7 | WNW | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 29.64 | 752.8 | 29.67 | 753.6 | 40.3 | 4.6 | 62 | SW | | | 2 | | 2k | | | 0.059 | 1.5 | Clear | Captain F. Hegemann. |
| Kiel | 29.62 | 752.4 | 29.64 | 752.8 | 38.1 | 3.4 | 70 | NW | | | 2 | | 5 | | | 0.125 | 3.18 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.66 | 753.4 | 29.74 | 755.4 | 40.6 | 4.8 | 35 | W | | | | | | | | 0 | 0 | Fair | Prof. E. Luther. |
| Köslin | | | 29.71 | 754.6 | 38.5 | 3.6 | | NW | | | 2 | | 1 | | | 0.232 | 5.9 | | H. Müller. |
| Leipsic, Observatory | 29.35 | 745.4 | 29.78 | 756.3 | 41.0 | 5.0 | 57 | S | | | 2 | | 2 | SW | | 0.008 | 0.2 | | Prof. Bruhns. |
| Memel, Naval School | 29.74 | 755.5 | 29.79 | 756.7 | 36.5 | 2.5 | 47 | Calm | | | 0 | | 6cs | | | | | | Reinbrecht von Skalweit. |
| Neufahrwasser | 29.72 | 754.9 | 29.74 | 755.4 | 44.2 | 6.8 | 56 | SSW | | | 3 | | 9 | SSW | | 0 | 0 | | A. Lothes. |
| Posen | 29.54 | 750.3 | 29.84 | 757.9 | 40.6 | 4.9 | 46 | NW | | | 3–4 | | 3 | | | 0 | 0 | Fair | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.06 | 738.0 | 29.61 | 752.0 | 47.3 | 8.5 | 74 | S | | | 3 | | 10 | WSW | | | | Raining | Dr. Schur. |
| Stuttgart | 28.69 | 728.7 | 29.63 | 752.6 | 48.2 | 9.0 | 58 | S | | | 1 | | 9 | S | | | | Light rain | Prof. Schoder. |
| Treves, (Trier) | 28.97 | 735.7 | 29.48 | 748.8 | 42.8 | 6.0 | 76 | E | | | 6 | | 10 | | | 0.211 | 5.37 | Dense fog | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.16 | 715.3 | 29.68 | 753.8 | 44.4 | 6.9 | 60 | S | 4 | 2 | | | 8k | | SW | 0 | 0 | | Dr. Von Bebber. |
| Wustrow, Naval School | 29.69 | 754.1 | 29.74 | 755.4 | 37.6 | 3.1 | 70 | WSW | | | 2 | | 4 | | | 0.009 | 0.23 | Fair | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.72 | 754.8 | 30.11 | 764.8 | 57.6 | 14.2 | | NW | | | 1.0 | | | | | | | Clear | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.80 | 756.8 | 29.85 | 758.2 | 83.0 | 28.3 | 65 | WSW | 36.0? | 16.1? | | | 1 | | | 0 | 0 | | D. clouds |
| Deesa | 29.35 | 745.4 | 29.81 | 757.1 | 99.2 | 37.3 | 21 | Calm | | | | | 0 | | | 0 | 0 | | Blue sky |
| Bombay | 29.76 | 756.0 | 29.80 | 757.0 | 84.3 | 29.1 | 75 | NW | 10.0 | 8.5 | | | 0 | | | 0 | 0 | | Blue sky |
| Poona | 27.79 | 705.8 | 29.73 | 755.0 | 94.6 | 34.8 | 41 | WNW | | | | | 3 | | N | 0 | 0 | | Dust-whirl |
| Lahore | 29.15 | 740.3 | 29.89 | 759.1 | 82.0 | 27.8 | 49 | NE | 8.2 | 3.7 | | | 2 | | | 0 | 0 | | Blue sky |
| Belgaum | 27.32 | 693.9 | 29.80 | 756.8 | 88.1 | 31.2 | 48 | W | 9.0 | 4.0 | | | 0 | | | 0 | 0 | | Misty |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.87 | 733.3 | 29.75 | 755.7 | 88.8 | 31.6 | 31 | NW | 2.0 | 0.9 | | | | | | 0 | 0 | | |
| Agra | 29.20 | 741.6 | 29.74 | 755.5 | 99.1 | 37.3 | 22 | N | | | | | 3 | | SW | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.72 | 729.4 | 29.72 | 754.9 | 98.5 | 36.9 | 20 | E | 2.8 | 1.2 | | | 9 | | E | | | | Thunder-storm |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.35 | 745.5 | 29.71 | 754.7 | 96.1 | 35.6 | 40 | WNW | 3.9 | 1.7 | | | | | | 0 | 0 | | Blue sky |
| Allahabad | 29.41 | 747.1 | 29.71 | 754.7 | 96.2 | 35.7 | 27 | NW | 2.7 | 1.2 | | | 0 | | | 0 | 0 | | Blue sky |
| Patna | 29.49 | 749.0 | 29.66 | 753.4 | 98.4 | 36.9 | 12 | W | 1.8 | 0.8 | | | 8 | W | W | 0 | 0 | | D. clouds |
| Hazaribagh | 27.76 | 705.2 | 29.73 | 755.1 | 89.8 | 32.1 | 19 | WNW | 9.4 | 4.2 | | | 3 | | | 0 | 0 | | |
| Cuttack | 29.66 | 753.5 | 29.74 | 755.5 | 88.1 | 31.2 | 59 | S | 6.0 | 2.7 | | | 2 | | | 0 | 0 | | D. clouds |
| Calcutta (Alipore) | 29.71 | 754.6 | 29.73 | 755.1 | 86.9 | 30.5 | 72 | SSW | 10.0 | 4.5 | | | 0 | | | 0 | 0 | | Blue sky |
| Goalpara | 29.31 | 744.5 | 29.70 | 754.4 | 75.2 | 24.0 | 77 | ENE | 5.5 | 2.5 | | | 10 | | | | | | Thunder-storm |
| Chittagong | | | | | | | | | | | | | | | | | | | |
| Sibsagar | 29.50 | 749.2 | 29.84 | 757.9 | 68.7 | 20.4 | 96 | ENE | 4.5 | 2 0 | | | 10 | | | 0.22 | 5.6 | | Thunder-storm |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.45 | 722.6 | 29.78 | 756.3 | 94.5 | 34.7 | 36 | NE | 3.6 | 1.6 | | | 4 | SW | | 0 | 0 | | D. clouds |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.53 | 750.0 | 29.95 | 760.6 | 43.2 | 6.2 | 65 | SW | 1.8 | 0.8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codir. |
| Padua | 29.81 | 757.2 | 29.92 | 760.0 | 44.1 | 6.7 | 60 | N | 6.9 | 3.1 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Lott. Lorenzioni |
| Vicenza | 29.74 | 755.3 | 29.93 | 760.3 | 43.7 | 6.5 | 56 | NE | 4.3 | 1.9 | ..... | ..... | 10 | W | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.60 | 726.5 | 29.94 | 760.4 | 39.2 | 4.0 | 72 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.40 | 746.8 | 29.93 | 760.3 | 42.3 | 5.7 | ..... | NE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 28.98 | 736.1 | 29.90 | 759.4 | 47.3 | 8.5 | 57 | ESE | 1.3 | 0.6 | ..... | ..... | 9 | S | ..... | 0.051 | 1.3 | ..... | Prof. P. F. Denza. |
| Mondovi | 27.94 | 709.6 | 29.87 | 758.7 | 43.3 | 6.3 | 54 | NW | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.60 | 751.9 | 29.83 | 757.6 | 55.6 | 13.2 | 47 | E | ..... | ..... | 4 | ..... | 6 | E | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.67 | 753.7 | 29.85 | 758.1 | 49.3 | 9.6 | 76 | NE | 3.1 | 1.4 | ..... | ..... | 10 | SE | ..... | 0.524 | 13.3 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.66 | 751.9 | 29.93 | 760.1 | 47.5 | 8.6 | 51 | E | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.63 | 752.6 | 29.89 | 759.2 | 59.0 | 15.0 | 37 | S | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 29.77 | 756.2 | 29.86 | 758.4 | 57.2 | 14.0 | 59 | SSE | 15.0 | 6.7 | ..... | ..... | 9 | S | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 29.89 | 759.3 | 29.95 | 760.6 | 54.1 | 12.3 | 66 | S | 6.3 | 2.8 | ..... | ..... | 10 | NW | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.39 | 721.0 | 29.95 | 760.8 | 46.0 | 8.3 | 62 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.80 | 756.8 | 29.91 | 759.7 | 54.5 | 12.5 | 70 | SSE | ..... | ..... | 6 | ..... | 7 | S | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.80 | 756.8 | 29.97 | 761.3 | 53.1 | 11.7 | 44 | S | 18.6 | 8.3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U. | 29.85 | 758.2 | 30.05 | 763.3 | 58.3 | 14.6 | 46 | SSE | ..... | ..... | 4 | ..... | 6 | NW | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 55.8 | 13.2 | 44 | S | 16.9 | 3.1 | ..... | ..... | 2 | S | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.55 | 750.6 | 29.74 | 755.4 | 64.9 | 18.3 | 61 | SE | ..... | ..... | 4 | ..... | 7 | W | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.16 | 740.7 | 30.06 | 763.4 | 57.7 | 14.3 | 69 | NW | 2.5 | 1.1 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.63 | 752.7 | 29.89 | 759.2 | 66.2 | 19.0 | 34 | W | 13.0 | 5.8 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 30.00 | 762.1 | 30.04 | 763.0 | 59.4 | 15.2 | 66 | SSW | ..... | ..... | 4 | ..... | 10 | SW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.48 | 748.9 | 30.04 | 763.0 | 54.0 | 12.2 | 45 | WSW | 4.3 | 1.9 | ..... | ..... | 5 | SW | ..... | 0 | 0 | ..... | Prof. F. Brioschi |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 879.6 m., or 1,245.8 ft.; Mondovi, 556 m., or 1,824.7 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 30.23 | 767.8 | 30.30 | 769.6 | 43.3 | 6.3 | 68 | E | 8.2 | 3.7 | ..... | 4ck | 0 | ..... | ..... | 0 | 0 | Dark cloud. | The Observatory. |
| Tokei (Yeddo) University | 30.18 | 766.6 | 30.28 | 769.2 | 43 | 6.1 | 67 | E | 6 | 2.7 | ..... | 8cs | ..... | ..... | ..... | 0 | 0 | Cloudy | Prof. P. V. Veeder. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 62.6 | 17.0 | 27 | N | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | L. Castillo, A. E. |
| Guadalajara | 24.98 | 634.6 | 30.05 | 763.3 | 41.4 | 5.2 | 54 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | Prof. L. Perez. |
| Guanajuato | 23.63 | 600.2 | 29.88 | 759.0 | 57.7 | 14.3 | 61 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | Prof. V. Fernandes |
| Leon | ..... | ..... | ..... | ..... | 54.1 | 12.3 | 43 | NNW | 1.8 | 0.8 | ..... | 1cs | 0 | SW | ..... | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico | 23 04 | 585.2 | 30.13 | 765.2 | 48.7 | 9.3 | 44 | Calm | 0 | 0 | ..... | 0 | 2s | ..... | ..... | 0 | 0 | Slightly fo'gy | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 51 8 | 10.7 | 43 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Puebla | 23.30 | 591.8 | 30.06 | 763.4 | 43.5 | 6.4 | 55 | ENE | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | M. V. de Leon, M. E. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear | Prof. B. Gonzales. |
| Tlacotalpam | 29.78 | 756.3 | 29.79 | 756.6 | 74.3 | 23.5 | 80 | SE | 1.8 | 0.8 | ..... | 4cs | 0 | S | ..... | 0 | 0 | Hazy | Prof. C. Velazquez. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. F. R. Bayly. |
| Vera-Cruz | 29.83 | 757.6 | 29.85 | 758.3 | 73.4 | 23.0 | 74 | NW | ..... | ..... | ..... | 3c | 6s | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Zacatecas | ..... | ..... | ..... | ..... | 50.0 | 10.0 | 30 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. J. Rossell. |
| Puebla, (Catholic Institute) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Hazy | J. A. Bonilla, M. E. |
| Morelia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Spina, [M. M. D. D. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Tena, F. L. Param. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft. San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.57 | 751.1 | 29.57 | 751.1 | 44.2 | 6.8 | ..... | ESE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.079 | 2.0 | ..... | |
| Groningen | 29.38 | 751.3 | 29.63 | 752.7 | 38 3 | 3.5 | ..... | SSW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.161 | 4.1 | ..... | |
| Helder | 29.61 | 752.0 | 29.61 | 752 0 | 40.3 | 4.6 | ..... | ENE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 29.59 | 751.5 | 29.59 | 751.5 | 42.4 | 5.8 | 67 | ESE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.56 | 750.7 | 29.60 | 751.9 | 41.5 | 5.3 | 59 | WSW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | H. v d Brink. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.41 | 747.0 | 29.47 | 748.4 | 34.5 | 1.4 | 56 | N | 10.5 | 4.7 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Bróno | 29.80 | 756.9 | 29.84 | 757.9 | 27.3 | — 2.6 | 92 | NE | 9 | 4 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.37 | 745.9 | 29.52 | 749.7 | 37.2 | 2.9 | 61 | SSE | 11 | 5 | ..... | ..... | 10 | ..... | ..... | 0.134 | 3.4 | ..... | |
| Tromsó | 29.96 | 761.0 | 30.00 | 762.1 | 20.8 | — 6.2 | 64 | NE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.94 | 760.4 | 30.13 | 765.3 | 57.6 | 14.2 | 72 | NE | 8.7 | 3.9 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.53 | 724.6 | 29.57 | 751.1 | 51.8 | 11.0 | 85 | SSW | 10.5 | 4.7 | ..... | ..... | 9 | SW | ..... | 0.500 | 12.7 | Raining | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 29.81 | 757.2 | 29.90 | 759.4 | 66.9 | 19.4 | 55 | W | 13.0 | 5.8 | ..... | ..... | 1 | ..... | ..... | 0.016 | 0.4 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.13 | 739.9 | 29.49 | 749.1 | 57.0 | 13.9 | 69 | SSW | 26.2 | 11.7 | ..... | ..... | 10 | ..... | ..... | 0.547 | 13.9 | Thunder-storm | The Staff. |
| Ponta Delgada, (Azores) | 30.03 | 762.7 | 30.11 | 764.9 | 61.5 | 16.4 | 59 | NNE | 16.1 | 7.2 | ..... | ..... | 4 | SE | ..... | 0.020 | 0.5 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.69 | 754.2 | 29.70 | 754.3 | 86 | 30.0 | ..... | S | ..... | ..... | 5 | ..... | 1 | ..... | S | 2 | S | Blue sky | J. F. R. R. Bastos, Com'd't. A. J. de Mattos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Sado, Porto Praya, Cape Verde Islands | 30.02* | 762.5* | 30.03* | 762.8* | 81.5 | 27.5 | ..... | ENE | ..... | ..... | 4 | ..... | 3 | ..... | NE | 3 | E | D. clouds | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.69 | 754.0 | 29.69 | 754.2 | ..... | ..... | ..... | WNW | ..... | ..... | 2 | ..... | 5 | ..... | WNW | 1 | ..... | Blue sky | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreina, dos Ainas, Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.34 | 745.2 | 29.77 | 756.2 | 40.8 | 4.9 | 48 | SSW | 4 | 2 | ..... | ..... | 7ks;k | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.32 | 744.7 | 29.76 | 755.9 | 27.3 | — 2.6 | 77 | WNW | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Astronomical Obs. |
| Dorpat | 29.69 | 754.0 | 29.94 | 760.5 | 23.4 | — 4.8 | 86 | ENE | 13 | 6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.12 | 765.0 | 30.13 | 765.4 | 20.8 | — 6.2 | 71 | NE | 18 | 8 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.95 | 760.8 | 30.30 | 769.6 | 18.3 | — 7.6 | 95 | ESE | 11 | 5 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Ch. Forsten. |
| Kieff | 29.02 | 737.0 | 29.67 | 753.6 | 30.0 | — 1.1 | 100 | NW | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing | Physical Cabinet. |
| Nikolaiev | 29.69 | 754.0 | 29.76 | 755.8 | 38.7 | 3.7 | 83 | NW | 18 | 8 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.58 | 751.4 | 29.80 | 751.9 | 40.6 | 4.8 | 100 | NW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lugorio. |
| Moscow | 29.47 | 748.4 | 30.04 | 763.0 | 38.4 | 0.8 | 89 | SE | 13 | 6 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.39 | 746.4 | 29.59 | 751.5 | 58.1 | 14.5 | 39 | ESE | 34 | 15 | ..... | ..... | 1k | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 30.50 | 774.7 | 30.52 | 775.2 | 22.6 | — 5.2 | 61 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.13 | 714.4 | 29.52 | 749.8 | 55.8 | 13.2 | 54 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 29.88 | 758.9 | 29.50 | 756.8 | 50.0 | 10.0 | 62 | ENE | 27 | 12 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Kasan | 30.02 | 762.4 | 30.30 | 769.6 | 36.0 | 2.2 | 70 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 29.35 | 745.5 | 30.32 | 770.0 | 45.3 | 7.4 | 49 | Calm | 0 | 0 | ..... | ..... | 4ck | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.63 | 752.7 | 29.86 | 758.5 | 66.0 | 18.9 | 78 | SSE | 20 | 9 | ..... | ..... | 8k | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.49 | 723.7 | 30.18 | 766.5 | 63.5 | 17.4 | 42 | Calm | 0 | 0 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.75 | 755.6 | 30.28 | 769.2 | 38.7 | 3.7 | 69 | NW | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.74 | 755.4 | 30.07 | 763.8 | 38.3 | 3.5 | 72 | SW | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Krotkowo* | 29.74 | 755.3 | 30.23 | 767.7 | 38.8 | 3.8 | 83 | SE | 13 | 6 | ..... | ..... | 4k | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Peking, (China) | 29.86 | 758.4 | 30.00 | 762.0 | 60.4 | 15.8 | 41 | S | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.86 | 707.5 | 30.01 | 762.3 | 25.3 | — 3.7 | 98 | ENE | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 12.7 | —10.7 | 83 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | ..... | ..... | 29.50 | 749.3 | 56.7 | 13.7 | 62 | S | 7.2 | 3.23 | ..... | 0 | 3 | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.37 | 745.9 | 29.42 | 747.3 | 67.6 | 19.8 | 53 | S | 5.5 | 2.44 | ..... | 3 | 2 | SW | ..... | 0 | 0 | Cloudy | Prof. Manuel de Naveran. |
| Burgos, Met. Obs'y | 26.60 | 673.0 | ..... | ..... | 56.5 | 13.6 | 91 | S | 13.0 | 5.83 | ..... | 0 | 9 | ..... | ..... | 0.276 | 7.0 | Almost cov. | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.31 | 693.6 | 29.50 | 749.3 | 56.1 | 13.4 | 68 | S | 23.1 | 10.33 | ..... | 0 | 10 | ..... | ..... | 0.039 | 1.0 | Covered | The Staff. |
| Murcia, Met. Obs'y | 29.52 | 749.7 | 29.67 | 753.5 | 69.3 | 20.7 | 62 | SSW | 1.7 | 0.75 | ..... | 5 | 4 | E | ..... | 0 | 0 | Almost cov. | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.44 | 722.4 | 29.33 | 744.9 | 52.2 | 11.2 | 75 | SSW | 11.2 | 5.00 | ..... | ..... | 10 | ..... | ..... | 0.843 | 21.4 | Rainy | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.85 | 758.2 | 29.92 | 759.9 | 76.3 | 24.6 | 88 | SSE | 14.1 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 29.62 | 752.2 | 29.71 | 754.7 | 60.3 | 15.7 | 90 | SSW | 19.0 | 8.5 | ..... | 3 | 6 | SW | SW | 0.302 | 7.7 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.92 | 759.9 | 30.01 | 762.2 | 79.2 | 26.2 | 80 | E | 14.6 | 6.53 | ..... | 5kn | 3k | E | E | 0.089 | 2.25 | Cloudy | Leonardo de Tejeda, Chief of Engineers. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft. The barometer readings at Barcelona are published as given.

## SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-10. | Clouds. Amount. Up'er 0-10. | Clouds. Amount. Low'r 0-10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.20 | 767.0 | 30.24 | 768.0 | 17.6 | — 8.0 | ..... | SE | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0.039 | 1.0 | ..... | |
| Umea | 30.08 | 764.1 | 30.13 | 765.4 | 27.3 | — 2.6 | 92 | SE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.94 | 760.4 | 29.99 | 761 7 | 29.8 | — 1.2 | 80 | S | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 0.193 | 4.9 | ..... | |
| Stockholm | 29.64 | 752.8 | 29.82 | 757.3 | 32.5 | 0 3 | 66 | SE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0.020 | 0.5 | ..... | |
| Wisby | 29.69 | 754.0 | 29.74 | 755.5 | 37.0 | 2.8 | 55 | SE | ..... | ..... | 6 | ..... | 3 | ..... | ..... | 0.016 | 0.4 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.75 | 755.7 | 29.83 | 757.6 | 34.2 | 1.2 | 69 | ESE | 15.9 | 7.1 | ..... | ..... | 1 | SSE | ..... | 0.001 | 0.03 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.19 | 716.1 | 29.66 | 753.4 | 39.9 | 4.4 | 81 | NNE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.043 | 1.1 | Vapory | The Observatory. |
| Zurich | 28.01 | 711.4 | 29.70 | 754.4 | 38.1 | 3.4 | 77 | W | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | Cloudy | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —8.2 mm.; Thermometer, —5.0 cent.; Relative Humidity, +22 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.02 | 762.6 | 46.4 | 8.0 | 71 | WNW | 16 | 7.0 | ..... | ..... | 10 | ..... | WNW | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanidès. |
| Valona | ..... | ..... | 30.11 | 764.9 | 54.0 | 12.2 | ..... | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | A. Bertrand. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.78 | 756.1 | 29.85 | 758.1 | 58.1 | 14.6 | 57 | W | ..... | ..... | 6 | ..... | 2ks | ..... | W | 0.49 | 12.4 | Squally | Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.71 | 754.6 | 29.78 | 756.4 | 23.9 | — 4.5 | 90 | Calm | 0 | 0 | ..... | 3c | 0 | NW | ..... | ..... | ..... | Fine | Hon. J. Ferguson. |
| Brockville, Ontario | 29.29 | 744.0 | 29.60 | 751.8 | 35 | 1.7 | ..... | NE | 5 | 2.2 | ..... | ..... | 10n | ..... | NE | 0.23 | 5.8 | Light rain | W. R. Bigg. |
| *Chatham, N B | 29.81 | 757.2 | 29.87 | 758.7 | 29 | — 1.7 | 97 | Calm | 0 | 0 | ..... | 10c | 0 | SW | ..... | 0.15 | 3.8 | Fair | G. A. Blair. |
| Charlottetown, P. E. Island | 29.75 | 755.6 | 29.79 | 756.7 | 38 | 3.3 | 75 | NW | 4 | 1.8 | ..... | ..... | 8ks | ..... | NW | 0.190 | 4.83 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.47 | 748.5 | 29.67 | 753.6 | 34.2 | 1.2 | 100 | N | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0.52 | 13.2 | Raining | James Smith, M. A |
| Dalhousie, N. B | 29.77 | 756.1 | 29.80 | 756.9 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.30 | 7.6 | ..... | H. A. Johnson. |
| Esquimault, B. C | 29.61 | 752.1 | 29.66 | 753.4 | 43 3 | 6.3 | 100 | Calm | ..... | ..... | ..... | 1cs | 0 | ..... | ..... | Inap. | Inap. | Clear | W. H. Revis. |
| *Father Point, Quebec | 29.75 | 755.6 | 29.77 | 756.1 | 33 | 0.6 | 90 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.05 | 1.3 | Light snow | J. McWilliams. |
| Fredericton, N. B | 29.79 | 756.7 | 29.85 | 758.2 | 36.0 | 2.2 | 83 | W | 2 | 0.9 | ..... | ..... | 10s | ..... | ..... | 0.10 | 2.5 | Cloudy | Prof. Harrison. |
| *Fort Garry Manitoba | 29.38 | 746.2 | 30.27 | 768.8 | 16 | — 8.9 | 91 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.49 | 723.6 | 29.61 | 752.1 | 36 | 2.2 | 100 | N | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 1.17 | 29.7 | Raining | James Grant. |
| *Halifax, N. S | 29.66 | 753.4 | 29.80 | 756.9 | 39 | 3.9 | 83 | NW | 6 | 2.7 | ..... | ..... | 8ks | ..... | NW | 0.203 | 5.16 | Fair | F. Allison, M. A. |
| Hamilton, Ontario | 29.27 | 743.4 | 29.64 | 752.8 | 39.7 | 4.3 | 90 | NE | ..... | ..... | 2 | 10cs | 0 | ..... | ..... | 1.09 | 27.7 | Cloudy | Geo. Dickson, M. A. |
| Heart's Content, N. F | 30.05 | 763.3 | 30.07 | 763.8 | 34 | 1.1 | 71 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast | E. Weedon. |
| *Kingston, Ontario | 29.32 | 744.7 | 29.66 | 753.4 | 36 | 2.2 | 91 | NE | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.37 | 9.4 | Heavy rain | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.73 | 755.1 | 29.77 | 756.1 | 37 | 2.8 | ..... | W | 5 | 2.2 | ..... | 6ck | 0 | W | ..... | 0.50 | 12.7 | Fair | C. H. Rigby. |
| *Montreal, Quebec | 29.52 | 749.8 | 29.73 | 755.1 | 36 | 1.7 | 94 | SE | 5 | 2.2 | ..... | ..... | Fog | ..... | ..... | 0.03 | 0.8 | Dense fog | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.02 | 737.1 | 29.73 | 755.1 | 34 | 1.1 | 80 | N | 9 | 4.0 | ..... | 2ck | 5ks | NE | NE | 0 | 0 | Fair | Rev. R. Mosley. |
| Peterboro, Ontario | 28.99 | 736.3 | 29.76 | 755.9 | 34.2 | 1.2 | 93 | NE | ..... | ..... | ..... | ..... | 10s | ..... | ..... | ..... | ..... | Snowing | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 28.66 | 733.0 | 29.56 | 750.8 | 39 | 3.9 | 91 | NE | 13 | 5.8 | ..... | ..... | 10n | ..... | NE | 0.49 | 12.4 | Light rain | H. Morgan. |
| Port Hastings, N. S | 29.74 | 755.4 | 29.79 | 756.7 | 36.8 | 2.7 | ..... | W | 2 | 0.9 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | Peter Grant. |
| Port Stanley, Ontario | 28.92 | 734.6 | 29.57 | 751.1 | 39 | 3.9 | 91 | NE | 13 | 5.8 | ..... | ..... | 10n | ..... | NE | 0.84 | 21.3 | Light rain | M. Payne. |
| *Quebec, Quebec | 29.45 | 748.0 | 29.78 | 756.4 | 33 | 0.6 | 100 | Calm | ..... | ..... | 0 | ..... | Fog | ..... | ..... | 0.02 | 0.5 | Dense fog | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.30 | 744.2 | 29.77 | 756.1 | 33 | 0.6 | 76 | N | 5 | 2.2 | ..... | ..... | 8s | ..... | NW | Inap. | Inap. | Cloudy | W. H. McIntyre. |
| St. Andrews, N. B | 29.78 | 756.4 | 29.83 | 757.7 | 35 | 1.7 | 89 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | Dr. Gove. |
| St. John, N. B | 29.67 | 753.6 | 29.84 | 757.9 | 35 | 1.7 | 90 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | ..... | 0.425 | 10.80 | Damp | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.99 | 736.3 | 29 72 | 754.9 | 34 | 1.1 | 95 | NE | 3 | 1.3 | ..... | ..... | 10ks | ..... | NE | 0.04 | 1.0 | Light rain | K. Stewart. |
| Stayner, Ontario | 29.92 | 734.6 | 29.72 | 754.9 | 33 | 0.6 | 96 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.44 | 11.2 | Light snow | R. J. Cole. |
| Stratford, Ontario | 28.33 | 719.6 | 29.63 | 752.6 | 35.7 | 2.1 | 93 | NE | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0.955 | 24.26 | Raining | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.74 | 755.4 | 29.77 | 756.1 | 38 | 3.3 | 94 | SW | 3 | 1.3 | ..... | ..... | 10ks | ..... | NW | 0.42 | 10.7 | Hazy | T. C. Hill. |
| *Toronto, Ontario | 29.28 | 743.7 | 29.68 | 753.9 | 38 | 3.3 | 92 | NE | 8 | 3.6 | ..... | ..... | 10n | ..... | NE | 0.78 | 19.8 | Heavy rain | Magnetic Observatory. |
| Windsor, N. S | 29.71 | 754.6 | 29.80 | 756.9 | 39.6 | 4.2 | 86 | SW | 2 | 0.9 | ..... | ..... | 8cs | ..... | ..... | 0.02 | 0.5 | Fair | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 32.0 | 0.0 | 100 | SE | ..... | ..... | ..... | 5ks | 5s;n | ..... | ..... | 0 | 0 | Cloudy | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Byt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0–10 | CLOUDS. Amount. Upper. 0–10 | CLOUDS. Amount. Low'r. 0–10 | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.40 | 746.7 | 29.62 | 752.3 | 41 | 5.0 | 91 | N | 2 | 0.9 | ..... | Haze | Sm'e | ..... | ..... | 0.01 | 0.3 | Smoky | |
| Alpena, Michigan | 29.13 | 739.9 | 29.79 | 756.7 | 30 | — 1.1 | 78 | N | 10 | 4.5 | ..... | 5ck | 2s | N | N | 0 | 0 | Fair | |
| Atlantic City, New Jersey | 29.70 | 754.4 | 29.72 | 754.9 | 50 | 10.0 | 100 | S | 20 | 8.9 | ..... | ..... | Fog | ..... | SW | 0 | 0 | Foggy | |
| Augusta, Georgia | 29.58 | 751.3 | 29.76 | 755.9 | 61 | 16.1 | 82 | S | 16 | 7.2 | ..... | ..... | 10s;d | ..... | NW;S | 0.13 | 3.3 | Threatening | |
| Baltimore, Maryland | 29.59 | 751.6 | 29.64 | 752.8 | 61 | 16.1 | 88 | S | 9 | 4.0 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Threatening | |
| Barnegat, New Jersey | 29.69 | 754.1 | 29.71 | 754.6 | 52 | 11.1 | 86 | SW | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Bismarck, Dakota | 28.33 | 719.6 | 30.18 | 766.6 | 22 | — 5.6 | 72 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Boise City, Idaho | 26.70 | 678.2 | 29.58 | 751.5 | 45 | 7.2 | 84 | W | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Boston, Massachusetts | 29.56 | 750.8 | 29.72 | 754.9 | 42.5 | 5.8 | 87 | SE | 4 | 1.8 | ..... | 9ck | Haze | W | ..... | Inap. | Inap. | Hazy | |
| Brackettville, Texas | 28.60 | 726.4 | 29.62 | 752.3 | 54 | 12.2 | 61 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 29.12 | 739.6 | 30.19 | 766.8 | 21 | — 6.1 | 86 | N | 8 | 3.6 | ..... | 2cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Brownsville, Texas | 29.73 | 755.1 | 29.80 | 756.9 | 61 | 16.1 | 94 | E | 4 | 1.8 | ..... | 0 | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Buffalo, New York | 28.83 | 732.3 | 29.52 | 749.8 | 40 | 4.4 | 100 | NE | 14 | 6.3 | ..... | ..... | 10n | ..... | NE | 0.54 | 13.7 | Light rain | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 53 | 11.7 | 86 | S | ..... | ..... | 1 | 0 | 8s | ..... | S | 0.28 | 7.1 | Fair | |
| Burlington, Vermont | 29.43 | 747.5 | 29.64 | 754.1 | 37 | 2.8 | 90 | N | 3 | 1.3 | ..... | ..... | 10n | ..... | Calm | 0.17 | 4.3 | Light rain | |
| Cairo, Illinois | 29.16 | 740.7 | 29.54 | 750.3 | 56 | 13.3 | 87 | W | 6 | 2.7 | ..... | ..... | 10s | ..... | W | 0.19 | 4.8 | Cloudy | |
| Camp Grant, Arizona | 24.79 | 629.6 | 29.59 | 751.6 | 43 | 6.1 | 61 | E | ..... | ..... | 1 | 0 | 5ks | ..... | W | 0.01 | 0.3 | Fair | |
| Camp Verde, Arizona | 26.42 | 671.1 | 29.91 | 759.7 | 39 | 3.9 | 91 | NW | ..... | ..... | 3 | ..... | 10n | ..... | Calm | 0.12 | 3.0 | Heavy rain | |
| Campo, California | 27.13 | 689.1 | 29.70 | 754.4 | 39 | 3.9 | 91 | SW | 3 | 1.3 | ..... | 0 | 5s | ..... | Calm | 0.65 | 16.5 | Fair | |
| Cape Hatteras, N. Carolina | 29.86 | 758.4 | 29.87 | 758.7 | 66 | 18.9 | 95 | S | 28 | 12.5 | ..... | 5k | 5s | SW | SW | 0 | 0 | Cloudy | |
| Cape Henry, Virginia | 29.73 | 755.1 | 29.76 | 755.9 | 67 | 19.4 | 79 | S | 20 | 8.9 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Cape Lookout, N. Carolina | 29.84 | 757.9 | 29.85 | 758.2 | 64 | 17.8 | 94 | S | 20 | 8.9 | ..... | 10cs;ok | 0 | SW | ..... | 0.03 | 0.8 | Cloudy | |
| Cape May, New Jersey | 29.70 | 754.4 | 29.73 | 755.1 | 52 | 11.1 | 93 | S | 24 | 10.7 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Charleston, South Carolina | 29.84 | 757.9 | 29.90 | 759.4 | 64 | 17.8 | 94 | W | 17 | 7.6 | ..... | ..... | 10n | ..... | Calm | 1.20 | 30.5 | Heavy rain | |
| Cheyenne, Wyoming | 23.84 | 605.5 | 29.78 | 756.4 | 22 | — 5.6 | 86 | SE | 20 | 8.9 | ..... | ..... | 10s | ..... | Calm | 0.08 | 2.0 | Cloudy | |
| Chicago, Illinois | 29.02 | 737.1 | 29.72 | 754.9 | 35 | 1.7 | 80 | NE | 21 | 9.4 | ..... | ..... | 10n | ..... | NE | 1.49 | 37.8 | Light snow | |
| Cincinnati, Ohio | 28.84 | 732.5 | 29.45 | 748.0 | 59 | 15.0 | 76 | S | 3 | 1.3 | ..... | ..... | 10ks | ..... | W | 0.18 | 4.6 | Threatening | |
| Cleveland, Ohio | 28.75 | 730.2 | 29.44 | 747.8 | 53 | 11.7 | 86 | SE | 9 | 4.0 | ..... | ..... | 10n | ..... | Calm | 0.39 | 9.9 | Light rain | |
| Concho, Texas | 27.96 | 710.3 | 29.68 | 753.9 | 43 | 6.1 | 6 | NE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.32 | 744.7 | 29.79 | 756.7 | 60 | 10.0 | 79 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Davenport, Iowa | 29.20 | 741.7 | 29.86 | 758.4 | 33 | 0.6 | 79 | NE | 16 | 7.2 | ..... | 9k | 4ks | NE | NE | 0.44 | 11.2 | Cloudy | |
| Deadwood, Dakota | 25.33 | 643.4 | ..... | ..... | 23 | — 5.0 | 86 | S | 1 | 0.4 | ..... | ..... | 10s | ..... | ..... | 0.08 | 2.0 | Cloudy | |
| Denison, Texas | 29.03 | 737.3 | 29.8 | 757.4 | 51 | 10.6 | 72 | NW | 10 | 4.5 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Denver, Colorado | 24.58 | 624.3 | 29.80 | 756.9 | 36 | 2.2 | 71 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.27 | 6.9 | Cloudy | |
| Detroit, Michigan | 28.89 | 733.8 | 29.55 | 750.6 | 37 | 2.8 | 90 | NE | 16 | 7.2 | ..... | ..... | 10n | ..... | NE | 0.48 | 12.2 | Light rain | |
| Dodge City, Kansas | 27.35 | 694.7 | 29.70 | 754.1 | 33 | 0.6 | 79 | N | 20 | 8.9 | ..... | ..... | 10s | ..... | N | 0.05 | 1.3 | Cloudy | |
| Dubuque, Iowa | 29.16 | 740.7 | 29.87 | 758.7 | 32 | 0.0 | 50 | NE | 14 | 6.3 | ..... | 8k | 0 | NE | ..... | 0.51 | 13.0 | Fair | |
| Duluth, Minnesota | 29.39 | 746.5 | 30.10 | 764.5 | 26 | — 3.3 | 63 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eagle Pass, Texas | 29.00 | 736.6 | 29.74 | 755.4 | 51 | 10.6 | 94 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 29.76 | 755.9 | 29.83 | 757.7 | 36 | 2.2 | 90 | NW | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Erie, Pennsylvania | 28.76 | 730.5 | 29.46 | 748.3 | 44 | 6.7 | 92 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | ..... | 0.37 | 9.4 | Light rain | |
| Escanaba, Michigan | 29.26 | 743.2 | 29.93 | 760.2 | 30 | — 1.1 | 67 | N | 18 | 8.0 | ..... | 5k | 0 | N | ..... | 0 | 0 | Fair | |
| Florence, Arizona | 28.04 | 712.2 | 29.64 | 752.8 | 59 | 15.0 | 38 | S | 15 | 6.7 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Fort Bayard, New Mexico | 23.85 | 605.8 | 29.85 | 758.2 | 36 | 2.2 | 62 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.19 | 639.8 | ..... | ..... | 37 | 2.8 | 53 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.27 | 743.4 | 29.79 | 756.7 | 49 | 9.4 | 78 | NW | 20 | 8.9 | ..... | ..... | 10s | ..... | NW | 0.31 | 7.9 | Cloudy | |
| Fort Griffin, Texas | 28.62 | 726.9 | 29.90 | 759.4 | 46 | 7.8 | 52 | NW | 8 | 3.6 | ..... | 2k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Fort St. Michael, Alaska | 29.68 | 753.9 | 29.72 | 754.9 | 17 | — 8.3 | 100 | NE | 14 | 6.3 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Hazy | |
| Fort Sill, Indian Territory | 28.66 | 728.0 | 29.78 | 756.4 | 43 | 6.1 | 83 | N | 20 | 8.9 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Galveston, Texas | 29.73 | 755.1 | 29.77 | 756.1 | 65 | 18.3 | 89 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.06 | 738.1 | 29.72 | 754.9 | 33 | 0.6 | 89 | NE | 16 | 7.2 | ..... | ..... | 10s | ..... | NE | 0.45 | 11.4 | Cloudy | |
| Indianapolis, Indiana | 28.69 | 728.7 | 29.43 | 747.5 | 55 | 12.8 | 81 | NW | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.16 | 4.1 | Light rain | |
| Indianola, Texas | 29.79 | 756.7 | 29.82 | 757.4 | 66 | 18.9 | 84 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.74 | 730.0 | 29.88 | 758.9 | 46 | 7.8 | 77 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Jacksonville, Florida | 29.81 | 757.2 | 29.84 | 757.9 | 70 | 21.1 | 80 | S | 18 | 8.0 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Keokuk, Iowa | 29.16 | 740.7 | 29.78 | 756.4 | 37 | 2.8 | 71 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0.22 | 5.6 | Cloudy | |
| Key West, Florida | 29.88 | 758.9 | 29.92 | 760.0 | 76 | 24.4 | 82 | S | 12 | 5.4 | ..... | 2k | Haze | S | S | 0 | 0 | Hazy | |
| Kittyhawk, North Carolina | 29.82 | 757.4 | 29.84 | 757.9 | 63 | 17.2 | 94 | SW | 23 | 10.3 | ..... | ..... | 10ks | ..... | SW | 0 | 0 | Cloudy | |
| Knoxville, Tennessee | 28.59 | 726.2 | 29.55 | 750.6 | 56 | 13.3 | 94 | E | 3 | 1.3 | ..... | ..... | 10ks | ..... | SW | 0.50 | 12.7 | Cloudy | |
| La Crosse, Wisconsin | 29.20 | 741.7 | 29.97 | 761.2 | 29 | — 1.7 | 78 | N | 10 | 4.5 | ..... | 8c | 0 | N | ..... | 0 | 0 | Fair | |
| La Mesilla, New Mexico | 25.81 | 655.6 | 29.96 | 761.0 | 38 | 3.3 | 83 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.31 | 744.5 | 29.64 | 752.8 | 64 | 17.8 | 83 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 29.00 | 736.6 | 29.85 | 758.2 | 40 | 4.4 | 73 | N | 14 | 6.3 | ..... | 0 | 8ks | ..... | N | Inap. | Inap. | Cloudy | |
| Los Angeles, California | 29.39 | 746.5 | 29.73 | 755.1 | 42 | 5.6 | 83 | N | 5 | 2.2 | ..... | 0 | 1s | ..... | Calm | 0.89 | 22.6 | Clear | |
| Louisville, Kentucky | 28.91 | 734.3 | 29.44 | 747.8 | 59 | 15.0 | 76 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | S | 0.06 | 1.5 | Threatening | |
| Lynchburg, Virginia | 29.02 | 737.1 | 29.67 | 753.6 | 63 | 17.2 | 72 | S | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.03 | 0.8 | Light rain | |
| Marquette, Michigan | 29.23 | 742.4 | 29.95 | 760.7 | 31 | — 0.6 | 69 | N | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mason, Texas | 28.19 | 716.0 | 29.96 | 761.0 | 47 | 8.3 | 77 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.28 | 743.7 | 29.59 | 751.6 | 55 | 12.8 | 87 | W | 6 | 2.7 | ..... | 0 | 2s | ..... | E | 0.90 | 22.9 | Clear | |
| Milwaukee, Wisconsin | 29.06 | 738.1 | 29.80 | 756.9 | 35 | 1.7 | 70 | NE | 28 | 12.5 | ..... | ..... | 10ks | ..... | NE | 0.80 | 20.3 | Cloudy | |
| Mobile, Alabama | 29.68 | 753.9 | 29.72 | 754.9 | 67.5 | 19.7 | 86 | W | 10 | 4.5 | ..... | 0 | 5s | ..... | W | 1.83 | 46.5 | Clearing | |
| Montgomery, Alabama | 29.44 | 747.8 | 29.66 | 753.4 | 64 | 17.8 | 91 | S | 6 | 2.7 | ..... | 0 | 8ks | ..... | SW | 1.12 | 28.4 | Fair | |
| Morgantown, West Virginia | 28.47 | 723.1 | 29.47 | 748.5 | 59 | 15.0 | 70 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Mt. Washington, N. H. | 24.42 | 594.9 | 29.78 | 756.4 | 29 | — 1.7 | 100 | W | 48 | 21.5 | ..... | ..... | 10n | ..... | W | 0.34 | 8.6 | Sleeting | |
| Nashville, Tennessee | 29.01 | 736.8 | 29.53 | 750.0 | 56 | 13.3 | 87 | SW | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 1.13 | 28.7 | Heavy rain | |
| New Haven, Connecticut | 29.58 | 751.3 | 29.70 | 754.4 | 56 | 10.0 | 79 | S | 2 | 0.9 | ..... | 8ck;hz | Haze | ..... | ..... | Inap. | Inap. | Hazy | |
| New London, Connecticut | 29.69 | 754.1 | 29.74 | 755.4 | 46 | 7.8 | 100 | SE | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0.01 | 0.3 | Dense fog | |
| New Orleans, Louisiana | 29.69 | 754.1 | 29.75 | 755.6 | 67 | 19.4 | 89 | SW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0.51 | 13.0 | Clear | |
| Newport, Rhode Island | 29.67 | 753.6 | 29.72 | 754.9 | 45 | 7.2 | 100 | SW | 5 | 2.2 | ..... | ..... | Fog | ..... | ..... | Inap. | Inap. | Foggy | |
| New York, New York | 29.53 | 750.0 | 29.70 | 754.4 | 52 | 11.1 | 86 | S | 5 | 2.2 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Norfolk, Virginia | 29.74 | 755.4 | 29.79 | 756.7 | 65 | 18.3 | 84 | S | 15 | 6.7 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| North Platte, Nebraska | 27.14 | 689.3 | 29.84 | 757.9 | 27 | — 2.8 | 76 | NE | 18 | 8.0 | ..... | ..... | 10s | ..... | NE | 0.34 | 8.6 | Cloudy | |
| Olympia, Washington Ter. | 29.56 | 750.8 | 29.60 | 751.8 | 39 | 3.9 | 100 | SE | 1 | 0.4 | ..... | ..... | Fog | ..... | Calm | 0.06 | 1.5 | Dense fog | |
| Omaha, Nebraska | 28.85 | 732.8 | 29.96 | 761.0 | 32 | 0.0 | 79 | N | 14 | 6.3 | ..... | 2c | 0 | Calm | ..... | 0.28 | 7.1 | Clear | |
| Oswego, New York | 29.28 | 743.7 | 29.59 | 751.6 | 42 | 5.6 | 83 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.45 | 11.4 | Cloudy | |
| Pembina, Dakota | 29.36 | 745.7 | 30.25 | 768.3 | 16 | — 8.9 | 83 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Philadelphia, Pennsylvania | 29.63 | 752.6 | 29.68 | 753.9 | 58 | 14.4 | 87 | S | 14 | 6.3 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Phœnix, Arizona | 28.56 | 725.4 | 30.38 | 771.6 | 46 | 7.8 | 84 | E | ..... | ..... | 3 | ..... | 10s | ..... | S | 0.51 | 13.0 | Light rain | |
| Pike's Peak, Colorado | 17.48 | 444.0 | 29.69 | 754.1 | 10 | —12.2 | 100 | NW | 14 | 6.3 | ..... | ..... | Fog | ..... | ..... | 0.06 | 1.5 | Foggy | |
| Pioche, Nevada | 23.58 | 598.9 | 29.35 | 745.5 | 30 | — 1.1 | 89 | S | 15 | 6.7 | ..... | ..... | 10s | ..... | S | 0.14 | 3.6 | Threatening | |
| Pittsburg, Pennsylvania | 28.68 | 728.5 | 29.45 | 748.3 | 54 | 12.2 | 74 | NE | 1 | 0.4 | ..... | ..... | 10s;fg | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Port Huron, Michigan | 28.93 | 734.8 | 29.69 | 754.8 | 34 | 1.1 | 100 | N | 24 | 10.7 | ..... | ..... | 10n | ..... | Calm | 1.51 | 38.4 | Heavy snow | |
| Portland, Maine | 29.74 | 755.4 | 29.79 | 756.7 | 42 | 5.6 | 83 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Threatening | |
| Portland, Oregon | 29.57 | 751.1 | 29.68 | 753.9 | 46 | 7.8 | 92 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Prescott, Arizona | 24.39 | 619.5 | 29.75 | 755.6 | 33 | 0.6 | 89 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.25 | 6.3 | Light snow | |
| Punta Rassa, Florida | 29.90 | 759.4 | 29.92 | 760.0 | 74 | 23.3 | 81 | S | 20 | 8.9 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Clear | |
| Red Bluff, California | 29.32 | 744.7 | 29.68 | 753.9 | 48 | 8.9 | 92 | SE | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.29 | 7.4 | Light rain | |
| Rochester, New York | 28.95 | 735.3 | 29.56 | 750.8 | 30 | 3.9 | 100 | NE | 9 | 4.0 | ..... | ..... | Fog | ..... | Calm | 0.39 | 9.9 | Foggy | |

## UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roseburg, Oregon | 29.10 | 739.1 | 29.65 | 753.1 | 50.6 | 10.3 | 93 | E | 2 | 0.9 | ..... | 0 | 8s | ..... | Calm | 0.11 | 2.8 | Cloudy | |
| Sacramento, California | 29.04 | 762.8 | 29.73 | 755.1 | 48 | 8.9 | 85 | SE | 7 | 0.4 | ..... | ..... | 10s | ..... | S | 0.36 | 9.1 | Cloudy | |
| St. Louis, Missouri | 29.08 | 738.6 | 29.65 | 753.1 | 43 | 6.1 | 83 | NW | 22 | 9.8 | ..... | ..... | 10s | ..... | NW | 0.64 | 16.3 | Cloudy | |
| St. Marks, Florida | 29.76 | 755.9 | 29.78 | 756.4 | 64 | 17.8 | 100 | NW | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 4.46 | 113.3 | Heavy rain | |
| St. Paul, Minnesota | 29.17 | 740.9 | 30.04 | 763.0 | 26 | — 3.3 | 69 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.18 | 639.6 | 29.51 | 749.5 | 44 | 6.7 | 76 | E | 8 | 3.6 | ..... | ..... | 10s | ..... | SW | 0.03 | 0.8 | Cloudy | |
| San Antonio, Texas | 29.11 | 739.4 | 29.70 | 754.4 | 50 | 10.0 | 93 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Diego, California | 29.72 | 754.9 | 29.79 | 756.7 | 49 | 9.4 | 85 | NE | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.56 | 14.2 | Light rain | |
| Sandusky, Ohio | 28.89 | 733.8 | 29.56 | 750.8 | 40 | 4.4 | 91 | NE | 24 | 10.7 | ..... | ..... | 10n | ..... | Calm | 0.48 | 12.2 | Light rain | |
| Sandy Hook, New Jersey | 29.67 | 753.6 | 29.69 | 754.1 | 53 | 11.7 | 93 | SW | 15 | 6.7 | ..... | 2c | Haze | W | ..... | 0 | 0 | Hazy | |
| San Francisco, California | 29.61 | 752.1 | 29.67 | 753.6 | 50 | 10.0 | 72 | SW | 4 | 1.8 | ..... | Haze | 0 | Calm | ..... | 0.03 | 0.8 | Hazy | |
| Santa Fé, New Mexico | 22.99 | 583.9 | 29.53 | 750.0 | 36 | 2.2 | 53 | N | 4 | 1.8 | ..... | 0 | 1ks | ..... | Calm | 0 | 0 | Clear | |
| Savannah, Georgia | 29.80 | 756.9 | 29.69 | 759.2 | 65 | 18.3 | 89 | NW | 6 | 2.7 | ..... | ..... | 10n | ..... | W | 0.17 | 4.3 | Heavy rain | |
| Shreveport, Louisiana | 29.54 | 750.3 | 29.76 | 755.9 | 59 | 15.0 | 65 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.43 | 10.9 | Clear | |
| Smithville, North Carolina | 29.81 | 757.2 | 29.84 | 757.9 | 63 | 17.2 | 89 | S | 24 | 10.7 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Springfield, Massachusetts | 29.60 | 749.3 | 29.63 | 752.6 | 46 | 7.8 | 77 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0.02 | 0.5 | Foggy | |
| Stockton, Texas | 26.78 | 680.2 | 29.78 | 756.4 | 47 | 8.3 | 48 | SW | 4 | 1.8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Thatcher's Island, Mass. | 29.68 | 753.9 | 29.74 | 755.4 | 42 | 5.6 | 83 | SE | 4 | 1.8 | ..... | 2k | 8s | SW | SW | 0 | 0 | Foggy | |
| Toledo, Ohio, | 28.86 | 733.0 | 29.53 | 750.0 | 39 | 3.9 | 91 | NE | 14 | 6.3 | ..... | ..... | 10n | ..... | NE | 0.05 | 1.3 | Light rain | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 38 | 3.3 | 63 | SE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tybee Island, Georgia | 29.84 | 757.9 | 29.87 | 758.7 | 64 | 17.8 | 94 | W | 6 | 2.7 | ..... | ..... | 10ks | ..... | SW | 0.35 | 8.9 | Threatening | |
| Umatilla, Oregon | 29.31 | 744.5 | ..... | ..... | 40 | 4.4 | 91 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.44 | 747.8 | 29.70 | 754.4 | 61 | 16.1 | 71 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.71 | 18.0 | Clear | |
| Virginia City, Montana | 23.95 | 608.3 | 29.48 | 747.5 | 31 | — 0.6 | 89 | NE | 14 | 6.3 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Visalia, California | 29.35 | 745.5 | 29.73 | 755.1 | 42 | 5.6 | 83 | SE | 2 | 0.9 | ..... | 0 | 1s | ..... | Calm | 0.35 | 8.9 | Clear | |
| Washington, D. C. | 29.64 | 750.3 | 29.65 | 753.1 | 61 | 16.1 | 88 | S | 14 | 6.3 | ..... | ..... | 10ks;hs | ..... | SW;S | 0 | 0 | Hazy | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 39 | 3.9 | 73 | SW | ..... | ..... | 6 | 0 | 8ks | ..... | Calm | 0.22 | 5.6 | Fair | |
| Wilmington, N. Carolina | 29.79 | 756.9 | 29.83 | 757.7 | 65 | 18.3 | 89 | W | 13 | 5.8 | ..... | ..... | 10cs | ..... | SW | 0 | 0 | Threatening | |
| Winnemucca Nevada | 25.17 | 639.3 | 29.53 | 750.0 | 38 | 3.3 | 91 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | S | 0.42 | 10.7 | Cloudy | |
| Wood's Holl, Mass. | 29.69 | 754.1 | 29.75 | 755.6 | 46 | 7.8 | 100 | SW | 10 | 4.5 | ..... | ..... | Fog | ..... | Calm | 0.10 | 2.5 | Foggy | |
| Yankton, Dakota | 28.80 | 731.5 | 30.17 | 766.3 | 23 | — 5.0 | 73 | NW | 8 | 3.6 | ..... | 2c | 0 | NW | ..... | 0 | 0 | Fair | |
| Yuma, Arizona | 29.56 | 750.8 | 29.73 | 755.1 | 49 | 9.4 | 62 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 29.67 | 753.6 | 29.72 | 754.9 | 18.0 | — 7.8 | 92 | NW | 20 | 8.9 | ..... | 2ck | 0 | SE | ..... | 0 | 0 | Fair | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 29.80 | 758.4 | 29.88 | 758.9 | 77 | 25.0 | 86 | SE | 7.2 | 3.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.05 | 763.3 | 30.06 | 763.5 | 79 | 26.1 | 86 | Calm | 0 | 0 | ..... | 8c | 5s | SE | NW | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.89 | 759.2 | 29.97 | 761.2 | 80 | 26.7 | ..... | NE | 10 | 4.5 | ..... | ..... | ..... | ..... | ..... | 0.10 | 2.5 | Cloudy | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | ..... | ..... | 30.00 | 762.0 | 83 | 28.3 | 79 | NE | ..... | ..... | 3 | 5k | 7ks | E | ..... | 0 | 0 | ½ cloudy | C. J. Hering. |
| Batavia, Dutch Guiana, S. A. | 30.03 | 762.8 | 30.04 | 763.0 | 80.6 | 27 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.266 | 6.75 | Cloudy | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.20 | 640.1 | ..... | ..... | 69.8 | 21.0 | 86 | Calm | ..... | ..... | 0 | ..... | 10s;n | ..... | ..... | 0.87 | 22.1 | ..... | Thomas Herran |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medillin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 metres; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,028 (?) ft., or 312.7 (?) m.; Camp Grant, 4,683 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,560 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho, 1,760 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.6 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,100.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.38 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | BAROMETER. As read off. Inches. | BAROMETER. As read off. Millimeters. | BAROMETER. Attached Thermometer. Fahrenheit. | BAROMETER. Attached Thermometer. Centigrade. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er —10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Up'er From— | CLOUDS. Direction. Low'r From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | SEA-SWELL. Character. | SEA-SWELL. Direction from— | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.66 | 753.4 | 47 | 8.3 | 47 | 8.3 | 92 | NNE | 7 | 3.1 | .... | ..... | 8ks | ..... | E | 0.192 | 4.85 | ..... | ..... | Cloudy..... | |
| Navy Yard, Pensacola, Fla. | 29.82 | 757.4 | 68 | 20.0 | 68 | 20.0 | 95 | WSW | ..... | ..... | .... | ..... | 5 | ..... | W | 0.01 | 0.3 | ..... | ..... | Cloudy..... | |
| Navy Yard, Portsmouth, N.H | 29.88 | 758.9 | 79 | 26.1 | 41 | 5.0 | 82 | NE | 2 | 0.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Naval Hospital, Yokohama, Japan | 30.19* | 766.8* | 55 | 12.8 | 47.8 | 8.8 | 63 | ESE | ..... | ..... | 3 | ..... | 8ks | ..... | NW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Adams. Panama | 29.93 | 760.2 | 82 | 27.8 | 82 | 27.8 | 83 | NW | .... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Alliance, Piraeus, Greece | 30.11‡ | 764.8‡ | ..... | ..... | 61 | 16.1 | 61 | SW | ..... | ..... | 2-3 | ..... | 0 | ..... | S&W | ..... | ..... | ..... | ..... | Pleasant..... | |
| Ashuelot. Shanghai, China | 30.10* | 764.5* | 53 | 11.7 | 52 | 11.1 | 86 | N | ..... | ..... | 0-1 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Raining..... | |
| Canonicus, New Orleans, La. | 29.76 | 755.9 | 50 | 10.0 | 67 | 19.4 | 95 | SW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Colorado, New York, N. Y. | 29.67‡ | 753.6‡ | ..... | ..... | 53 | 11.7 | 86 | SSW | 1 | 0.4 | ..... | ..... | 8 | ..... | SW | 0 | 0 | ..... | ..... | Foggy ..... | |
| Constitution, N. 49° 26′ W. 5° 43′ | 29.33‡ | 745.0‡ | ..... | ..... | 44 | 6.7 | 100 | E | ..... | ..... | 3 | ..... | 7 | ..... | E | ..... | ..... | Smooth | SE | Cloudy..... | |
| Despatch, Constantinople, Turkey. | 30.16 | 766.1 | 81 | 27.2 | 49 | 9.4 | 93 | SW | ..... | ..... | 4 | ..... | 2 | ..... | SW | ..... | ..... | Smooth | ..... | Fair ..... | |
| Enterprise, Pensacola, Florida | 29.71‡ | 754.6‡ | ..... | ..... | 68 | 20.0 | 95 | WSW | ..... | ..... | 5 | ..... | 5 | ..... | W | ..... | ..... | Smooth | ..... | Fair..... | |
| Franklin, Norfolk, Va. | 29.78‡ | 756.4‡ | ..... | ..... | 66 | 18.9 | 79 | SSW | 15.2 | 6.8 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Gettysburg Valetta, Malta | 30.03‡ | 762.7‡ | ..... | ..... | 65 | 18 3 | 100 | SSE | ..... | ..... | 3 | ..... | 5 | ..... | S | 0 | 0 | ..... | ..... | Fair ..... | |
| Guard, Porto Grande, Cape Verdo Islands. | 30.05 | 763.3 | 76 | 24.4 | 75 | 23.9 | 72 | ENE | ..... | ..... | 2 | ..... | 2 | ..... | ENE | ..... | ..... | ..... | ..... | Clear..... | |
| Marion, Smyrna, Turkey | 30.08 | 764.0 | 58 | 14.4 | 54 | 12.2 | 49 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | Light | Light | Smooth | NNW | Clear ..... | |
| Michigan, Erie, Pa. | 28.98 | 736.1 | 65 | 18.3 | 45 | 7.2 | 76 | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ENE | ..... | ..... | ..... | ..... | Raining..... | |
| Monongahela. Hong-Kong, China. | 29.99* | 761.7* | 70 | 21.1 | 70 | 21.1 | 80 | ENE | ..... | ..... | 1-2 | ..... | 10 | ..... | ..... | Light | Light | ..... | ..... | Misty..... | |
| New Hampshire, Port Royal, S. C. | 30.08 | 764.0 | 67 | 19.4 | 66 | 18.9 | 100 | WNW | 10 | 4.5 | ..... | ..... | 10 | ..... | ..... | 0.02 | 0.5 | ..... | ..... | Rainy ..... | |
| Omaha, N. 15° 30′, W. 59° 03′ | 30.12* | 765.0* | 82 | 27.8 | 82 | 27.8 | 69 | ESE | 3 | 1.3 | ..... | ..... | 4 | ..... | E | 0 | 0 | Smooth | ..... | Bright..... | |
| Onward, Callao, Peru | 29.98† | 761.5† | ..... | ..... | 74 | 23.3 | 86 | SE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, N. 26° 21′, W. 96° 10′ | 29.82‡ | 757.4‡ | ..... | ..... | 67 | 19.4 | 100 | SSE | ..... | ..... | 1 | ..... | ..... | ..... | S | ..... | ..... | Long | SE | Foggy ..... | |
| Palos, Shanghai, China | 30.14* | 765.5* | 62 | 16.7 | 49 | 9.4 | 100 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Drizzling..... | |
| Pensacola, Honolulu, H. I. | 30.21 | 767.3 | 72 | 22.2 | 70 | 21.1 | ?? | NE | 7 | 3.1 | ..... | ..... | 4 | ..... | NE | 0.01 | 0.3 | ..... | ..... | Cloudy..... | |
| Plymouth. Norfolk, Va. | 29.84‡ | 757.9‡ | ..... | ..... | 67 | 19.4 | 79 | SSW | ..... | .... | 3-4 | ..... | 10 | ..... | SSW | ..... | ..... | ..... | ..... | Misty..... | |
| Powhatan, | | | | | | | | | | | | | | | | | | | | | |
| Ranger. Amoy, China | 30.07* | 763.8* | ..... | ..... | 68 | 20.0 | 90 | SE | ..... | ..... | 0-1 | ..... | 3 | ..... | Calm | ..... | ..... | ..... | ..... | D. clouds..... | |
| Rio Bravo, Brownsville, Texas | ..... | ..... | ..... | ..... | 61 | 16.1 | 100 | E | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Foggy ..... | |
| Santee. Annapolis, Md | 29.74* | 755.4* | 62 | 16.7 | 54 | 12.2 | 93 | SW | ..... | ..... | 3 | ..... | 10 | ..... | NE | 0 | 0 | ..... | ..... | Hazy..... | |
| Saratoga, Washington, D. C. | 29.60* | 751.8* | ..... | ..... | 65 | 18.3 | 94 | SW | ..... | ..... | 4 | ..... | 10 | ..... | SW | 0 | 0 | ..... | ..... | Cloudy..... | |
| St. Louis, League Island, Pa | 29.68 | 753.9 | 63 | 17.2 | 56 | 13.3 | 94 | S | 10 | 4.5 | ..... | ..... | 10 | ..... | S | 0 | 0 | ..... | ..... | Misty..... | |
| Supply, Havre, France | 29.47 | 748.5 | 47 | 8.3 | 42 | 5.6 | 91 | E | ..... | ..... | 2 | ..... | 10 | ..... | E | ..... | ..... | ..... | ..... | Cloudy..... | |
| Swatara, N. 10° 35′ W. 77° 53′ | 29.97* | 761.2* | ..... | ..... | 82 | 27.8 | 83 | NNE | ..... | ..... | 4 | ..... | 3 | ..... | N&E | ..... | ..... | Mod'ate | N&E | D. clouds..... | |
| Tennessee, Colombo, Ceylon | 29.89* | 759.2* | 88 | 31.1 | 87 | 30.6 | 72 | SW | 2 | 0.9 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | Slight | W | D. clouds..... | |
| Trenton, Piraeus, Greece | 30.12‡ | 765.0‡ | ..... | ..... | 59 | 15.0 | 88 | NW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Hazy..... | |
| Tuscarora, N. 24° 15′ 31″ W. 110° 20′ 47″ | 29.96 | 761.0 | 64 | 17.8 | 62 | 16.7 | 77 | SSW | ..... | ..... | 2 | ..... | 2 | ..... | Calm | ..... | ..... | Smooth | ..... | Fair ..... | |
| Vandalia, Palermo, Sicily | 30.06‡ | 763.5‡ | ..... | ..... | 68 | 20.0 | 47 | WSW | ..... | ..... | 4 | ..... | 2 | ..... | WSW | ..... | ..... | ..... | ..... | Fair ..... | |
| Wabash, Boston, Mass. | 29.72‡ | 754.9‡ | ..... | ..... | 44 | 6.7 | 84 | SE | 4 | 1.8 | ..... | ..... | 10 | ..... | SE | 0.02 | 0.5 | ..... | ..... | Cloudy ..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | Force. | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Panama, Haro Strait, B. C. | | | 29.72* | 754.9* | | | | N | | | 2 | | 3 | | NW | | | Fair | Capt. Cobb. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Tokio, N. 22° 23′, E. 115° 37′ | | | | | 73 | 22.8 | | E | | | 3 | | 10 | | NE | Smooth | NE | Overcast | Capt. Dearborn. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Corrected for temperature and elevation; instrumental error not known.

**WHITE STAR LINE MARINE SERIES.**

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, N. 47° 00′ W. 38° 20′ | | | 30.18† | 766.6† | 59 | 15.0 | 88 | SE | | | 6 | | 10k | | ESE | High | ESE | Fair | Capt. W. H. Thompson |
| S. S. Celtic, New York, N. Y. | | | 29.71† | 754.6† | 44 | 6.7 | | SW | | | 3 | | | NW | | | | D clouds | Capt. R. Gleadell. |
| S. S. Germanic, N. 42° 30′, W. 56° 43′ | | | 30.02† | 762.5† | 46 | 7.8 | 77 | S | | | 4 | | 10 | | | None | | Overcast | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Aneroid.

**OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.**

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, N. 40° 12′, E. 175° 13′ | | | 29.37* | 746.0* | | | | NW | | | 6 | | Heavy | | NW | Mod'ate | NW | Hailing | Capt. John Metcalf. |
| S. S. Gaelic, Off Hong-Kong, China | | | 29.82† | 757.4† | 73 | 22.8 | ?? | Var. | | | 2 | | Fog | | | Smooth | NE | Foggy | Capt. W. H. Kidley |
| S. S. Oceanic, N. 37° 47′, W. 164° 13′ | | | 29.76 | 755.9 | 53 | 11.7 | 93 | SW | | | 5 | | 3 | | SW | High | S to WNW | Squally | Capt. H. Parsell. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

**NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.**

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg, N. 44° 24′, W. 17° 51′ | | | 29.67 | 753.6 | 54.5 | 12.5 | 71 | N | | | 7 | | ck | | N | High | N | Rain-squalls | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAME OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | Character. | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois, N. 51° 42', W. 8° 16' | | | 29.46* | 748.3* | 51 | 10.6 | 72 | N | | | 5 | 5 | | N | | Mod'ate | SW | D. clouds | Captain Shackelford. |
| S. S. Indiana, Liverpool | | | 29.74† | 755.4† | 38 | 3.3 | 81 | NNW | | | 4 | 7 | | N | | | | Cloudy | Captain Sargent. |
| S. S. Ohio, Philadelphia, Pa | | | 29.97 | 761.2 | 35 | 1.7 | 90 | WNW | | | 4 | 8 | | WNW | | | | Clear? | Captain Morrison. |
| S. S. Pennsylvania | | | | | | | | | | | | | | | | | | | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid. †Aneroid; unreliable, corrected for elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
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**ALLAN LINE MARINE SERIES.**

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| S. S. Scandinavian, Liverpool | | | 29.33 | 745.0 | 37 | 2.8 | | E | | | 6 | | 10 | | E | | | Snowing | Capt. W. Richardson. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES.** (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller. Crisfield, Md. | | | 29.71 | 754.6 | 61 | 16.1 | 77 | SW | 15 | 6.7 | | | Haze | | | | | Hazy | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 15', W. 67° 19' | | | 29.47 | 748.5 | 20.5 | — 6.4 | 100 | W | 6.0 | 2.7 | | | 10s | | Calm | | | Snowing | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.*

Our 8th place

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 27, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | | | 30.06 | 763.4 | 63.3 | 17.4 | | W | | | 1 | | 3 | | | 0 | 0 | Pretty fair | Dr. Ollive. |
| Nemours | | | 29.91 | 759.7 | 65.5 | 18.6 | 67 | NW | | | 1 | | 2 | | | 0 | 0 | Fair | Michel. |
| Algiers | | | 29.91 | 759.8 | 71.2 | 21.8 | 55 | ESE | | | 1 | | 5 | | | 0 | 0 | Cloudy | Towilliere. |
| La Calle | | | 30.04 | 763.0 | 66.1 | 13.4 | 73 | ENE | | | 7 | | 3 | | | 0.04 | 1. | Pretty fair. | Boulangeot. |
| Tunis | | | 30.22 | 767.6 | 61.9 | 16.6 | 53 | W | | | 4 | | 6 | | | 0 | 0 | Cloudy | Jacques. |
| Sfax | | | 30.20 | 767.0 | 66.2 | 19.0 | | W | | | 3 | | 2 | | | 0 | 0 | Fair | Gau. |
| Saida | | | 29.99 | 761.7 | 62.4 | 16.9 | 64 | NNE | | | 5 | | 0 | | | 0 | 0 | Clear | Herbin. |
| Tebessa | | | 30.13 | 765.4 | | | | SW | | | 1 | | 1 | | | 0 | 0 | Very fair. | Bourgeois. |
| Geriville | | | 30.19 | 766.7 | 59.4 | 15.2 | 85 | W | | | 5 | | 5 | | | 0 | 0 | Cloudy | Lemaillot. |
| Laghouat | | | 30.17 | 766.3 | 66.9 | 19.4 | 28 | ENE | | | 3 | | 1 | | | 0 | 0 | Very fair | Guyot. |
| Biskra | | | 30.21 | 767.2 | 66.9 | 19.4 | 81 | W | | | 3 | | 0 | | | 0 | 0 | Clear | Chanvaux. |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.44 | 747.8 | 30.00 | 762.1 | 44.1 | 6.7 | 24 | SW | | | 3 | | 4 | | | 0 | 0 | | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.17 | 740.8 | 29.96 | 760.9 | 38.1 | 3.4 | 60 | NE | | | 1 | | 4 | | | 0 | 0 | | Dr. Wierzbiski. |
| Eperies | 28.94 | 735.1 | 29.85 | 758.2 | 34.9 | 1.6 | 75 | N | | | 4 | | 10k;s | | S | 0 | 0 | | Julius Mikolik. |
| Gratz | 28.78 | 729.8 | 30.01 | 762.3 | 42.8 | 6.0 | 34 | NW | | | 5 | | 2 | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28.15 | 715.0 | 29.62 | 752.3 | 32.2 | 0.1 | 81 | NNW | | | 4 | | 10 | | | 0.201 | 5.10 | | Prof. Reissenberg |
| Kremsmünster | 28.65 | 727.6 | 30.04 | 762.9 | 37.0 | 2.8 | 89 | W | | | 3 | | 6 | | | 0 | 0 | | Prof. C. Wagner |
| Lemberg | 28.74 | 729.9 | 29.76 | 755.9 | 32.0 | 0.0 | 85 | S | | | 1 | | 10 | | | 0.075 | 1.9 | | Dr. T. Stanecki. |
| Pola | 29.95 | 760.6 | 30.06 | 763.5 | 48.2 | 9.0 | 39 | WNW | | | 2 | | 0 | | | 0 | 0 | | I.R.Hydrographic Office |
| Szathmar | 29.26 | 743.3 | 29.74 | 755.5 | 35.6 | 2.0 | 68 | NW | | | 4 | | 10 | | | 0.209 | 5.3 | | Johann Tamas, S. J. |
| Szegedin | 29.52 | 749.8 | 29.81 | 757.1 | 42.8 | 6.0 | 59 | N | | | 3 | | 8 | | | 0.012 | 0.30 | | Karl Stancel. |
| Trieste | 29.97 | 761.2 | 30.07 | 763.8 | 46.9 | 8.3 | 63 | WSW | | | 1 | | 0 | | | 0 | 0 | Fair | P. Busin. |
| Vienna | 29.29 | 744.0 | 30.04 | 763.0 | 36.3 | 2.4 | 68 | W | | | 3 | | 10 | | | 0.031 | 0.8 | Graupelnd. | I. R. Central Met. Obs'y. |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,255.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.35 | 720.0 | 29.89 | 759.3 | 37.2 | 2.9 | 85 | SW | | | 3 | | 10 | | | 0.146 | 3.7 | Light snow. | Prof. M. Passau. |
| Brussels | 29.58 | 751.2 | 29.78 | 756.5 | 33.4 | 0.8 | 95 | W | | | 3 | | 10 | | | 0.118 | 3.0 | Snowing | Royal Observatory. |
| Furnes | 29.79 | 756.7 | 29.82 | 757.3 | 39.7 | 4.3 | 85 | W | | | 2 | | 10 | | | 0.067 | 1.7 | | M. E. de Cae. |
| Maeseyck | 29.63 | 752.7 | 29.76 | 755.9 | 41.7 | 5.4 | 74 | SW | | | 2 | | 7 | | | 0.165 | 4.2 | | M. Pierrot. |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4? set. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

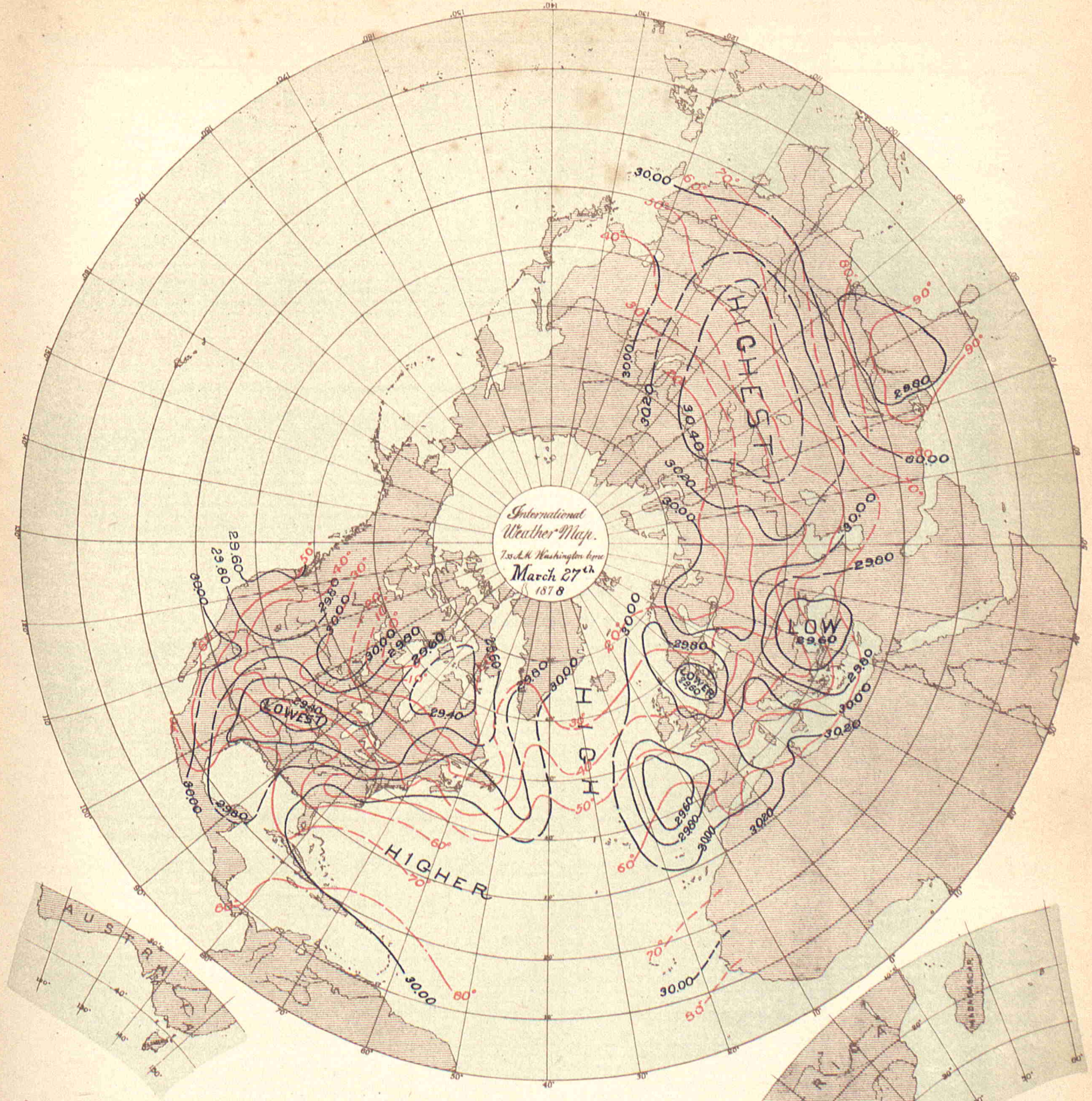
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E. Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.72 | 754.9 | 29.82 | 757.4 | 35.7 | 2.1 | ..... | WNW | 17 | 7.6 | ..... | ..... | 5 | ..... | ..... | 0.005 | 0.13 | Blue sky..... | W. Boswell. |
| Ardrossan | 29.82 | 757.4 | 29.84 | 757.9 | 43 | 6.1 | ..... | W | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.89 | 759.2 | 41.3 | 5.2 | ..... | NNE | 9 | 4.0 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | S. Call, for Dr. Robinson. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.85 | 758.2 | 41.9 | 5.5 | ..... | NW | 6 | 2.7 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 29.88 | 758.9 | 44.8 | 7.1 | ..... | Calm | ..... | ..... | 0 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds .... | J. Dreyer. |
| Bradford, Yorkshire | 29.37 | 746.0 | 29.77 | 756.1 | 40.9 | 4.9 | ..... | N | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0.18 | 4.6 | D. clouds..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.91 | 759.7 | 29.94 | 760.5 | 83.5 | 28.6 | ..... | NE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.31 | 757.2 | 47.0 | 8.3 | ..... | N | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | H. Todd. [H. C. |
| Cardington | ..... | ..... | 29.83 | 757.7 | 44.6 | 7.0 | ..... | N | ..... | ..... | 1 | ..... | 1 | ..... | ..... | Blank | Blank | Blue sky..... | John McLaren. |
| Chatham, School M. E. | 29.70 | 754.4 | 29.83 | 757.7 | 43.2 | 6.2 | ..... | W | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.41 | 721.6 | 29.92 | 760.0 | 38.0 | 3.3 | ..... | NW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | Raining..... | Alexander Watt. |
| Donaghadee | 29.81 | 757.2 | 29.84 | 757.9 | 42 | 5.6 | ..... | NW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 29.78 | 756.4 | 29.80 | 756.9 | 42 | 5.6 | ..... | NW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded.. | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.81 | 757.2 | 43.9 | 6.6 | ..... | NW | ..... | ..... | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | Thomas Mackereth. |
| Falmouth, Observatory | 29.64 | 752.8 | 29.87 | 758.7 | 49.3 | 9.6 | ..... | WNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | The Staff. |
| Fort Napier, (Natal) | 27.80 | 706.1 | 30.00 | 762.0 | 82.0 | 27.8 | ..... | NE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.67 | 753.6 | 29.90 | 759.4 | 89 | 31.7 | ..... | NW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | |
| Galway, Queen's College | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.87 | 758.7 | 29.92 | 760.0 | 58.3 | 14.8 | ..... | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Corpl. C. Aitken, A. H. C. |
| Glasgow, Observatory | 29.64 | 752.8 | 29.84 | 757.9 | 41.1 | 5.1 | ..... | WSW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Blue sky.. .. | D. G. Maclean. |
| Great Yarmouth | 29.76 | 755.9 | 29.77 | 756.1 | 37 | 2.8 | ..... | N | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | Snowing..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.64 | 752.8 | 29.82 | 757.4 | 46.3 | 7.9 | ..... | N | ..... | ..... | 1 | ..... | 5 | ..... | ..... | Blank | Blank | D. clouds.... | The Staff, for G. B. Airy. |
| Guernsey | 29.64 | 752.8 | 29.86 | 758.4 | 48.5 | 9.2 | ..... | WSW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | Dr. S. E. Hoskins, F. R. S. |
| Helston | ..... | ..... | 29.91 | 759.7 | 50 | 10.0 | ..... | SW | ..... | ..... | 4 | ..... | 2k | ..... | ..... | 0.07 | 1.8 | Fine..... | M. P. Moyle. |
| Holyhead | 29.80 | 756.9 | 29.86 | 758.4 | 43 | 6.1 | ..... | N | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | John Tilston. |
| Jersey | 29.63 | 752.6 | 29.92 | 760.0 | 48.0 | 8.9 | ..... | WSW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 29.82 | 757.4 | 44.2 | 6.8 | ..... | NNW | 10 | 4.5 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff. |
| Kingstown | 29.84 | 757.9 | 29.87 | 758.7 | 44 | 6.7 | ..... | ENE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.82 | 757.4 | 43.9 | 6.6 | ..... | NE | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | Wm. J. Harrison, F. G. S. |
| Malta, (Mediterranean) | 30.08 | 764.0 | 30.16 | 766.1 | 58.0 | 14.4 | ..... | NW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | Sgt. Fred. Travis, A. H. |
| Nairn | 29.77 | 756.1 | 29.86 | 758.4 | 36 | 2.2 | ..... | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | ..... | ..... | ¼ clouded.. | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 30.08 | 763.5 | 74.5 | 23.6 | ..... | SE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | C. S. Duncombe. |
| Nottingham, Observatory | 29.79 | 756.7 | 29.98 | 761.5 | 43.2 | 6.2 | ..... | N | ..... | ..... | 3 | ..... | 10n | ..... | ENE | 0.082 | 2.08 | Snowing..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.29 | 744.0 | 29.32 | 757.4 | 43.8 | 6.6 | ..... | NNE | ..... | ..... | 3 | ..... | 1 | ..... | ..... | ..... | ..... | Hazy..... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.83 | 757.7 | 45 | 7.2 | ..... | N | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | Mr. Lucas. |
| Plymouth | 29.78 | 756.4 | 29.86 | 758.4 | 45.0 | 7.2 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Merrifield. |
| Roche's Point | 29.82 | 757.4 | 29.87 | 758.7 | 47 | 8.3 | ..... | N | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Fine..... | W. Kennedy. |
| Saint Ann's Head | 29.68 | 753.9 | 29.84 | 757.9 | 46 | 7.8 | ..... | N | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | John C. Walker. |
| Sandwick Manse, (Orkneys.) | ..... | ..... | 29.86 | 758.4 | 35.1 | 1.7 | ..... | NE | 19 | 8.5 | ..... | ..... | 0 | ..... | ..... | Blank | Blank | Blue sky..... | Rev. C. Clouston, L.L. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.52 | 749.8 | 47.2 | 8.4 | ..... | SW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | Blank | Blank | D. clouds.... | Sergt. W. H. Lyne. |
| Sheffield | 29.56 | 750 8 | 29.84 | 757.9 | 44.2 | 6.8 | ..... | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | D. clouds.... | W. F. Cooper. |
| Silloth Rectory | 29.81 | 757.2 | 29.84 | 757.9 | 43.4 | 6.3 | 57 | NW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | D. clouds.... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.44 | 747.8 | 29.84 | 757.9 | 40.2 | 4.6 | ..... | N | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. S. J. Perry. |
| Stornoway, Lewis C., (Hebr.) | ..... | ..... | 29.86 | 758.4 | 37 | 2.8 | ..... | NNW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded.. | John Sutherland. |
| Stratfield Turgiss | 29.61 | 752.1 | 29.83 | 757.7 | 46.4 | 8.0 | ..... | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky.... | Rev. C. H. Griffith, F. M. |
| Thurso | ..... | ..... | 29.85 | 758.2 | 40 | 4.4 | ..... | NNE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 29.88 | 758.9 | 52 | 11.1 | ..... | W | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 29.88 | 758.9 | 48.3 | 9.1 | ..... | NNE | 15 | 6.7 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.44 | 747.8 | 69.0 | 20.6 | 78 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0.08 | 2.0 | ..... | Francis Abbott, F. R. A. S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.74 | 755.4 | 29.93 | 760.2 | 80.7 | 27.1 | 82 | ENE | 4.0 | 1.8 | ..... | 10 | 4 | ..... | NE | 0.65 | 16.5 | Overcast..... | C. Meldrum. |
| Melbourne, Observatory | 29.71 | 754.6 | 29.80 | 756.9 | 59.0 | 15.0 | 80 | WSW | 5 | 2.2 | ..... | ..... | 3 | ..... | ..... | 0.29 | 7.4 | Fine..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft, or 670.6 m.

| Marine Series. Vessels. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Algeria | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. C. Prehn. |
| S. S. Peruvian, N. 46° 10′, W. 43° 40′ | ..... | ..... | 29.85 | 758.2 | 52 | 11.1 | ..... | SE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 5 | SSE | Overcast..... | Capt. W. H. Smith, [R. N. |
| Royal Alice | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire, N. 39° 25′ W. 66° 20′ | ..... | ..... | 30.13 | 765.3 | 51 | 10.6 | ..... | NE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | 1 | NW | D. clouds..... | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the cooperation of Senor Federico Maisoh, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.19 | 665.2 | | | 69.4 | 20.8 | 83 | NE | | | 2 | p | | | | 0 | 0 | | Federico Maisoh. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.58 | 751.3 | 29.63 | 752.5 | 35.6 | 2.0 | 89 | SSW | | | 6 | | 10 | | | | | Snowing. | |
| Farõe | 29.35 | 745.5 | 29.37 | 746.0 | 37.0 | 2.8 | 94 | SW | | | 4 | | 10 | | | | | | |
| Godthaab, (Greenland) | 29.93 | 760.1 | 29.97 | 761.2 | 39.0 | 3.9 | 80 | Calm | | | 0 | | 10 | | | | | | |
| Stykkisholm, (Iceland) | 30.07 | 763.6 | 30.11 | 764.7 | 27.1 | — 2.7 | 96 | W | | | 4 | | 10 | | | | | | |
| Thorshavn, (Farõe) | 29.89 | 759.1 | 29.92 | 760.0 | 35.1 | 1.7 | 71 | NE | | | 2 | | 10 | | | | | | |
| Vestervig | 29.24 | 742.7 | 29.41 | 747.0 | 32.7 | 0.4 | 96 | NNE | | | 6 | | 10 | | | | | Snowing. | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the cooperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.44 | 747.8 | 29.99 | 761.8 | 44.6 | 7 | 73 | SW | | | 3 | | 5 | | | 0 | 0 | Cloudy | Collignon, Director. |
| Amiens, Normal School | 29.72 | 754.8 | 29.83 | 757.7 | 48.9 | 9.4 | 66 | W | | | 2 | | 8 | | W | 0.213 | 5.4 | Very cloudy | Bonvarne, Director. |
| Avignon, Normal School | 29.08 | 761.4 | 30.06 | 763.4 | 53.2 | 11.8 | 86 | SSW | | | 2 | | 10 | | | 0 | 0 | Covered | Mr. Giraud, Director |
| Bar-sur-Seine | 29.39 | 746.6 | 29.96 | 761.0 | 45.1 | 7.3 | 61 | SW | | | 2 | | 10 | | SW | 0 | 0 | Covered | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 46.2 | 7.9 | 57 | W | | | 4 | | 8 | | | 0 | 0 | Very cloudy | Normal School. |
| Besançon | 29.13 | 740.0 | 30.04 | 763.1 | 45.0 | 7.2 | 69 | S | | | 2 | | 8 | | W | 0.213 | 5.4 | Very cloudy | Normal School. |
| Bourg-en-Bresse | 29.13 | 739.9 | 30.03 | 762.8 | 45.5 | 7.5 | 55 | SE | | | 2 | 2c | | W | | 0.075 | 1.9 | Slightly cl'dy | Normal School. |
| Bourges, Normal School | 29.35 | 745.6 | 29.91 | 759.7 | 50.7 | 10.4 | 84 | SW | | | 2 | | 2 | | S | 0 | 0 | Slightly cl'dy | A. Wagner, Director. |
| Brest, Naval Observatory | 29.61 | 752.1 | 29.83 | 757.6 | 52.0 | 11.1 | 65 | S | | | 1 | | 9 | | S | 0.138 | 3.50 | | The Staff. |
| Carcassonne, Normal School | 29.58 | 751.4 | 30.00 | 761.9 | 51.8 | 11 | 86 | E | | | 4 | | 2 | | E | 0 | 0 | Slightly cl'dy | Vateau, Director. |
| Caen | 29.81 | 757.1 | 29.88 | 759.0 | 50.4 | 10.2 | 68 | W | | | 2 | | 5 | | W | 0 | 0 | Cloudy | Normal School. |
| Chartres, Normal School | 29.34 | 745.3 | 29.92 | 759.9 | 48.0 | 8.9 | 92 | W | | | 2 | | 9 | | N | 0.20 | 5. | | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.58 | 751.4 | 29.91 | 759.6 | 43.9 | 6.6 | 77 | SSE | | | 4 | | 10k | | S | 0 | 0 | Covered | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.56 | 725.4 | 29.93 | 760.1 | 49.3 | 9.6 | 84 | SE | | | 2 | | 5 | | | 0 | 0 | Cloudy | Alluard, Director. |
| Commercy, Normal School | 29.06 | 738.1 | 29.96 | 760.9 | 38.1 | 3.4 | 87 | SW | | | 4 | | 10 | | SW | 0 | 0 | Covered | Dr. Goulet, Director. |
| Commune de Grèasque* | 28.93 | 734.9 | 30.08 | 763.9 | 53.1 | 11.7 | 37 | W | | | 2 | | 8 | | W | 0 | 0 | ¾ covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 29.70 | 754.4 | 29.91 | 759.8 | 51.1 | 10.6 | 41 | SE | | | 4 | | 5 | | SW | 0 | 0 | Cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.62 | 752.4 | 29.93 | 760.3 | 48.2 | 9 | 46 | W | | | 2 | | 2 | | W | 0.059 | 1.5 | Slightly cl'dy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.06 | 738.0 | 29.99 | 761.8 | 45.3 | 7.4 | 61 | SE | | | 2 | | 5 | | SW | 0.04 | 1. | Cloudy | Voudez, Director. |
| Lorient, Naval Observatory | 29.83 | 757.6 | 29.93 | 760.1 | 52.2 | 11.2 | 68 | SSE | | | 2 | | 8 | | SSE | 0 | 0 | ¾ covered | T. Carré, Director. |
| Mâcon, Normal School | 29.34 | 745.3 | 30.05 | 763.3 | 43.0 | 6.1 | 73 | Calm | | | 0 | | 5 | | | 0 | 0 | Cloudy | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | 28.89 | 733.9 | 29.97 | 761.3 | 39.2 | 4 | 87 | SW | | | 2 | | 10 | | NE | 0 | 0 | Covered | Normal School. |
| Nismes, Normal School | 29.84 | 757.8 | 30.04 | 763.0 | 56.1 | 13.4 | 39 | S | | | 2 | | 5 | | S | 0 | 0 | Cloudy | Boyer, Director. |
| Orleans, Normal School | 29.51 | 749.6 | 29.89 | 759.2 | 49.6 | 9.8 | 60 | W | | | | | 8 | | W | 0 | 0 | Very cloudy | Bernard, Director. |
| Paris, Observatory | 29.65 | 753.2 | 29.89 | 759.3 | 48.7 | 9.3 | 46 | WSW | | | 1 | | 10 | | W | 0 | 0 | Covered | National Observatory. |
| Privas | 28.95 | 735.4 | 30.04 | 763.0 | 46.4 | 8 | 16 | SW | | | 2 | | 5 | | | 0 | 0 | Cloudy | Normal School |
| Puy de Dome (Summit) | | | | | | | | | | | | | | | | | | | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.90 | 759.4 | 29.93 | 760.2 | 50.9 | 10.5 | 52 | SSE | | | 5 | | 10 | | SSE | 0 | 0 | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.80 | 757.0 | 29.89 | 759.2 | 50 | 10.0 | 51 | NW | | | 6 | | 5 | | W | 0 | 0 | Cloudy | F. Lucard, Director. |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | M. H. Hercouet. |
| Tarbes, Normal School | 28.83 | 734.8 | 30.00 | 762.1 | 57.2 | 14 | 57 | SW | | | 2 | | 0 | | | 0 | 0 | Clear | T. Hugues, Director. |
| Villefranche | 29.24 | 742.8 | 29.97 | 761.1 | 50.5 | 10.3 | 48 | SE | | | 1 | | 8 | | | 0 | 0 | Very cloudy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.82 | 757.3 | 29.84 | 758.0 | 78.8 | 26 | | | | | | | | | | 0 | 0 | | L'Abbé Marchési. |
| Lyons | | | 30.03 | 762.8 | 48.7 | 9.3 | | | | | | | 6 | | | 0 | 0 | | M. Jeys. |
| Marseilles, Observatory | | | 30.04 | 763.0 | 52.5 | 11.4 | 52 | W | | | 1 | | 10 | | | 0 | 0 | Covered | The Staff. |
| Mont-Louis | 24.76 | 628.9 | 30.08 | 763.9 | 40.3 | 4.6 | 37 | SSW | 24.2 | 10.83 | | | 4 | | SW | 0 | 0 | | Mr. Falguère. |
| Nice | 29.96 | 760.9 | 30.04 | 762.9 | 57.2 | 14.0 | 46 | WSW | | | 4 | | 1 | | WSW | 0 | 0 | Clear | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.61 | 752.1 | 29.89 | 759.1 | 48.9 | 9.4 | 54 | WSW | | | 4 | | 10 | | W | Inap. | Inap. | | Marié Davy, Director. |
| Perpignan | | | 30.00 | 762.0 | 53.1 | 11.7 | 60 | NE | 5.6 | 2.50 | | | 5 | | NW | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Bayiac. |
| Pic du Midi, (Plantade,) H. P. | 22.33 | 567.1 | | | 31.6 | — 0.2 | | NW | | | 3 | | 10 | | | 0 | 0 | Cloudy | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.73 | 755.2 | 29.90 | 759.4 | 49.5 | 9.7 | 46 | SW | | | 2 | | 9 | | W | 0 | 0 | Covered | E. Renou. |
| Toulouse, Observatory | 29.23 | 742.4 | 29.95 | 760.7 | 51.3 | 10.7 | 44 | SSE | | | 4 | | 4 | | | 0 | 0 | | The Staff. |
| Tours | 29.77 | 756.2 | 29.97 | 761.2 | 51.3 | 10.7 | | SSW | | | 2 | | 5 | | SSW | 0 | 0 | | C. Marquet. |
| Versailles, (near Paris) | | | 29.90 | 759.4 | 48.6 | 9.2 | 54 | WNW | | | 2 | | 8 | | | 0.005 | 0.13 | Very cloudy | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.05 | 763.3 | 30.08 | 763.9 | 46.8 | 8.2 | 82 | E | 15.7 | 7.0 | | | 10n | | | 0.185 | 4.7 | Raining | Marc Decheverens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7 a. m. or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 29.71 | 754.6 | 29.88 | 758.9 | 44.2 | 6.8 | 50 | SW | | | 3 | | 8 | | | 0.027 | 0.69 | | Prof. Arndt. |
| Breslau | 29.46 | 748.3 | 29.99 | 761.8 | 39.0 | 3.9 | 56 | NNW | | | 2 | | 5 | | | Blank | Blank | | Royal University Obs'y |
| Carlsruhe | 29.51 | 749.5 | 29.98 | 761.6 | 43.2 | 6.2 | 62 | SW | | | 4 | | 5 | | | 0 | 0 | | Albert Senz. |
| Cassel | 29.22 | 742.3 | 29.83 | 757.6 | 41.4 | 5.2 | 80 | WSW | | | 6 | | 8 | WSW | | 0.202 | 5.12 | | Dr. H. Möhl. |
| Crefeld | 29.57 | 751.0 | 29.73 | 755.1 | 43.0 | 6.1 | 62 | SW | | | 6 | | 9 | | | 0 | 0 | | Director Lose. |
| Emden | 29.58 | 751.4 | 29.62 | 752.3 | 36.5 | 2.5 | 95 | NW | | | 7 | | 6 | | | 0.177 | 4.5 | | Prof. Prestel. |
| Frankfort on the Main | 29.56 | 750.7 | 29.93 | 760.2 | 41.2 | 5.1 | 68 | WSW | | | 3 | | 9 | | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 28.57 | 725.6 | 30.05 | 763.2 | 39.6 | 4.2 | 56 | S | | | 2 | | 1 | WNW | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 29.58 | 751.2 | 29.85 | 758.0 | 41.4 | 5.2 | 58 | SSW | | | 5 | | 10ks | | | 0.008 | 0.2 | Squally | Captain F. Hegemann. |
| Kiel | 29.54 | 750.4 | 29.56 | 750.8 | 40.3 | 4.6 | 70 | SSW | | | 5 | | 10 | | | 0.164 | 4.16 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.87 | 758.7 | 29.95 | 760.7 | 41.0 | 5.0 | 46 | NW | | | | | | | | 0 | 0 | Cloudy | Prof. E. Luther. |
| Köslin | | | 29.86 | 758.4 | 35.4 | 1.9 | | S | | | 4 | | 2 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.49 | 749.1 | 29.92 | 760.0 | 43.0 | 6.1 | 49 | SSW | | | 5 | | 8 | SW | | 0 | 0 | | Prof. Bruhns. |
| Memel, Naval School | 29.92 | 760.0 | 29.97 | 761.2 | 38.5 | 3.6 | 49 | S | | | 4 | | 4cs;ck | | | | | | Reinbrecht von Skalweit. |
| Neufahrwasser | 29.89 | 759.1 | 29.90 | 759.5 | 40.6 | 4.8 | 62 | S | | | 3 | | 7 | | | 0.055 | 1.4 | | A. Lothes. |
| Posen | 29.74 | 755.4 | 30.04 | 763.0 | 40.8 | 4.9 | 65 | W | | | 5 | | 9 | | | 0.007 | 0.19 | Cloudy | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.42 | 747.3 | 29.98 | 761.6 | 45.9 | 7.7 | 57 | SW | | | 4 | | 10 | SW | | 0.031 | 0.79 | | Dr. Schur. |
| Stuttgart | 29.99 | 736.3 | 29.95 | 760.8 | 41.9 | 5.5 | 50 | SW | | | 2 | | 8 | W | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | 29.27 | 743.4 | 29.79 | 756.6 | 42.8 | 6.0 | 63 | SW | | | 7 | | 10 | | | 0.057 | 1.44 | Foggy | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.44 | 722.3 | 29.98 | 761.6 | 38.8 | 3.8 | 49 | SW | 4 | 2 | | | 9k | | W | 0.008 | 0.2 | | Dr. Von Bebber. |
| Wustrow, Naval School | 29.81 | 757.2 | 29.85 | 758.2 | 37.6 | 3.1 | 74 | SSW | | | 4 | | 10 | | | 0 | 0 | Covered | E. F. Schütz. |
| GERMAN NAVAL SERIES. | | | | | | | | | | | | | | | | | | | |
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NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.38 | 746.0 | 29.73 | 755.1 | 56.7 | 13.7 | | W | | | 5.0 | | | | | | | ⅛ clear | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.81 | 757.1 | 29.86 | 758.4 | 80.8 | 27.1 | 72 | WSW | 24.0? | 10.7? | | | 8 | | | 0 | 0 | D. clouds | |
| Deesa | 29.37 | 745.9 | 29.83 | 757.6 | 99.4 | 37.4 | 26 | Calm | | | | | 4 | W | | 0 | 0 | D. clouds | |
| Bombay | 29.79 | 756.7 | 29.88 | 757.6 | 84.6 | 29.2 | 76 | NW | 13.0 | 5.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.80 | 706.0 | 29.74 | 755.4 | 93.5 | 34.2 | 38 | W | | | | | 1 | | | 0 | 0 | Dust-whirl. | |
| Lahore | 29.09 | 738.8 | 29.82 | 757.5 | 88.1 | 31.2 | 70 | N | 2.6 | 1.2 | | | 3 | | | 0 | 0 | Partly cl'dy | |
| Belgaum | 27.34 | 694.3 | 29.81 | 757.2 | 88.9 | 31.6 | 43 | W | 13.0 | 5.8 | | | 1 | | | 0 | 0 | Misty | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.93 | 734.8 | 29.82 | 757.4 | 84.8 | 29.3 | 44 | NW | 0.9 | 0.4 | | | 10 | | | 0 | 0 | | |
| Agra | 29.28 | 743.8 | 29.83 | 757.7 | 96.6 | 35.9 | 21 | W | | | | | 3 | | SW | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.74 | 730.0 | 29.74 | 755.5 | 99.9 | 37.7 | 25 | Calm | 4.0 | 1.8 | | | 7 | | E | 0 | 0 | D. clouds | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.30 | 744.2 | 29.66 | 753.3 | 96.5 | 35.8 | 57 | WNW | 3.8 | 1.7 | | | 10 | | | 0 | 0 | Overcast | |
| Allahabad | 29.46 | 748.2 | 29.76 | 755.9 | 94.7 | 34.8 | 29 | Calm | 1.3 | 0.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.55 | 750.5 | 29.72 | 755.0 | 98.4 | 36.9 | 22 | W | 1.2 | 0.5 | | | 8 | W | W | 0 | 0 | D. clouds | |
| Hazaribagh | 27.78 | 705.7 | 29.74 | 755.4 | 91.6 | 33.1 | 16 | NW | 5.4 | 2.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.71 | 754.7 | 29.79 | 756.8 | 88.1 | 31.2 | 59 | SSW | 6.5 | 2.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.76 | 755.9 | 29.78 | 756.5 | 84.8 | 29.3 | 72 | SSW | 10.0 | 4.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.39 | 746.4 | 29.77 | 756.2 | 85.7 | 29.8 | 67 | S | 3.3 | 1.5 | | | 5 | | | 0 | 0 | D. clouds | |
| Chittagong | 29.78 | 756.5 | 29.88 | 758.9 | 82.1 | 27.8 | 75 | SSW | 7.6 | 3.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Sibsagar | 29.47 | 748.4 | 29.80 | 757.0 | 78.3 | 25.7 | 74 | ENE | 2.2 | 1.0 | | | 9 | SW | SW | 0 | 0 | D. clouds | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.46 | 722.6 | 29.77 | 756.2 | 97.0 | 36.1 | 31 | NE | 2.5 | 1.1 | | | 2 | NW | | 0 | 0 | D. clouds | |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,969 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instru'tal error and temperature. Inches. | Barometer. Corrected for instru'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.58 | 751.3 | 30.00 | 761.9 | 47.8 | 8.8 | 17 | SW | 1.8 | 0.8 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 29.90 | 759.4 | 30.01 | 762.2 | 49.5 | 9.7 | 14 | SW | 0.9 | 3.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Vicenza | 29.81 | 757.2 | 30.01 | 762.2 | 50.7 | 10.4 | 29 | S | 8.1 | 3.6 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.67 | 728.3 | 30.01 | 762.2 | 48.6 | 9.2 | 25 | S | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.60 | 749.3 | 30.03 | 762.8 | 51.6 | 10.9 | ..... | W | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.11 | 739.4 | 30.03 | 762.7 | 49.6 | 9.8 | 18 | SSE | 4.3 | 1.9 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 28.05 | 712.5 | 29.99 | 761.7 | 46.0 | 7.8 | 24 | NW | ..... | ..... | 2 | ..... | 1 | W | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.85 | 758.1 | 30.07 | 763.8 | 54.1 | 12.3 | 35 | SW | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.91 | 759.6 | 30.08 | 764.0 | 53.6 | 12.0 | 18 | SE | 8.1 | 3.6 | ..... | ..... | 1 | SW | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.72 | 755.0 | 30.05 | 763.3 | 53.6 | 12.0 | 41 | SSW | ..... | ..... | 6 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.82 | 757.4 | 30.08 | 764.0 | 50.0 | 10.0 | 15 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 30.02 | 762.4 | 30.10 | 764.6 | 51.6 | 11.0 | 30 | SW | 4.9 | 2.2 | .. | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 30.05 | 763.2 | 30.10 | 764.5 | 46.2 | 7.9 | 58 | N | 12.5 | 5.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.50 | 723.9 | 30.07 | 763.7 | 45.0 | 7.2 | 40 | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 30.00 | 761.9 | 30.11 | 764.8 | 52.0 | 11.1 | 46 | SSE | ..... | ..... | 4 | ..... | 3 | SSE | ..... | 0.098 | 2.5 | ..... | Avv. P. Ponticelli. |
| Rome | 29.96 | 760.9 | 30.13 | 765.4 | 52.3 | 11.3 | 28 | WNW | 4.3 | 1.9 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U | 29.93 | 760 3 | 30.13 | 765.4 | 55.4 | 13.0 | 27 | S | ..... | ..... | 4 | ..... | 4 | SSW | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 49.5 | 9.7 | 45 | NNW | 32.2 | 14.4 | ..... | ..... | 2 | NNW | ..... | 0.268 | 6.8 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.91 | 759.6 | 30.10 | 764.5 | 57.2 | 14.0 | 32 | NW | ..... | ..... | 2 | ..... | 1 | NW | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.20 | 741.6 | 30.09 | 764.3 | 49.6 | 9.8 | 69 | SW | 16.1 | 7.2 | ..... | ..... | 3 | ..... | ..... | 0.047 | 1.2 | ..... | Prof. F. D. Conti. |
| Palermo | 29.85 | 758.3 | 30.11 | 764.8 | 54.1 | 12 3 | 37 | W | 18.6 | 8.3 | ..... | ..... | 5 | ..... | ..... | 0.114 | 2.9 | ..... | Prof. G. Cacciatore. |
| Syracuse | 30.00 | 761.9 | 30.07 | 763.8 | 56.8 | 13.8 | 40 | WNW | ..... | ..... | 6 | ..... | 6 | WNW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.57 | 751.0 | 30.12 | 765.1 | 51.6 | 10.9 | 26 | NNW | 2.5 | 1.1 | ..... | ..... | 2 | N | ..... | 0 | 0 | ..... | Prof. F. Brioschi |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.8 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 29.84 | 757.9 | 29.91 | 759.7 | 46.3 | 7.9 | 51 | NNW | 8.2 | 3.7 | ..... | 0 | 1s | ..... | ..... | 0 | 0 | Fair | The Observatory. |
| Tokei (Yeddo) University | 29.78 | 756.4 | 29.89 | 759.1 | 45.5 | 7.5 | 64 | NNW | 9.5 | 4.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear | Prof. P. V. Veeder. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascallientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Castillo, A. E. |
| Guadalajara | 25.04 | 636.0 | 30.11 | 764.6 | 46.4 | 8.0 | 52 | S | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | ..... | Prof. L. Perez. |
| Guanajuato | 23.61 | 599.9 | 29.86 | 758.5 | 56.3 | 13.5 | 63 | Calm | 0 | 0 | ..... | 0 | ..... | ..... | ..... | 0 | 0 | Blue sky | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 53.6 | 12.0 | 56 | NW | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | Prof. M. Leal. |
| Mexico | 23.02 | 584.6 | 30.09 | 764.3 | 51.8 | 11.0 | 48 | Calm | 0 | 0 | ..... | 1c | 1s | ..... | ..... | 0 | 0 | Blue sky | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Very fine | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 50.0 | 10.0 | 64 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | M. V. de Leon, M. E. |
| Puebla | 23.30 | 591.7 | 30.03 | 762.8 | 45.6 | 7.7 | 62 | ENE | 4.2 | 1.9 | ..... | 0 | 3 | ..... | ..... | 0 | 0 | Clear | Prof. B. Gonzalez. |
| Toluca | 29.64 | 752.9 | 29.95 | 760.3 | 72.3 | 22 6 | 79 | S | 11.0 | 4.9 | ..... | 10ck | 0 | SE | ..... | 0 | 0 | Hazy | Prof. C. Velazquez. |
| Tlacotalpam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. F. R. Bayly. |
| San Luis Potosi | 29.647 | 753.5 | 29.99 | 761.1 | 70 7 | 21.5 | 83 | Calm | 0 | 0 | ..... | 3c | 0 | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | 48.2 | 9.0 | 26 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. J. Rosseli. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Blue sky | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Spina. [M. M. D. D. |
| Morelia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Tena, F. L. Param. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.8 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft. San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.78 | 756.4 | 29.78 | 756.4 | 40.8 | 4.9 | ..... | WNW | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0.039 | 1.0 | ..... | |
| Groningen | 29.53 | 750.0 | 29.58 | 751.4 | 38.1 | 3.4 | ..... | WSW | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0.031 | 0.8 | ..... | |
| Helder | 29.66 | 753.4 | 29.66 | 753.4 | 39.2 | 4.0 | ..... | NW | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0.154 | 3.9 | ..... | |
| Hellevoetsluis | 29.75 | 755.6 | 29.75 | 755.6 | 37.8 | 3.2 | 93 | ESE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.71 | 754.7 | 29.76 | 755.9 | 35.1 | 1.7 | 91 | WSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.110 | 2.8 | Dull | H. v. d. Brink. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.60 | 751.8 | 29.65 | 753.2 | 33.8 | 1.0 | 48 | NE | 10.3 | 4.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... |
| Brönö | 29.80 | 757.0 | 29.84 | 758.0 | 29.1 | — 1.6 | 92 | SSE | 9 | 4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... |
| Christiania | 29.50 | 749.3 | 29.65 | 753.2 | 32.0 | 0.0 | 100 | NW | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0.157 | 4.0 | Snowing | ..... |
| Tromsö | 29.78 | 756.4 | 29.82 | 757.5 | 22.3 | — 5.4 | 66 | SE | 11 | 5 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | ..... |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.84 | 758.0 | 30.04 | 762.9 | 57.4 | 14.1 | 80 | N | 8.0 | 3.6 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.86 | 733.1 | 29.89 | 759.1 | 63.5 | 17.5 | 42 | SSW | 11.2 | 5.0 | ..... | ..... | 9 | SW | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 29.90 | 759.5 | 29.99 | 761.7 | 62.8 | 17.1 | 87 | SW | 8.0 | 3.6 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.48 | 748.9 | 29.85 | 758.1 | 60.4 | 15.8 | 67 | SSW | 17.4 | 7.8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 29.96 | 760.9 | 30.04 | 763.1 | 57.9 | 14.4 | 86 | NW | 9.8 | 4.4 | ..... | ..... | 10 | ..... | ..... | 0.059 | 1.5 | Light rain | ..... |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.70 | 754.3 | 29.71 | 754.5 | 86.0 | 30.0 | ..... | S | ..... | ..... | 6 | ..... | 10 | ..... | S | 2 | S | Drizzling | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Sado, Porto Praya, Cape Verde Islands | 30.00* | 762.0* | 30.01* | 762.3* | 80.6 | 27.0 | ..... | SW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 1 | SSW | D. clouds | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.76 | 755.8 | 29.76 | 756.0 | ..... | ..... | ..... | W | ..... | ..... | 1 | ..... | 3 | ..... | WNW | 1 | ..... | Blue sky | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreira, dos Amas, Com' |

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.52 | 749.7 | 29.95 | 760.7 | 38.5 | 3.6 | 43 | Calm | 0 | 0 | ..... | ..... | 2k | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.61 | 752.0 | 30.04 | 763.1 | 31.8 | — 0.1 | 47 | Calm | 0 | 0 | ..... | ..... | 6 | ..... | ..... | ..... | Light clouds | Astronomical Obs. |
| Dorpat | 29.91 | 759.7 | 30.17 | 766.3 | 25.2 | — 3.8 | 64 | E | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.17 | 766.4 | 30.19 | 766.8 | 23.9 | — 4.5 | 54 | Calm | 0 | 0 | ..... | ..... | 4n | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.80 | 757.0 | 30.15 | 765.9 | 14.7 | — 9.6 | 94 | S | 7 | 3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Ch. Forsten. |
| Kieff | 28.89 | 733.8 | 29.54 | 750.4 | 30.0 | — 1.1 | 100 | NNE | 18 | 8 | ..... | ..... | 10n | ..... | ..... | ..... | Snowing | Physical Cabinet. |
| Nikolaiev | 29.39 | 746.4 | 29.46 | 748.2 | 45.3 | 7.4 | 83 | S | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.58 | 751.4 | 29.60 | 751.9 | 51.1 | 10.6 | 89 | SSW | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.59 | 751.5 | 30.16 | 766.1 | 31.6 | — 0.2 | 50 | NW | 9 | 4 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.47 | 748.6 | 29.67 | 753.7 | 57.6 | 14.2 | 46 | ESE | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 30.05 | 763.2 | 30.07 | 763 7 | 12.2 | —11.0 | 93 | W | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.42 | 721.8 | 29.80 | 757.0 | 64.9 | 18.3 | 20 | SE | 9 | 4 | ..... | ..... | 1k | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.12 | 765.1 | 30.04 | 763.0 | 48.2 | 9.0 | 61 | ESE | 13 | 6 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Sebastianof. |
| Kasan | 29.88 | 759.0 | 30.17 | 766.2 | 33.6 | 0.9 | 55 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 29.17 | 741.0 | 30.15 | 765.7 | 39.4 | 4.1 | 69 | WSW | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.83 | 757.7 | 30.07 | 763.7 | 49.3 | 9.6 | 86 | NE | 11 | 5 | ..... | ..... | 2k | ..... | ..... | ..... | ..... | ..... |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.60 | 724.0 | 30.21 | 767.3 | 57.4 | 14.1 | 48 | Calm | 0 | 0 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.86 | 758.5 | 30.41 | 772.5 | 30.9 | — 0.6 | 85 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 30.14 | 765.5 | 30.48 | 774.3 | 19.2 | — 7.1 | 65 | NW | 2 | 1 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Krotkowo* | 29.66 | 753.4 | 30.15 | 765.9 | 34.5 | 1.4 | 92 | S | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | Light fog | Cand. Fatjanow. |
| Peking, (China) | 29.87 | 758.8 | 30.02 | 762.4 | 50.2 | 10.1 | 50 | SE | 9 | 4 | ..... | ..... | 4cs | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.81 | 706.3 | 29.97 | 761.2 | 23.4 | — 4.8 | 64 | NW | 11 | 5 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 20.8 | — 6.2 | 93 | E | 7 | 3 | ..... | ..... | 10n | ..... | ..... | ..... | Heavy clouds | ..... |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 24′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | ..... | ..... | 29.93 | 760.2 | 55.8 | 13.2 | 51 | SW | 5.7 | 2.56 | ..... | 10 | 0 | ..... | ..... | 0 | 0 | Covered | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.81 | 757.2 | 29.87 | 758.6 | 57.6 | 14.2 | 57 | SE | 6.1 | 2.67 | ..... | 0 | 8 | ..... | ..... | 0 | 0 | Almost cov. | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.87 | 682.6 | ..... | ..... | 60.8 | 16.0 | 57 | W | 4.1 | 1.83 | ..... | 2 | 6 | N | ..... | 0 | 0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.69 | 703.3 | 29.92 | 759.9 | 54.5 | 12.5 | 51 | SW | 2.2 | 1.00 | ..... | 0 | 10 | ..... | ..... | 0 | 0 | Covered | The Staff. |
| Murcia, Met. Obs'y | 29.84 | 757.9 | 29.99 | 761.7 | 62.6 | 17.0 | 50 | NE | 4.9 | 2.17 | ..... | 4 | 5 | E | ..... | 0 | 0 | Almost cov. | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.77 | 730.8 | 29.65 | 753.2 | 59.9 | 15.5 | 57 | SW | 25.5 | 11.39 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | Almost cov. | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.93 | 760.1 | 29.99 | 761.8 | 69.4 | 20.8 | 81 | ESE | 10.7 | 4.8 | ..... | 2cs | 0 | WNW | ..... | 0 | 0 | Clear | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 29.80 | 757.0 | 29.90 | 759.4 | 66.4 | 19.1 | 52 | ESE | 24.1 | 10.8 | ..... | 0 | 10 | ..... | E | 0 | 0 | ..... | Capt. C. Pulazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.91 | 759.8 | 30.00 | 762.0 | 81.3 | 27.4 | 77 | E | 9.8 | 4.38 | ..... | 6kn | 8kn | E | E | 4.863 | 123.50 | Cloudy | Leonardo de Tejeda, Chief of Engineers. |

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft. The barometer readings at Barcelona are published as given.

## SWEDISH SERIES.



Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.10 | 764.4 | 30.13 | 765.4 | 15.1 | — 9.4 | ..... | S | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.06 | 763.4 | 30.11 | 764.7 | 20.8 | — 6.2 | 69 | SE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.97 | 761.1 | 30.02 | 762.4 | 24.6 | — 4.1 | 75 | ESE | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 0.024 | 0.6 | ..... | |
| Stockholm | 29.60 | 751 9 | 29.78 | 756.4 | 34.2 | 1.2 | 78 | SSE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0.055 | 1.4 | ..... | |
| Wisby | 29.72 | 754.9 | 29.78 | 756.4 | 38.8 | 3.8 | 70 | SW | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0.110 | 2.8 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.72 | 754.9 | 29.80 | 756.8 | 30.2 | — 1.0 | 87 | ESE | 12.8 | 5.7 | ..... | ..... | 10 | ..... | ..... | 0.045 | 1.14 | Snowing | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.60 | 726.3 | 30.06 | 763.4 | 42.8 | 6.0 | 49 | SE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.004 | 0.1 | Vapory | The Observatory. |
| Zurich | 28.37 | 720.6 | 30.06 | 763.5 | 39.6 | 4.2 | 44 | SE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0.031 | 0.8 | Bright | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +2.0 mm.; Thermometer, —3.2 cent.; Relative Humidity, —10 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.66 | 760.8 | 49.3 | 9.6 | 73 | SW | 13 | 6.0 | ..... | ..... | 10 | ..... | SW | 0.276 | 7.0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stéfanidès. |
| Valona | ..... | ..... | 29.94 | 760.5 | 46.9 | 8.3 | ..... | NW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 1.06 | 27. | Covered | A. Bertrand. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria.) Lee Obs'y | 29.66 | 753.4 | 29.78 | 756.4 | 66.9 | 19.4 | 70 | N | ..... | ..... | 1 | ..... | 1c | ..... | ..... | 0 | 0 | D. clouds | Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.79 | 756.7 | 29.86 | 758.4 | 31.2 | — 0.4 | 77 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | ..... | ..... | Fine | Hon. J. Ferguson. |
| Brockville, Ontario | 29.32 | 744.7 | 29 63 | 752.6 | 36 | 2.2 | ..... | S | 1 | 0.4 | ..... | 10s | ..... | S | 0.9 | 23. | Cloudy | W. R. Bigg. |
| *Chatham, N B | 29.82 | 757.4 | 29.88 | 758.9 | 26 | — 3.3 | 87 | SW | 1 | 0.4 | ..... | 10k | 0 | W | ..... | 0 | 0 | Fair | G. A. Blair. |
| Charlottetown, P. E. Island. | 29.87 | 758.7 | 29.91 | 759.7 | 32 | 0.0 | 86 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.38 | 746.2 | 29.57 | 751.1 | 33.8 | 1.0 | 92 | S | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0.07 | 1.8 | Cloudy | James Smith, M. A. |
| Dalhousie, N. B | 29.81 | 757.2 | 29.84 | 757.9 | 23 | — 5.0 | 93 | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | Gloomy | H. A. Johnson. |
| Esquimault, B. C | 29.75 | 755.6 | 29.79 | 756.7 | 48.3 | 9.1 | 100 | Calm | ..... | ..... | ..... | 10 | ..... | ..... | ..... | 0 | 0 | Cloudy | W. H. Bevis. |
| *Father Point, Quebec | 29.72 | 754.9 | 29.74 | 755.4 | 31 | — 0.6 | 97 | S | 6 | 2.7 | ..... | 10n | ..... | ..... | ..... | Inap. | Inap. | Light snow | J. McWilliams. |
| Fredericton, N. B | 29.86 | 758.4 | 29.92 | 760.0 | 34.1 | 1.2 | 77 | Calm | 0 | 0 | ..... | 10k | ..... | W | Inap. | Inap. | Cloudy | Prof. Harrison. | |
| *Fort Garry Manitoba | 29.23 | 742.4 | 30.12 | 765.0 | 15 | — 9.4 | 95 | N | 12 | 5.4 | ..... | 2k | 5ks | N | N | 0 | 0 | Clearing | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.40 | 723.6 | 29.60 | 751.8 | 37 | 2.8 | 90 | W | ..... | ..... | 1 | 1cs | 0 | E | ..... | 0 | 0 | Clear | James Grant. |
| *Halifax, N. S | 29.82 | 757.4 | 29.96 | 761.0 | 35 | 1.7 | 80 | W | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | F. Allison, M. A. |
| Hamilton, Ontario | 29.25 | 742.9 | 29.62 | 752.3 | 36.7 | 2.6 | 90 | SW | ..... | ..... | 1 | 10cs | 0 | ..... | ..... | 0.10 | 2.5 | Cloudy | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.82 | 757.4 | 29.84 | 757.9 | 30 | — 1.1 | 89 | NW | ..... | ..... | 1 | ..... | 4ks | ..... | ..... | 0.36 | 9.1 | Cloudy | E. Weedon. |
| *Kingston, Ontario | 29.24 | 742.7 | 29.58 | 751.3 | 38 | 3.3 | 85 | S | 6 | 2.7 | ..... | ..... | 10ks | ..... | SW | 0.02 | 0.5 | Cloudy | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.87 | 758.7 | 29.91 | 759.7 | 35.3 | 1.8 | ..... | W | 6 | 2.7 | ..... | 4k | 0 | W | ..... | 0 | 0 | Fair | C. H. Rigby. |
| *Montreal, Quebec | 29.43 | 747.5 | 29.64 | 752.8 | 34 | 1.1 | 79 | S | 14 | 6.3 | ..... | ..... | 10n | ..... | ..... | 0.03 | 0.8 | Light snow | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 28.87 | 733.3 | 29.55 | 751.3 | 34 | 1.1 | 99 | S | 3 | 1.3 | ..... | ..... | 10n | ..... | SW | 0.07 | 1.8 | Cloudy | Rev. R. Mosley. |
| Peterboro, Ontario | 28.88 | 733.5 | 29.64 | 752.8 | 35.7 | 2.1 | 98 | Calm | ..... | ..... | ..... | ..... | 8k | ..... | ..... | 0.15 | 3.8 | Misty | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 28.91 | 734.3 | 29.61 | 752.1 | 42 | 5.6 | 74 | SW | 7 | 3.1 | ..... | ..... | Haze | ..... | N | 0.07 | 1.8 | Hazy | H. Morgan. |
| Port Hastings, N. S | 29.89 | 759.2 | 29.94 | 760.5 | 37.6 | 3.1 | ..... | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 28.97 | 735.8 | 29.62 | 752.3 | 39 | 3.9 | 82 | W | 6 | 2.7 | ..... | ..... | 10n | ..... | NW | 0.04 | 1.0 | Cloudy | M. Payne. |
| *Quebec, Quebec | 29.43 | 747.5 | 29.76 | 755.9 | 32 | 0.0 | 100 | Calm | ..... | ..... | 0 | ..... | 10n | ..... | ..... | 0.20 | 5.1 | Heavy snow | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.08 | 738.6 | 29.54 | 750.3 | 33 | 0.6 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | ..... | 0.05 | 1.3 | Light rain | W. H. McIntyre. |
| St. Andrews, N. B | 29.86 | 758.4 | 29.91 | 759.7 | 37 | 2.8 | 78 | W | 3 | 1.3 | ..... | 2c | 2s | NW | ..... | 0 | 0 | Fair | Dr. Gove. |
| St. John, N. B | 29.77 | 756.1 | 29.94 | 760.5 | 30 | — 1.1 | 84 | NW | 2 | 0.9 | ..... | ..... | 5k | ..... | ..... | 0.020 | 0.51 | Fine | G. Murdock, C. E. |
| *Sangeen, Ontario | 28.87 | 733.3 | 29.59 | 751.6 | 37 | 2.8 | 85 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | K. Stewart. |
| Stayner, Ontario | 28.82 | 732.0 | 29.61 | 752.1 | 36 | 2.2 | 91 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.08 | 2.0 | Hazy | R. J. Cole. |
| Stratford, Ontario | 28.31 | 719.1 | 29.61 | 752.1 | 35.7 | 2.1 | 85 | Calm | 0 | 0 | ..... | 1cs | 7s | ..... | ..... | 0.05 | 1.3 | Cloudy | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.90 | 759.4 | 29.93 | 760.2 | 35 | 1.7 | 63 | SW | 7 | 3.1 | ..... | 8k | 0 | W | ..... | 0 | 0 | Fair | T. C. Hill. |
| *Toronto, Ontario | 29.24 | 742.7 | 29.63 | 752.6 | 35 | 1.7 | 97 | Calm | 0 | 0 | ..... | 8ck | Fog | W | ..... | 0.07 | 1.8 | Foggy | Magnetic Observatory. |
| Windsor, N. S | 29.85 | 758.2 | 29.95 | 760.7 | 34.0 | 1.1 | 71 | SW | 5 | 2.2 | ..... | 0 | 1s | ..... | ..... | 0 | 0 | Clear | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 30.0 | — 1.1 | ..... | W | ..... | ..... | ..... | 5 | 5n | ..... | ..... | 0.22 | 5.6 | Cloudy | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,162ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Upper. 0–10 | Clouds. Amount. Low'r. 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.53 | 750.0 | 29.76 | 755.9 | 37 | 2.8 | 81 | S | 20 | 8.9 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Alpena, Michigan | 28.93 | 734.8 | 29.58 | 751.3 | 36 | 2 2 | 90 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | NW | 0.16 | 4.1 | Cloudy | |
| Atlantic City, New Jersey | 29.91 | 759.7 | 29.93 | 760.2 | 44 | 6.7 | 92 | SE | 22 | 9.8 | ..... | 2ck | 5s | SW | Calm | 0.08 | 2.0 | Fair | |
| Augusta, Georgia | 29.86 | 758.4 | 30.04 | 763.0 | 49 | 9.4 | 78 | Calm | 0 | 0 | ..... | ..... | Sm'e | ..... | Calm | 0 | 0 | Smoky | |
| Baltimore, Maryland | 29.84 | 757.9 | 29.89 | 759.2 | 46 | 7.8 | 92 | S | 5 | 2.2 | ..... | ..... | 10ks | ..... | W | 0 | 0 | Threatening | |
| Barnegat, New Jersey | 29.91 | 759.7 | 29.93 | 760.2 | 43 | 6.1 | 83 | S | 24 | 10.7 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Bismarck, Dakota | 28.12 | 714.2 | 29.98 | 761.5 | 27 | — 2.8 | 76 | N | 18 | 8.0 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Boise City, Idaho | 26.94 | 684.3 | 29.82 | 757.4 | 36 | 2.2 | 80 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap | Clear | |
| Boston, Massachusetts | 29.74 | 755.4 | 29.90 | 759.4 | 39 | 3.9 | 65 | S | 10 | 4.5 | ..... | ..... | 10s;sm | ..... | SW | 0 | 0 | Cloudy | |
| Brackettville, Texas | 28.50 | 723.9 | 29.50 | 749.3 | 60 | 15.6 | 82 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 28.85 | 732.8 | 29.88 | 758.9 | 27 | — 2.8 | 76 | N | 20 | 8.9 | ..... | ..... | 10ks | ..... | N | 0 | 0 | Cloudy | |
| Brownsville, Texas | 29.56 | 750.8 | 29.63 | 752 6 | 71 | 21.7 | 90 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Buffalo, New York | 28.88 | 733.5 | 29.56 | 750.8 | 46 | 7.8 | 62 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | W | 0.05 | 1.3 | Cloudy | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 54 | 12.2 | 38 | Calm | ..... | ..... | 0 | 5ck | 0 | N | ..... | 0 | 0 | Fair | |
| Burlington, Vermont | 29.44 | 747.8 | 29.71 | 754.6 | 36 | 2.2 | 70 | S | 18 | 8.0 | ..... | ..... | 10n | ..... | S | Inap. | Inap. | Light snow | |
| Cairo, Illinois | 29.27 | 743.4 | 29.65 | 753.1 | 63 | 17.2 | 62 | S | 12 | 5.4 | ..... | Haze | 8s | Calm | Calm | 0 | 0 | Cloudy | |
| Camp Grant, Arizona | 25.05 | 636.3 | 29.85 | 758.2 | 38 | 3.3 | 45 | E | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | 26.62 | 676.1 | 30.10 | 764.5 | 38 | 3.3 | 63 | NW | ..... | ..... | 3 | 0 | 0 | ..... | ..... | Inap | Inap. | Clear | |
| Campo, California | 27.33 | 694.2 | 29.90 | 759.4 | 44 | 6.7 | 92 | Calm | 0 | 0 | ..... | 5k | 0 | W | ..... | 0.14 | 3.6 | Fair | |
| Cape Hatteras, N. Carolina | 30.02 | 762.5 | 30.03 | 762.7 | 58 | 14.4 | 94 | S | 4 | 1.8 | ..... | Haze | Haze | ..... | ..... | 0 | 0 | Hazy | |
| Cape Henry, Virginia | 29.94 | 760.5 | 29.95 | 761.0 | 52 | 11.1 | 86 | S | 13 | 5.8 | ..... | 5k | Haze | W | ..... | 0 | 0 | Fair | |
| Cape Lookout, N. Carolina | 30.02 | 762.5 | 30.04 | 763.0 | 61 | 16.1 | 88 | SW | 10 | 4.5 | ..... | 10cs | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Cape May, New Jersey | 29.90 | 759.4 | 29.93 | 760.2 | 49 | 9.4 | 78 | S | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 30.00 | 762.0 | 30.07 | 763 8 | 58 | 14.4 | 88 | Calm | 0 | 0 | ..... | 5c | Fog | Calm | Calm | 0 | 0 | Fair | |
| Cheyenne, Wyoming | 23.70 | 602.0 | 29.64 | 752.8 | 30 | — 1.1 | 100 | N | 24 | 10.7 | ..... | ..... | 10n | ..... | Calm | 0.92 | 23.4 | Light snow | |
| Chicago, Illinois | 28.82 | 732.0 | 29.48 | 748.8 | 56 | 13.3 | 63 | W | 8 | 3.6 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Cincinnati Ohio | 29.06 | 738.1 | 29.69 | 754.1 | 55 | 12.8 | 59 | SE | 3 | 1.3 | ..... | 10k | Sm'e | W | Calm | Inap. | Inap. | Cloudy | |
| Cleveland, Ohio | 28.90 | 734.0 | 29.80 | 751.8 | 55 | 12.8 | 62 | S | 18 | 8.0 | ..... | ..... | 10s | ..... | SW | 0.22 | 5.6 | Cloudy | |
| Concho, Texas | 27.69 | 703.3 | 29.32 | 744.7 | 60 | 10.0 | 50 | NW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.12 | 739.6 | 29.57 | 751.1 | 55 | 12.8 | 94 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | E | 0.88 | 22.4 | Cloudy | |
| Davenport, Iowa | 28.86 | 733.0 | 29.47 | 748.5 | 58 | 14.4 | 70 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Deadwood, Dakota | 25.25 | 641.3 | ..... | ..... | 30 | — 1.1 | 100 | N | 3 | 1.3 | ..... | ..... | 10n | ..... | Calm | 0.07 | 1.8 | Light snow | |
| Denison, Texas | 28.69 | 728.7 | 29.45 | 748.0 | 63 | 17.2 | 67 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | SW | 0.25 | 6.3 | Cloudy | |
| Denver, Colorado | 24.42 | 620.3 | 29.64 | 752.8 | 36 | 2.2 | 90 | NW | 32 | 14.3 | ..... | ..... | 10n | ..... | Calm | 0.33 | 8.4 | Light rain | |
| Detroit, Michigan | 28.90 | 734.0 | 29.56 | 750.8 | 43 | 6.1 | 67 | SW | 2 | 0.9 | ..... | 10k | 0 | SW | ..... | 0.09 | 2.3 | Cloudy | |
| Dodge City, Kansas | 26.78 | 680.2 | 29.03 | 737.3 | 35 | 1.7 | 80 | N | 4 | 1.8 | ..... | 0 | 5s | ..... | S | 0 | 0 | Fair | |
| Dubuque, Iowa | 28.81 | 731.8 | 29.48 | 748.8 | 49 | 9.4 | 71 | NE | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Duluth, Minnesota | 29.08 | 738.6 | 29.76 | 755.9 | 36 | 2.2 | 71 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Eagle Pass, Texas | 28.97 | 735.8 | 29.67 | 753.6 | 69 | 20.6 | 94 | Calm | 0 | 0 | ..... | 10k | 0 | E | ..... | 0 | 0 | Cloudy | |
| Eastport, Maine | 29.83 | 757.7 | 29.90 | 759.4 | 40 | 4.4 | 65 | S | 10 | 4.5 | ..... | 5c | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Erie, Pennsylvania | 28.81 | 735.5 | 29.57 | 751.1 | 53 | 11.7 | 48 | S | 9 | 4.0 | ..... | ..... | Haze | ..... | ..... | 0.15 | 3.8 | Hazy | |
| Escanaba, Michigan | 29.00 | 736.6 | 29.66 | 753.4 | 34 | 1.1 | 79 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | NW | 0.01 | 0.3 | Cloudy | |
| Florence, Arizona | 28.18 | 715.8 | 29.78 | 756.4 | 48 | 8.9 | 59 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | 23.94 | 608.1 | 29.94 | 760.5 | 37 | 2.8 | 37 | NW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | |
| Fort Craig, New Mexico | 25.22 | 640.6 | ..... | ..... | 43 | 6.1 | 28 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 28.94 | 735.1 | 29.45 | 748.0 | 60 | 15.6 | 77 | SE | 14 | 6.3 | ..... | 5k | 5ks | SE | SE | 0.10 | 2.5 | Cloudy | |
| Fort Griffin, Texas | 28.22 | 716.8 | 29.44 | 747.8 | 57 | 13.9 | 41 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Fort St. Michael, Alaska | 29.59 | 751.6 | 29.63 | 752.6 | 22 | — 5.6 | 86 | NE | 18 | 8.0 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Fort Sill, Indian Territory | 28.18 | 715.8 | 29.24 | 742.7 | 55 | 12.8 | 38 | S | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Galveston, Texas | 29.61 | 752.1 | 29.65 | 753.1 | 70 | 21.1 | 90 | S | 10 | 4.5 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Grand Haven, Michigan | 28.89 | 733.8 | 29.53 | 750.0 | 40 | 4.4 | 82 | NE | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | 0.09 | 2.3 | Foggy | |
| Indianapolis, Indiana | 28.86 | 733.0 | 29.60 | 751.8 | 59 | 15.0 | 43 | S | 6 | 2.7 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Indianola, Texas | 29.62 | 752.3 | 29.65 | 753.1 | 70 | 21.1 | 90 | S | 17 | 7.6 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Jacksboro, Texas | 28.35 | 720.1 | 29.44 | 747.8 | 54 | 12.2 | 55 | SW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0.15 | 3.8 | Clear | |
| Jacksonville, Florida | 29.99 | 761.7 | 30.02 | 762.5 | 67 | 19.4 | 79 | SE | 10 | 4.5 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Hazy | |
| Keokuk, Iowa | 28.86 | 733.0 | 29.44 | 747.8 | 58 | 14.4 | 76 | S | 2 | 0.9 | ..... | 0 | 7s | ..... | S | Inap. | Inap | Fair | |
| Key West, Florida | 29.97 | 761.2 | 30.00 | 762.0 | 73 | 22.8 | 76 | SE | 11 | 4.9 | ..... | 10c | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Kittyhawk, North Carolina | 29.99 | 761.7 | 30.01 | 762.2 | 54 | 12.2 | 93 | SW | 7 | 3.1 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Knoxville, Tennessee | 28.93 | 734.8 | 29.95 | 760.7 | 40 | 4.4 | 73 | Calm | 0 | 0 | ..... | ..... | Hz';sm | ..... | ..... | 0 | 0 | Smoky | |
| La Crosse, Wisconsin | 28.87 | 733.3 | 29.59 | 751.6 | 43 | 6.1 | 75 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| La Mesilla, New Mexico | 25.88 | 657.3 | 30.02 | 762.5 | 49 | 9.4 | 27 | W | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Leavenworth, Kansas | 28.60 | 726.4 | 29.41 | 747.0 | 55 | 12.8 | 87 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Los Angeles, California | 29.50 | 749.3 | 29.84 | 757.9 | 50 | 10.0 | 82 | NE | 8 | 3.6 | ..... | 0 | 8s | ..... | SW | 0.01 | 0.3 | Cloudy | |
| Louisville, Kentucky | 29.16 | 740.7 | 29.71 | 754.6 | 58 | 14.4 | 42 | S | 10 | 4.5 | ..... | ..... | Haze | ..... | Calm | 0 | 0 | Dense haze | |
| Lynchburg, Virginia | 29.23 | 742.4 | 29.92 | 760.0 | 44 | 6.7 | 67 | Calm | 0 | 0 | ..... | 5cs | 0 | ..... | ..... | 0 | 0 | Fair | |
| Marquette, Michigan | 28.98 | 736.1 | 29.69 | 754.1 | 33 | 0.6 | 79 | NW | 16 | 7.2 | ..... | ..... | 10s | ..... | NW | 0.12 | 3.0 | Cloudy | |
| Mason, Texas | 27.98 | 710.7 | 29.67 | 753.6 | 58 | 14.4 | 53 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.70 | 17.8 | Clear | |
| Memphis, Tennessee | 29.38 | 746.2 | 29.69 | 754.1 | 65 | 18.3 | 78 | SW | 12 | 5.4 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Milwaukee, Wisconsin | 28.83 | 732.3 | 29.54 | 750.3 | 43 | 6.1 | 83 | N | 12 | 5.4 | ..... | Haze | Sm'e | ..... | ..... | 0.03 | 0.8 | Smoky | |
| Mobile, Alabama | 29.82 | 757.4 | 29.89 | 758.4 | 65.5 | 18.6 | 97 | SE | 4 | 1.8 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Montgomery, Alabama | 29.68 | 753.9 | 29.91 | 759.7 | 59 | 15.0 | 45 | SE | 8 | 3.6 | ..... | 8k;hz | Haze | SW;Calm | Calm | 0 | 0 | Fair | |
| Morgantown, West Virginia | 28.73 | 729.7 | 29.75 | 755.6 | 57 | 13.9 | 58 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | S | Inap. | Inap. | Cloudy | |
| Mt. Washington, N. H. | 23.37 | 593.6 | 29.73 | 755.1 | 16 | — 8.9 | 100 | SW | 48 | 21.5 | ..... | ..... | 10n | ..... | SW | 0.12 | 3.0 | Sleeting | |
| Nashville, Tennessee | 29.26 | 734.2 | 29.78 | 756.4 | 60 | 15.6 | 55 | SE | 4 | 1.8 | ..... | 0 | 5s | ..... | SW | 0 | 0 | Fair | |
| New Haven, Connecticut | 29.80 | 756 9 | 29.92 | 760.0 | 42 | 5.6 | 74 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| New London, Connecticut | 29.90 | 759.4 | 29.95 | 760.7 | 41 | 5.0 | 74 | SW | 13 | 5.8 | ..... | ..... | 10s | ..... | SW | Inap. | Inap. | Cloudy | |
| New Orleans, Louisiana | 29.69 | 754.1 | 29.75 | 755.6 | 68 | 20.0 | 84 | SE | 7 | 3.1 | ..... | 5k | Haze | S | Calm | 0 | 0 | Fair | |
| Newport, Rhode Island | 29.88 | 758.9 | 29.93 | 760.2 | 40 | 4.4 | 82 | SW | 11 | 4.9 | ..... | ..... | 10ks | ..... | SW | 0 | 0 | Threatening | |
| New York, New York | 29.73 | 755.1 | 29.91 | 759.7 | 41 | 5.0 | 73 | S | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Norfolk, Virginia | 29.93 | 760.2 | 29.99 | 761.7 | 49 | 9.4 | 85 | S | 8 | 3.6 | ..... | 5ck;hz | Sm'e | SW | ..... | 0 | 0 | Fair | |
| North Platte, Nebraska | 26.69 | 677.9 | 29.24 | 742.7 | 37 | 2.8 | 86 | NE | 40 | 17.9 | ..... | ..... | 10n | ..... | NE | 0.46 | 11.7 | Light rain | |
| Olympia, Washington Ter. | 29.69 | 754.1 | 29.53 | 755.1 | 45 | 7.2 | 100 | N | 3 | 1.3 | ..... | ..... | Fog | ..... | Calm | 0.08 | 2.0 | Dense fog | |
| Omaha, Nebraska | 28.38 | 720.8 | 29.42 | 747.3 | 49 | 9.4 | 85 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0.08 | 2.0 | Cloudy | |
| Oswego, New York | 29.31 | 744.5 | 29.62 | 752.3 | 46 | 7.8 | 62 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Pembina, Dakota | 29.15 | 740.4 | 30.03 | 762.7 | 18 | — 7.8 | 84 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Philadelphia, Pennsylvania | 29.85 | 758.2 | 29.90 | 759.4 | 42 | 5.6 | 83 | S | 13 | 5.8 | ..... | ..... | 10s | ..... | W | 0.03 | 0.8 | Cloudy | |
| Phœnix, Arizona | 28.71 | 729.2 | 30.54 | 775.7 | 45 | 7.2 | 61 | N | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.38 | 441.4 | 29.59 | 751.6 | 10 | —12.2 | 100 | NW | 5 | 2.2 | ..... | ..... | 10n | ..... | NW | 0.58 | 14.7 | Light snow | |
| Pioche, Nevada | 23.78 | 604.0 | 29.55 | 750.6 | 35 | 1.7 | 54 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Pittsburg, Pennsylvania | 28.91 | 734.3 | 29.70 | 754.4 | 52 | 11.1 | 54 | SW | 1 | 0.4 | ..... | 5k | Fog | Calm | Calm | 0 | 0 | Fair | |
| Port Huron, Michigan | 28.90 | 734.0 | 29.56 | 750.8 | 38 | 3.3 | 81 | SW | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Portland, Maine | 29.83 | 757.7 | 29.88 | 758.9 | 40 | 4.4 | 65 | SW | 8 | 3.6 | ..... | 8k | 2s;hz | NW | Calm | 0 | 0 | Cloudy | |
| Portland, Oregon | 29.66 | 753.4 | 29.76 | 755.9 | 48 | 8.9 | 92 | N | 4 | 1.8 | ..... | 0 | 2ks | ..... | NW | 0.05 | 1.3 | Clear | |
| Prescott, Arizona | 24.48 | 621.8 | 29.84 | 757.9 | 33 | 0.6 | 61 | SW | ..... | ..... | 1 | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| Punta Rassa, Florida | 30.00 | 762.0 | 30.02 | 762.5 | 69 | 20.6 | 85 | SE | 10 | 4.5 | ..... | 5c | 0 | SW | ..... | 0 | 0 | Fair | |
| Red Bluff, California | 29.28 | 743.7 | 29.63 | 752.6 | 50 | 10.0 | 93 | NE | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.42 | 10.7 | Light rain | |
| Rochester, New York | 28.94 | 735.1 | 29.54 | 750.3 | 47 | 8.3 | 62 | SW | 10 | 4.5 | ..... | ..... | 10s;fg | ..... | NW;Calm | 0.07 | 1.8 | Cloudy | |

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roseburg, Oregon | 29.10 | 739.1 | 29.66 | 753.4 | 49.5 | 9.7 | 96 | N | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.11 | 2.8 | Light rain | |
| Sacramento, California | 29.53 | 750.0 | 29.62 | 752.3 | 53 | 11.7 | 83 | SE | 8 | 3.6 | ..... | 2k | 5s | SW | SE | 0.30 | 7.6 | Cloudy | |
| St. Louis, Missouri | 29.01 | 736.8 | 29.56 | 750.8 | 63 | 17.2 | 47 | S | 12 | 5.4 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| St. Marks, Florida | 29.95 | 760.7 | 29.97 | 761.2 | 52 | 11.1 | 93 | Calm | 0 | 0 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| St. Paul, Minnesota | 28.84 | 732.5 | 29.67 | 763.6 | 38 | 3.3 | 71 | N | 6 | 2.7 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.41 | 645.4 | 29.74 | 755.4 | 39 | 3.9 | 73 | Calm | 0 | 0 | ..... | 10k | 0 | N | ..... | 0.16 | 4.1 | Cloudy | |
| San Antonio, Texas | 28.94 | 735.1 | 29.50 | 749.3 | 67 | 19.4 | 95 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| San Diego, California | 29.84 | 757.9 | 29.91 | 759.7 | 53 | 11.7 | 93 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 28.95 | 735.3 | 29.60 | 751.8 | 54 | 12.2 | 50 | SW | 20 | 8.9 | ..... | 4ck | 5s | W | Calm | 0.02 | 0.5 | Smoky | |
| Sandy Hook, New Jersey | 29.88 | 758.9 | 29.91 | 759.7 | 42 | 5.6 | 83 | S | 17 | 7.6 | ..... | ..... | 10ks | ..... | W | 0.04 | 1.0 | Cloudy | |
| San Francisco, California | 29.55 | 750.6 | 29.61 | 752.1 | 53 | 11.7 | 86 | SE | 20 | 8.9 | ..... | ..... | 10n | ..... | SE | 0.49 | 12.4 | Light rain | |
| Santa Fé, New Mexico | 22.88 | 581.1 | 29.42 | 747.3 | 36 | 2.2 | 61 | N | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0.08 | 2.0 | Cloudy | |
| Savannah, Georgia | 29.93 | 760.2 | 30.03 | 762.7 | 58 | 14.4 | 82 | S | 2 | 0.9 | ..... | 5cs | Fog | SW | ..... | 0 | 0 | Fair | |
| Shreveport, Louisiana | 29.42 | 747.3 | 29.64 | 752.8 | 61 | 16.1 | 88 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | S | 0.45 | 11.4 | Cloudy | |
| Smithville, North Carolina | 30.03 | 762.7 | 30.06 | 763.5 | 58 | 14.4 | 94 | E | 2 | 0.9 | ..... | 8cs | 2ks | NW | SW | 0 | 0 | Cloudy | |
| Springfield, Massachusetts | 29.67 | 753.6 | 29.81 | 757.2 | 40 | 4.4 | 73 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Stockton, Texas | 26.66 | 677.2 | 29.66 | 753.4 | 52 | 11.1 | 53 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.85 | 758.2 | 29.91 | 759.7 | 39 | 3.9 | 73 | SW | 16 | 7.2 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Toledo, Ohio, | 28.90 | 734.0 | 29.55 | 750.6 | 53 | 11.7 | 61 | Calm | 0 | 0 | ..... | 2k | Haze | Calm | Calm | 0.02 | 0.5 | Fair | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 38 | 3.3 | 63 | SE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tybee Island, Georgia | 30.00 | 762.0 | 30.04 | 763.0 | 60 | 15.6 | 94 | S | 2 | 0.9 | ..... | 5c | Sm'e | W | Calm | 0 | 0 | Fair | |
| Umatilla, Oregon | 29.44 | 747.8 | ..... | ..... | 40 | 4.4 | 100 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | |
| Vicksburg, Mississippi | 29.48 | 748.8 | 29.73 | 755.1 | 66 | 18.9 | 84 | S | 5 | 2.2 | ..... | ..... | 10s | ..... | S | 0.45 | 11.4 | Clear | |
| Virginia City, Montana | 24.01 | 609.8 | 29.49 | 749.0 | 35 | 1.7 | 100 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0 | 0 | Cloudy | |
| Visalia, California | 29.38 | 746.2 | 29.74 | 755.4 | 52 | 11.1 | 79 | E | 3 | 1.3 | ..... | 0 | 9s | ..... | S | 0.02 | 0.5 | Light rain | |
| Washington, D. C. | 29.79 | 756.7 | 29.91 | 759.7 | 46 | 7.8 | 84 | SE | 5 | 2.2 | ..... | 8ck | Haze | SW | S | 0 | 0 | Cloudy | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 57 | 2.8 | 91 | S | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | |
| Wilmington, N. Carolina | 29.96 | 761.0 | 30.04 | 763.0 | 55 | 12.8 | 93 | S | 5 | 2.2 | ..... | 5c | Fog | W | Calm | 0 | 0 | Clear | |
| Winnemucca, Nevada | 26.33 | 643.4 | 29.60 | 751.1 | 37 | 2.8 | 71 | NE | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Fair | |
| Wood's Holl, Mass | 29.90 | 759.4 | 29.95 | 760.7 | 42 | 5.6 | 74 | SW | 15 | 6.7 | ..... | ..... | 10s | ..... | SW | Inap. | Inap. | Cloudy | |
| Yankton, Dakota | 28.40 | 721.3 | 29.71 | 754.6 | 34 | 1.1 | 79 | N | 17 | 7.6 | ..... | ..... | 10s | ..... | N | 0 | 0 | Threatening | |
| Yuma, Arizona | 29.66 | 753.4 | 29.83 | 757.7 | 52 | 11.1 | 72 | Calm | 0 | 0 | ..... | 0 | 8ks | ..... | Calm | 0 | 0 | Cloudy | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 29.73 | 755.1 | 29.79 | 756.7 | — 3.0 | —19.4 | 83 | N | 18 | 8.0 | ..... | 3c | 2s | NW | ..... | 0.02 | 0.5 | Cloudy | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 29.96 | 760.7 | 29.97 | 761.2 | 78 | 25.8 | 71 | SE | 6.0 | 2.7 | ..... | 8c | 0 | SW | ..... | 0 | 0 | Fair | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.07 | 763.8 | 30.08 | 764.0 | 77 | 25.0 | 90 | Calm | 0 | 0 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.88 | 758.9 | 29.96 | 761.0 | 81 | 27.2 | ..... | NE | 11 | 4.9 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | ..... | ..... | 29.98 | 761.5 | 84 | 28.9 | 71 | NE | ..... | ..... | 3 | 0 | 4k | ..... | ..... | 0 | 0 | Fair | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | 30.02 | 762.4 | 30.02 | 762.6 | 81.5 | 27.5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 26.19 | 639.8 | ..... | ..... | 69.5 | 20.8 | 79 | Calm | ..... | ..... | 0 | ..... | 10ks | ..... | ..... | 0.04 | 1.0 | ..... | Thomas Herran |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medillin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.6 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,102 ft., or 1,555.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,862.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.8 (?) m.; Wickenburg, 2,000 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.56 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er —10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NavyYard, Mare Island, Cal. | 29.58 | 751.3 | 52 | 11.1 | 52 | 11.1 | 93 | SE | 13 | 5.8 | ..... | ..... | 10n | ..... | S&E | 0.24 | 6.1 | ..... | ..... | Raining..... | |
| Navy Yard, Pensacola, Fla. | 30.01 | 762.2 | 67 | 19 4 | 67 | 19.4 | ?? | E | 13 | 5.8 | ..... | ..... | 0? | ..... | ..... | 1.33 | 33.8 | ..... | ..... | Cloudy..... | |
| NavyYard, Portsmouth, N.H. | 29.95 | 760.7 | 74 | 23.3 | 34 | 1.1 | 71 | SSW | 4 | 1.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Snowing..... | |
| Naval Hospital, Yokohama, Japan | 29.54* | 757.9* | 55 | 12 8 | 47.2 | 8.4 | 55 | NNE | ..... | ..... | 4 | ..... | 2cs | ..... | NE | 0 | 0 | ..... | ..... | Fair ..... | |
| Adams. Panama | 29.93 | 760.2 | 82 | 27.8 | 82 | 27.8 | 83 | NW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Alliance, Piraeus, Greece | 29.92‡ | 760.0‡ | ..... | ..... | 55 | 12.8 | 74 | WNW | ..... | ..... | 4–6 | ..... | 3 | ..... | NW | ..... | ..... | ..... | ..... | Clear ..... | |
| Ashuelot. Shanghai, China | 30.15* | 765.8* | 56 | 13.3 | 54 | 12.2 | 74 | E | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Showery..... | |
| Canonicus, New Orleans, La. | 29.77 | 756.1 | 49 | 9.4 | 67 | 19.4 | 100 | E | ..... | ..... | 1 | ..... | 9 | ..... | N&E | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Colorado, New York, N. Y. | 29.88‡ | 758 9‡ | ..... | ..... | 41 | 5.0 | 82 | S | 12 | 5.4 | ..... | ..... | 10 | ..... | WSW | 0.02 | 0.5 | ..... | ..... | Threatening | |
| Constitution, N. 49° 08′ W. 6° 04′ | 29.87‡ | 758.7‡ | ..... | ..... | 48 | 8.9 | 85 | ESE | ..... | ..... | 2 | ..... | 8 | ..... | Calm | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Despatch, Constantinople, Turkey. | 29.65 | 753.1 | 63 | 17.2 | 46 | 7.8 | 92 | W | ..... | ..... | 3 | ..... | 10 | ..... | NW | ..... | ..... | Smooth | ..... | Raining..... | |
| Enterprise, Pensacola, Florida | 29.89‡ | 759.2‡ | ..... | ..... | 68 | 20.0 | 90 | ESE | ..... | ..... | 3 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Fair..... | |
| Franklin, Norfolk, Va. | 30.12‡ | 765.0‡ | ..... | ..... | 50 | 10.0 | 86 | S | 8 | 3.6 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | D. clouds..... | |
| Gettysburg Valetta, Malta | 30.13‡ | 765.3‡ | ..... | ..... | 56 | 13.3 | ?? | W | ..... | ..... | 4 | ..... | 2 | ..... | W | 0 | 0 | ..... | ..... | Clear..... | |
| Guard, Porto Grande, Cape Verde Islands. | 29.99 | 761.7 | 76 | 24.4 | 75 | 23.9 | 68 | NE | ..... | ..... | 2 | ..... | 2 | ..... | NE | ..... | ..... | ..... | ..... | Clear..... | |
| Marion, Smyrna, Turkey | 29.65 | 753.1 | 60 | 15.6 | 53 | 11.7 | 67 | W | ..... | ..... | 4 | ..... | 10 | ..... | Calm | Mod'ate | Mod'ate | Smooth | W | Cloudy..... | |
| Michigan, Erie, Pa. | 29.19 | 741.4 | 60 | 15.6 | 54 | 12.2 | 43 | WSW | ..... | ..... | 4 | ..... | 10 | ..... | WSW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monongahela. Hong-Kong, China. | 29 99* | 761.7* | 70 | 21.1 | 73 | 22.8 | 72 | SE | ..... | ..... | 6–7 | ..... | 9 | ..... | ..... | Mod'ate | Mod'ate | ..... | ..... | Raining..... | |
| New Hampshire, Port Royal, S. C. | 30.24 | 768.1 | 57 | 13.9 | 54 | 12.2 | 74 | Calm | 0 | 0 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Misty..... | |
| Omaha, N. 14° 54′, W. 56° 52′. | 30.09* | 764.3* | 82.5 | 28.1 | 82.5 | 28.1 | 69 | ESE | 3 | 1.3 | ..... | ..... | 5 | ..... | E | 0 | 0 | Smooth | ..... | Bright ..... | |
| Onward, Callao, Peru | 29.96† | 761.0† | ..... | ..... | 74 | 23.3 | 90 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, N. 24° 58′, W. 97° 47′. | 29.66‡ | 753.4‡ | ..... | ..... | 71 | 21.7 | 100 | S | ..... | ..... | 2 | ..... | 8 | ..... | S | ..... | ..... | Long | SE | Cloudy..... | |
| Palos, Shanghai, China | 30.14* | 765.5* | 57 | 13.9 | 48 | 8.9 | 85 | ESE | ..... | ..... | 3–4 | ..... | 10 | ..... | E | ..... | ..... | ..... | ..... | Raining..... | |
| Pensacola, Honolulu, H. I. | 30.24 | 768.1 | 73 | 22.8 | 70 | 21.1 | 90 | NE | ..... | ..... | 1 | ..... | 5 | ..... | NE | 0.01 | 0.3 | ..... | ..... | Fair ..... | |
| Plymouth. Norfolk, Va. | 30.05‡ | 763.3‡ | ..... | ..... | 50 | 10.0 | 86 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | wsw | ..... | ..... | ..... | ..... | Misty..... | |
| Powhatan, N. 33° 43′ 30″, W. 77° 07′ 30″ | 30.10‡ | 764.5‡ | ..... | ..... | 64 | 17.8 | 100 | SSE | 2.4 | 1.1 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Moda'te | SSE | Pleasant..... | |
| Ranger, Amoy, China | 30.11* | 764.8* | ..... | ..... | 65 | 18.3 | 73 | SSE | ..... | ..... | 0–1 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | D. clouds..... | |
| Rio Bravo, Brownsville, Texas | ..... | ..... | ..... | ..... | 71 | 21.7 | 95 | S | ..... | ..... | 1 | ..... | 10 | ..... | E | ..... | ..... | ..... | ..... | Cloudy..... | |
| Santee, Annapolis, Md | 29.98* | 761.5* | 63 | 17.2 | 48 | 8.9 | 85 | S | ..... | ..... | 4 | ..... | 9 | ..... | W | 0 | 0 | ..... | ..... | Hazy..... | |
| Saratoga, Washington, D. C. | 29.86* | 758.4* | ..... | ..... | 53 | 11.7 | ?? | SW | ..... | ..... | 2 | ..... | 7 | ..... | W | ..... | ..... | ..... | ..... | Cloudy..... | |
| St. Louis, League Island, Pa | 29.90 | 759.4 | 57 | 13.9 | 44 | 6.7 | 76 | SE | 12 | 5.4 | ..... | ..... | 10 | ..... | SW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Supply, Havre, France | 29.95 | 760.7 | 52 | 11.1 | 49 | 9.4 | 71 | NW | ..... | ..... | 3 | ..... | 8 | ..... | NW | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Swatara, Cartagena, New Grenada | 29.91* | 759.7* | ..... | ..... | 83 | 28.3 | 83 | Calm | ..... | ..... | 0 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | D. clouds..... | |
| Tennessee, Colombo, Ceylon | 29.91* | 759.7* | 87 | 30.6 | 86 | 30.0 | 92 | W | 3 | 1.3 | ..... | ..... | 4 | ..... | W | 0 | 0 | Slight | W | D. clouds..... | |
| Trenton, Piraeus, Greece | 29.72‡ | 754.9‡ | ..... | ..... | 58 | 14.4 | 76 | NW | ..... | ..... | 5–7 | ..... | 5 | ..... | NW | 0 | 0 | Mod'ate | NW | Squally ..... | |
| Tuscarora, N. 24° 15′ 31″ W. 110° 20′ 47″ | 30.00 | 762.0 | 65 | 18.3 | 63 | 17.2 | 78 | SSE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |
| Vandalia, N. 38° 44′, E. 13° 19′ | 30 16‡ | 766.1‡ | ..... | ..... | 56 | 13.3 | 63 | WNW | ..... | ..... | 4 | ..... | 8 | ..... | WNW | ..... | ..... | Mod'ate | NW | Cloudy..... | |
| Wabash. Boston, Mass. | 29.93‡ | 760.2‡ | ..... | ..... | 41 | 5.0 | 74 | SSW | 7 | 3.1 | ..... | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Cloudy..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0 - 10. | From— | From— | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Panama, Nanaimo, B. C. | | | 29.85* | 758.2* | | | | Calm | | | 0 | | Fog | | | | | Foggy | Capt. Cobb. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Tokio, Hong-Kong, China | | | | | 71 | 21.7 | | E | | | 6 | | 9 | | ENE | | | D. clouds | Capt. Dearborn. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Corrected for temperature and elevation; instrumental error not known.

**WHITE STAR LINE MARINE SERIES.**

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, N. 44° 22' W. 45° 08' | | | 29.65† | 753.1† | 54 | 12.2 | ?? | S | | | 5 | | 10 | | | Very high. | S | Misty | Capt. W. H. Thompson |
| S. S. Celtic, New York, N. Y. | | | 29.96† | 761.0† | 42 | 5.6 | | NW | | | 4 | | | NW | | | | D. clouds | Capt. B. Gleadell. |
| S. S. Germanic, N. 43° 9', W. 48° 49' | | | 29.89† | 759.2† | 88 | 3.3 | 81 | N | | | 6 | | 10 | | | Long | NNW | Overcast | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Aneroid.

**OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.**

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, N. 40° 16', E. 169° 51' | | | 29.27* | 743.4* | | | | WSW | | | 2 | | Light | | W | Mod'ate | W | D. clouds | Capt. John Metcalf. |
| S. S. Gaelic, N. 28° 02', E. 117° 30' | | | 29.87† | 758.7† | 59 | 15.0 | ?? | NE | | | 3 | | Fog | | | Smooth | NE | Foggy | Capt. W. H. Kidley |
| S. S. Oceanic, N. 37° 46', W. 160° 37' | | | 29.28 | 743.7 | 49 | 9.4 | 85 | WSW | | | 6 | | 5 | | WSW | | SW | Squally | Capt. H. Parsell. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

**NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.**

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg, N. 47° 25', W. 11° 47' | | | 29.52 | 749.8 | 54.5 | 12.5 | 87 | E | | | 6 | | 8 | | SE | Rough | SSE | Drizzling | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAME OF VESSELS. | TRUE COURSE TOWARD— | HOURLY RATE IN KNOTS. | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | SEA-SWELL. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | CHARACTER. | DIRECTION FROM— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, Mersey River | | | 30.03† | 762.7† | 42 | 5.6 | 83 | NW | | | 3 | | 97 | | N | | | Clear† | Captain Sargent. |
| S. S. Ohio, Philadelphia, Pa | | | 29.84 | 757.9 | 45 | 7.2 | 84 | SSW | | | 1 | | 9 | | WSW | | | Dull | Captain Morrison. |
| S. S. Pennsylvania | | | | | | | | | | | | | | | | | | | Captain Harris. |
| **RED STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| **ALLAN LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of A. Schumacher, & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Scandinavian | | | | | | | | | | | | | | | | | | | |
| **MARINE SERIES. (Miscellaneous.)** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller, Crisfield, Md. | | | 29.89 | 759.2 | 53 | 11.7 | 80 | S | 7 | 3.1 | | | 8cs;sm. | | | | | Smoky | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.52 | 749.8 | 28 | — 2.2 | 100 | SE | 22 | 9.8 | | | 10s | | Calm | | | Cloudy | O. T. Sherman. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. †Aneroid; unreliable, corrected for elevation, instrumental error not known.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg'l.) Chief Signal Officer, U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 29, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.05 | 763.2 | 64.6 | 18.1 | ..... | NW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0.12 | 3. | Fair | Dr. Ollive. |
| Nemours | ..... | ..... | 29.73 | 755.2 | 66.6 | 19.2 | 66 | WNW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Michel. |
| Algiers | ..... | ..... | 29.56 | 750.9 | 64.8 | 18.2 | 60 | W | ..... | ..... | 7 | ..... | 4 | ..... | ..... | 0.201 | 5.1 | Very cloudy | Towilliere. |
| La Calle | ..... | ..... | 29.60 | 751.8 | 64.4 | 18.0 | 68 | NW | ..... | ..... | 5 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Boulangeot. |
| Tunis | ..... | ..... | 29.62 | 752.3 | 66.0 | 18.9 | 66 | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.031 | 0.8 | Covered | Jacques. |
| Sfax | ..... | ..... | 29.71 | 754.5 | 69.8 | 21.0 | ..... | SSE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair | Gau. |
| Saida | ..... | ..... | 29.74 | 755.4 | 62.6 | 17.0 | 64 | SSW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0.150 | 3.8 | Pretty fair | Herbin. |
| Tebessa | ..... | ..... | 29.68 | 753.9 | ..... | ..... | ..... | SW | ..... | ..... | 8 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Bourgeois. |
| Geriville | ..... | ..... | 29.99 | 761.7 | 56.1 | 13.4 | 86 | NNW | ..... | ..... | 8 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Lemaillot. |
| Laghouat | ..... | ..... | 29.77 | 756.1 | 68.0 | 20.0 | 35 | W | ..... | ..... | 7 | ..... | 4 | ..... | ..... | 0.04 | 1. | Cloudy | Guyot. |
| Biskra | ..... | ..... | 29.73 | 755.1 | 72.1 | 22.3 | 43 | E | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.1? ft.; Geriville, 1,389? m.; or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.08 | 738.6 | 29.63 | 752.5 | 60.5 | 10.3 | 83 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.004 | 0.1 | Raining | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 28.87 | 733.2 | 29.63 | 752.5 | 52.9 | 11.6 | 57 | NE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbiski. |
| Eperies | 28.87 | 733.4 | 29.76 | 755.9 | 46.0 | 7.8 | 58 | S | ..... | ..... | 2 | ..... | 10k;s | ..... | Calm | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.33 | 719.5 | 29.56 | 750.7 | 55.4 | 13.0 | 58 | WNW | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.43 | 722.2 | 29.85 | 758.3 | 49.8 | 9.9 | 39 | SE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. Reissenberg |
| Kremsmünster | 27.96 | 710.3 | 29.27 | 743.4 | 54.3 | 12.4 | 54 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner |
| Lemberg | 28.82 | 732.1 | 29.83 | 757.6 | 41.7 | 5.4 | 68 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Dr. T. Stanecki. |
| Pola | 29.47 | 748.4 | 29.58 | 751.2 | 53.4 | 11.9 | 91 | SE | ..... | ..... | 7 | ..... | 10s | ..... | ..... | 0.201 | 5.1 | Foggy | I.R.Hydrographic Office |
| Szathmar | 29.41 | 747.0 | 29.88 | 758.9 | 48.9 | 9.4 | 44 | SE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Johann Tumas, S. J. |
| Szegedin | 29.47 | 748.5 | 29.75 | 755.6 | 54.0 | 12.2 | 60 | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Karl Stancel. |
| Trieste | 29.52 | 749.8 | 29.62 | 752.4 | 52.3 | 11.3 | 92 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 1.417 | 36.0 | Raining | P. Busin. |
| Vienna | 28.77 | 730.7 | 29.48 | 748.7 | 50.2 | 10.1 | 59 | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 27.08 | 703.1 | 29.17 | 741.0 | 45.0 | 7.2 | 93 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.083 | 2.1 | ..... | Prof. M. Passau. |
| Brussels | 28.88 | 733.6 | 29.08 | 738.5 | 53.2 | 11.8 | 74 | S | ..... | ..... | 1 | ..... | 10 | ..... | S | 0.445 | 11.3 | ..... | Royal Observatory. |
| Furnes | 29.08 | 738.5 | 29.10 | 739.1 | 39.7 | 4.3 | 95 | ENE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.516 | 13.1 | ..... | M. E. de Cae. |
| Maeseyck | 29.08 | 738.6 | 29.21 | 741.8 | 55.0 | 12.8 | 78 | SSE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.091 | 2.3 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4? set. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

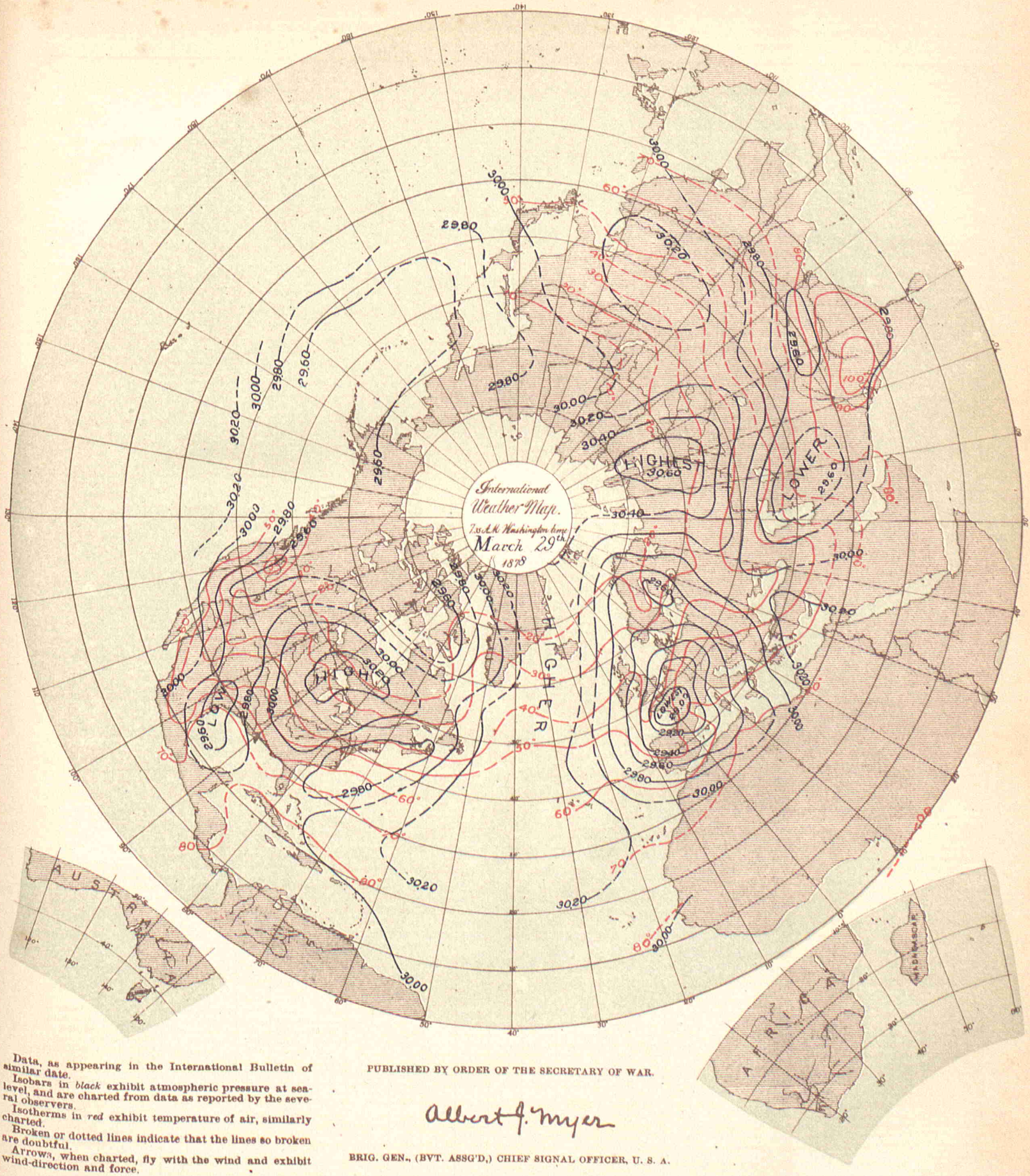
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Force. (1—10. | Clouds. Amount. Up'er (0—10. | Clouds. Amount. Low'r (0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.53 | 750.0 | 29.63 | 752.6 | 39.0 | 3.9 | ..... | N | 24 | 10.7 | ..... | ..... | 5 | ..... | ..... | 0.21( | 5.33 | Squally..... | W. Boswell. |
| Ardrossan | 29.64 | 752 8 | 29.66 | 753.4 | 45 | 7.2 | ..... | NNE | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.71 | 754.6 | 46.0 | 7.8 | ..... | NNE | 15 | 6.7 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | S. Call, for Dr. Robinson. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.59 | 749.3 | 41.1 | 5 1 | ..... | NE | 20 | 8.9 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Overcast.... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 29.70 | 754.4 | 43.0 | 6.1 | ..... | NE | ..... | ..... | 4–5 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | J. Dreyer. |
| Bradford, Yorkshire | 29.66 | 738.1 | 29.45 | 748.0 | 41.1 | 5.1 | ..... | E | ..... | ..... | 6 | ..... | 8 | ..... | ..... | 0 | 0 | D. clouds.... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.93 | 760.2 | 29.96 | 761.0 | 83.5 | 28.6 | ..... | NE | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.33 | 745.0 | 35.0 | 1.7 | ..... | NNE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Rain & snow | H. Todd. [H. O. |
| Cardington | ..... | ..... | 29.34 | 745.2 | 34.0 | 1.1 | ..... | E | ..... | ..... | 7 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast.... | John McLaren. |
| Chatham, School M. E. | 29.10 | 739.1 | 29.24 | 742.7 | 34.2 | 1.2 | ..... | NE | ..... | ..... | 5. | ..... | 10 | ..... | ..... | Blank | Blank | Overcast.... | Lt. W. G. Morris, R. E. |
| Dartmoor | 27.85 | 707.4 | 29.35 | 745.5 | 30.4 | — 0.9 | ..... | NE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Heavy snow | Alexander Watt. |
| Donaghadee | 29.66 | 753.4 | 29.68 | 753.9 | 41 | 5.0 | ..... | NNE | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | J. Mac Gowan. |
| Dover | 29.11 | 739.4 | 29.13 | 739.9 | 39 | 3.9 | ..... | SE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.47 | 748.5 | 42.0 | 5.6 | ..... | NE | 4.4 | 2.0 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | Thomas Mackereth. |
| Falmouth, Observatory | 29.00 | 736.6 | 29.23 | 742.4 | 35.2 | 1.8 | ..... | NNE | ..... | ..... | 7 | ..... | 10 | ..... | ..... | ..... | ..... | Snow & hail | The Staff. |
| Fort Napier, (Natal) | 27.57 | 700.3 | 29.78 | 756.4 | 76.0 | 24.4 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.69 | 754.1 | 29.92 | 760 0 | 89 | 31.7 | ..... | NW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | |
| Galway, Queen's College | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.67 | 753.6 | 29.74 | 755.4 | 58.0 | 14.4 | ..... | W | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | Showery..... | Corpl. C. Aitken, A. H. C. |
| Glasgow, Observatory | 29.46 | 748.3 | 29.66 | 753.4 | 41.8 | 5.4 | ..... | NNE | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | D. G. Maclean. |
| Great Yarmouth | 29.28 | 743.7 | 29.29 | 744.0 | 34 | 1 1 | ..... | NE | ..... | ..... | 7 | ..... | 8 | ..... | ..... | ..... | ..... | Rain & snow | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.08 | 738.6 | 29.26 | 743.2 | 33.7 | 0.9 | ..... | NNE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast.... | The Staff, for G. B. Airy. |
| Guernsey | 28.83 | 732.3 | 29.06 | 738.1 | 40.5 | 4.7 | ..... | NE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Dr. S. E. Hoskins, F. R. S. |
| Helston | ..... | ..... | 29.21 | 741.9 | 35 | 1.7 | ..... | N | ..... | ..... | 6 | ..... | 10k | ..... | ..... | 0.76 | 19.3 | Snowing..... | M. P. Moyle. |
| Holyhead | 29.50 | 749.3 | 29.56 | 750.8 | 41 | 5.0 | ..... | NE | ..... | ..... | 6 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | John Tilston. |
| Jersey | 28.68 | 728.5 | 28.97 | 735.8 | 42.2 | 5.7 | ..... | NE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast.... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 29.26 | 743.2 | 34.2 | 1.2 | ..... | NE | 36 | 16.1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Threatening | The Staff. |
| Kingstown | 29.60 | 751.8 | 29.63 | 752.6 | 41 | 5.0 | ..... | NNE | ..... | ..... | 6 | ..... | 3 | ..... | ..... | Blank | Blank | Blue sky..... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.39 | 746.5 | 38.9 | 3.8 | ..... | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast.... | Wm. J. Harrison, F. G. S. |
| Malta, (Mediterranean) | 29.69 | 754.1 | 29.76 | 755.9 | 61.0 | 17.8 | ..... | SE | ..... | ..... | 10 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds... | Sgt. Fred. Travis, A. H. |
| Nairn | 29.65 | 753.1 | 29.74 | 755.4 | 36 | 2.2 | ..... | NNE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast.... | W. D. Penny. [O. |
| Nassau, (Bahamas) | ..... | ..... | 29.96 | 761.0 | 79.5 | 26.4 | ..... | SW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | C. S. Duncombe. |
| Nottingham, Observatory | 29.24 | 742.7 | 29.43 | 747.5 | 40.2 | 4.6 | ..... | NE | ..... | ..... | 6 | ..... | 10kjoc;d | ..... | NE | 0 | 0 | Overcast.... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 28.87 | 733.3 | 29.40 | 746.7 | 37.0 | 2.8 | ..... | NNE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast.... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.31 | 744.5 | 34 | 1.1 | ..... | NE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Light snow.. | Mr. Lucas. |
| Plymouth | 29.10 | 739.1 | 29.18 | 741.2 | 36.3 | 2.4 | ..... | NE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | John Merrifield. |
| Roche's Point | 29.52 | 749.8 | 29.56 | 750.8 | 42 | 5.6 | ..... | NE | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | Mod'a e gale | W. Kennedy. |
| Saint Ann's Head | 29.25 | 742.9 | 29.42 | 747.3 | 39 | 3.9 | ..... | NE | ..... | ..... | 6 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | John O. Walker. |
| Sandwick Manse, (Orkneys. | ..... | ..... | 29.72 | 754.9 | 35 | 1.7 | ..... | N | 27 | 12.1 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.. . | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 30.14 | 765.5 | 57.2 | 14.0 | ..... | SW | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | Sergt. W. H. Lyne. |
| Sheffield | 29.20 | 741.7 | 29.48 | 748.8 | 41.1 | 5.1 | ..... | NE | ..... | ..... | 7 | ..... | 9 | ..... | ..... | 0 | 0 | Overcast.... | W. F. Cooper. |
| Silloth Rectory | 29.57 | 751.1 | 29.60 | 751.8 | 43.4 | 6.3 | 63 | E | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.13 | 739.9 | 29.53 | 750.0 | 39.9 | 4.4 | ..... | NE | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | Squally..... | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 29.77 | 756.1 | 35 | 1.7 | ..... | NNE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded.... | John Sutherland. |
| Strathfield Turgiss | 29.05 | 737.9 | 29.27 | 743.4 | 33.9 | 1.1 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | Rev. C. H. Griffith, F. M. |
| Thurso | ..... | ..... | 29.71 | 754.6 | 40 | 4.4 | ..... | NNE | ..... | ..... | 5 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 29.30 | 744.2 | 38 | 3.3 | ..... | NE | ..... | ..... | 16 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 29.62 | 752.3 | 42.4 | 5.8 | ..... | NNE | 36 | 16.1 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | Squally..... | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.74 | 755.4 | 72.0 | 22.2 | 78 | S | ..... | ..... | 2 | ..... | 5k | ..... | ..... | 0 | 0 | ..... | Francis Abbott, F. R. A. S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.77 | 756.1 | 29.95 | 760.8 | 83.2 | 28.4 | 76 | ENE | 8.0 | 3.6 | ..... | 3 | 4 | WSW | ENE | 0.08 | 2.0 | Cloudy; fine | C. Meldrum. |
| Melbourne, Observatory | 29.86 | 758.4 | 29.95 | 760.7 | 57.7 | 14.3 | 95 | WSW | 22 | 9.8 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | Boisterous... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngehuse. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft, or 670.6 m.

| Marine Series. Vessels. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|
| S. S. Algeria | ..... | ..... | ..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | Capt. W. R. Cato. |
| Barque Maroon | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | Capt. C. C. Prehn. |
| S. S. Peruvian, N. 44° 10′, W. 56° 10′ | 8 | SW | Foggy | Capt. W. H. Smith, R. N. [R. |
| Royal Alice | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire, N. 40° 45′ W. 55° 50′ | 1 | S | D. clouds.... | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—1. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.19 | 665.2 | | | 67.6 | 19.8 | 57 | NE | | | 1 | 6pc;s | | | | 0 | 0 | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.43 | 747.6 | 29.48 | 748.8 | 39.2 | 4.0 | 61 | ESE | | | 6 | | 10 | | | | | | |
| Faröe | 29.38 | 746.2 | 29.40 | 746.7 | 34.0 | 1.1 | 92 | ENE | | | 4 | | 10 | | | | | Rain & snow | |
| Godthaab, (Greenland) | 29.73 | 756.3 | 29.82 | 757.4 | 33.8 | 1.0 | 90 | S | | | 6 | | 10 | | | | | Snowing | |
| Stykkisholm, (Iceland) | 30.22 | 767.5 | 30.26 | 768.6 | 24.3 | — 4.3 | 100 | E | | | 7 | | 8 | | | | | | |
| Thorshavn, (Faröe) | 29.90 | 759.4 | 29.93 | 760.3 | 32.5 | 0.3 | 60 | NE | | | 4 | | 4 | | | | | | |
| Vestervig | 29.32 | 744.8 | 29.49 | 749.1 | 36.3 | 2.4 | 75 | E | | | 4 | | 6 | | | | | Snowing | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 28.53 | 724.6 | 29.08 | 738.6 | 46.4 | 8 | 71 | E | | | 1 | | 8 | | | 0.635 | 21.2 | Very cloudy | Colignon, Director. |
| Amiens, Normal School | 28.95 | 735.2 | 29.06 | 738.0 | 39.4 | 15.2 | 70 | S | | | 2 | | 2 | | S | 0.59 | 15. | Slightly cl'dy | Bonvarne, Director. |
| Avignon, Normal School | 29.07 | 738.3 | 29.15 | 740.3 | 61.7 | 16.5 | 56 | S | | | 8 | | 5 | | S | 0 | 0 | Cloudy | Mr. Giraud, Director |
| Bar-sur-Seine | 28.47 | 723.1 | 29.01 | 736.9 | 53.6 | 12.0 | 75 | SSE | | | 1 | | 10 | | NW | 0.406 | 10.3 | Covered | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 56.3 | 13.5 | 64 | S | | | 1 | | 8 | | SSW | 0.571 | 14.5 | Very cloudy | Normal School. |
| Besançon | 28.22 | 716.7 | 29.07 | 738.3 | 61.2 | 16.2 | 61 | E | | | 2 | | 2 | | S | 0.028 | 0.7 | Slightly cl'dy | Normal School. |
| Bourg-en-Bresse | 28.22 | 716.8 | 29.11 | 739.5 | 57.4 | 14.1 | 63 | S | | | 2 | | 10n | | S | 0 | 0 | Covered | Normal School. |
| Bourges, Normal School | 28.50 | 723.8 | 29.07 | 738.3 | 55.4 | 13 | 84 | SE | | | 1 | | 2 | | S | 0.63 | 16. | Slightly cl'dy | A. Wagner, Director. |
| Brest, Naval Observatory | 28.76 | 730.4 | 28.98 | 736.0 | 45.1 | 7.3 | 85 | SW | | | 1 | | 10 | | SW | 0.098 | 2.50 | | The Staff. |
| Carcassonne, Normal School | 28.76 | 730.4 | 29.16 | 740.7 | 50.4 | 10.2 | 74 | W | | | 6 | | 2 | | S | 0 | 0 | Slightly cl'dy | Vateau, Director. |
| Caen | 28.96 | 735.6 | 29.04 | 737.5 | 47.8 | 8.8 | 84 | N | | | 6 | | 8 | | SE | 0.008 | 0.2 | Very cloudy | Normal School. |
| Chartres, Normal School | 28.43 | 722.1 | 28.98 | 736.1 | 51.6 | 10.9 | 93 | E | | | 2 | | 10 | | | 0.51 | 13. | Covered | Lequin, Director. |
| Châlons-sur-Marne, N. Sch' | 28.74 | 730.1 | 29.06 | 738.0 | 51.4 | 10.8 | 86 | S | | | 3 | | 10cn | | S | 0.433 | 11.0 | Covered | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 27.58 | 700.4 | 28.85 | 732.8 | 64.4 | 18.0 | 86 | SW | | | 3 | | 10 | | S | 0 | 0 | Covered | Allnard, Director. |
| Commercy, Normal School | 28.30 | 718.9 | 29.18 | 741.1 | 44.6 | 7 | 94 | ESE | | | 4 | | 10 | | ESE | 0.94 | 24. | Covered | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.13 | 714.5 | 29.27 | 743.5 | 54.9 | 12.7 | 75 | SE | | | 4 | | 8 | | SE | 0 | 0 | ¾ covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La-Roche-sur-Yon, N. School | 28.75 | 730.2 | 28.96 | 735.5 | 49.3 | 9.6 | 89 | SE | | | 2 | | 10 | | | 0.638 | 16.2 | Covered | Mouillot, Director. |
| Le Mans, Normal School | 28.65 | 727.7 | 28.95 | 735.4 | 49.6 | 9.8 | 84 | W | | | 4 | | 8 | | W | 0 | 0 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.17 | 715.5 | 29.07 | 738.3 | 67.2 | 14 | 61 | NE | | | 2 | | 10 | | | 0.016 | 0.40 | Covered | Voudez, Director. |
| Lorient, Naval Observatory | 28.90 | 734.1 | 29.00 | 736.6 | 50 | 10.0 | 74 | NW | | | 2 | | 5 | | NW | 0.354 | 9.0 | ½ covered | T. Carré, Director. |
| Mâcon, Normal School | 28.37 | 720.7 | 29.04 | 737.6 | 55.0 | 12.8 | 81 | Calm | | | 0 | | 5 | | S | 0 | 0 | Cloudy | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | 28.10 | 713.7 | 29.11 | 739.3 | 56.8 | 13.8 | 60 | SSW | | | 2 | | 8 | | NNE | 0 | 0 | Very cloudy | Normal School. |
| Nismes, Normal School | 28.91 | 734.4 | 29.11 | 739.4 | 61.2 | 16.2 | 64 | S | | | 8 | | 5 | | S | 0.35 | 9. | Cloudy | Boyer, Director. |
| Orleans, Normal School | 28.56 | 725.4 | 28.93 | 734.8 | 51.8 | 11 | 85 | NE | | | | | 10 | | | 0 | 0 | Covered | Bernard, Director. |
| Paris, Observatory | 28.78 | 731.1 | 29.02 | 737.0 | 53.4 | 11.9 | 73 | ESE | | | 1 | | 10 | | SE | 0.364 | 9.25 | Covered | National Observatory. |
| Privas | 28.07 | 713.0 | 29.12 | 739.6 | 50.0 | 10 | 72 | S | | | 6 | | 5 | | S | 0.71 | 18. | Cloudy | Normal School |
| Puy de Dome (Summit) | | | | | | | | | | | | | | | | | | | Allnard, Director. |
| Rochefort, Naval Obs'y | 28.96 | 735.5 | 28.99 | 736.3 | 48.2 | 9.0 | 92 | SW | | | 3 | | 10 | | SW | 0.79 | 20. | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 28.95 | 735.3 | 29.04 | 737.5 | 37.0 | 2.8 | 61 | SW | | | 3 | | 8 | | SW | 0.744 | 18.9 | Very cloudy | F. Lucard, Director. |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | M. H. Hercouet. |
| Tarbes, Normal School | 27.98 | 710.6 | 29.03 | 737.4 | 50.0 | 10 | 62 | SW | | | 4 | | 10 | | | 0.16 | 4. | Raining | T. Hugues, Director. |
| Villefranche | 28.37 | 720.6 | 29.13 | 739.8 | 58.1 | 14.5 | 53 | SE | | | 8 | | 5 | | SSW | 0.055 | 1.4 | Cloudy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.80 | 756.8 | 29.82 | 757.5 | 79.3 | 26.3 | | | | | | | | | | 0.08 | 2. | | L'Abbé Marchesi. |
| Lyons | | | 29.15 | 740.3 | 46.8 | 8.2 | | | | | | | 10 | | | 0 | 0 | | M. Jeys. |
| Marseilles, Observatory | | | 29.23 | 742.5 | 59.9 | 15.5 | 70 | S | | | 3-4 | | 10 | | | 0.004 | 0.10 | Rainy | The Staff. |
| Mont-Louis | 24.02 | 610.2 | 29.33 | 745.0 | 35.2 | 1.8 | 62 | SSW | 44.9 | 24.07 | | | 4 | | SSW | 0.276 | 7.0 | | Mr. Falgueres. |
| Nice | 29.70 | 754.3 | 29.78 | 756.3 | 53.8 | 12.1 | 87 | SW | | | 10 | | 10 | | SW | 0.382 | 9.7 | Raining | Dr. A. Nieper. |
| Perpignan | 28.74 | 730.1 | 29.02 | 737.1 | 53.2 | 11.8 | 76 | ESE | | | 2 | | 10 | | SE | 0.244 | 6.2 | | Marié Davy, Director. |
| Pic du Midi, (Summit,) H. P. | | | 29.07 | 738.4 | 61 0 | 16.1 | 45 | NW | 24.2 | 10.83 | | | 2 | | SW | 0.012 | 0.3 | | Dr. Fines. |
| Pic du Midi, (Plantade,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Saint Maur, (near Paris) | 21.62 | 549.1 | | | 26.4 | — 3.1 | | NW | | | 3 | | 10 | | | 0.508 | 12.9 | Snowy | Gen'l de Nansouty |
| Toulouse, Observatory | 28.86 | 733.1 | 29.03 | 737.3 | 53.6 | 12.0 | 76 | SE | | | 1 | | 10 | | SSE | 0.535 | 13.6 | Raining | E. Renou. |
| Tours | 28.43 | 722.1 | 29.13 | 739.9 | 45.3 | 7.4 | 87 | WSW | | | 6 | | 9 | | | 1.059 | 26.90 | | The Staff. |
| Versailles, (near Paris) | 28.75 | 730.3 | 28.95 | 735.3 | 50.7 | 10.4 | 90 | ESE | | | 1 | | 10 | | E | 0.382 | 9.7 | | C. Marquet. |
| Zi-Ka-Wei, (near Shanghai) | | | 29.05 | 737.8 | 52.9 | 11.6 | 73 | SW | | | 1 | | 10 | | | 0.395 | 10.02 | Raining | Dr. A. Bérigny. |
| | 30.10 | 764.4 | 30.12 | 765.0 | 51.6 | 10.9 | 93 | N | 8.1 | 3.6 | | | 10n | | | 0.209 | 5.3 | Covered | Marc Dechevrens, S. J. |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.18 | 741.2 | 29.35 | 745.5 | 54.0 | 12.2 | 69 | S | | | 2 | | 7 | | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 28.96 | 735.6 | 29.48 | 748.9 | 52.3 | 11.3 | 60 | SSE | | | 3 | | 9 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 28.75 | 730.2 | 29.15 | 740.5 | 57.2 | 14.0 | 50 | E | | | 2 | | 5 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 28.61 | 726.7 | 29.20 | 741.7 | 53.2 | 11.8 | 80 | E | | | 2 | | 10 | E | | 0.022 | 0.55 | | Albert Senz. |
| Cassel | 28.96 | 735.6 | 29.12 | 739.6 | 54.3 | 12.4 | 70 | SE | | | 3 | | 9 | | | 0.20 | 5. | | Dr. H. Möhl. |
| Crefeld | 28.96 | 735.6 | 29.32 | 744.7 | 34.2 | 1.2 | 95 | NE | | | 2 | | 10 | | | 0.31 | 8. | | Director Lose. |
| Emden | 29.28 | 743.8 | 29.32 | 744.7 | 55.4 | 13 | 59 | SSW | | | 1 | | 8 | | | 0.217 | 5.5 | | Physical Society. |
| Frankfort on the Main | 28.87 | 733.3 | 29.23 | 742.4 | 55.4 | 13.0 | 66 | S | | | 3 | | 6 | SW | | 0 | 0 | | Prof. Prestel. |
| Friedrichshafen | 27.75 | 704.8 | 29.14 | 740.1 | 55.4 | 13.0 | 66 | E | | | 4 | | 10 | | | 0.008 | 0.2 | Light rain | M. Wilhelm. |
| Hamburg | 29.23 | 742.4 | 29.30 | 744.2 | 41.2 | 5.1 | 80 | ENE | | | 1 | | 10 | | | 0.017 | 0.43 | | Captain F. Hegemann. |
| Kiel | 29.32 | 744.6 | 29.33 | 745.0 | 36.5 | 2.5 | 91 | E | | | | | | | | 0 | 0 | Cloudy | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.56 | 750.8 | 29.64 | 752.8 | 46.2 | 7.9 | 88 | SE | | | 4 | | 8 | | | 0 | 0 | | Prof. E. Luther |
| Köslin | | | 29.45 | 748.0 | 48.0 | 8.9 | | ESE | | | 3 | | 6 | | | 0.008 | 0.2 | | H. Müller. |
| Leipsic, Observatory | 28.90 | 734.0 | 29.31 | 744.5 | 54.3 | 12.4 | 53 | SE | | | 1 | | 7cs | | | | | | Prof. Bruhns. |
| Memel, Naval School | 29.69 | 754.2 | 29.74 | 755.4 | 41.7 | 5.4 | 49 | E | | | 2 | | 7 | WSW | | 0.012 | 0.3 | | Reinbrecht von Skalweit. |
| Neufahrwasser | 29.58 | 751.4 | 29.60 | 751.8 | 42.6 | 5.9 | 71 | SE | | | 5 | | 10 | | | 0.037 | 0.94 | Covered | A. Lothes. |
| Posen | 29.26 | 743.2 | 29.55 | 750.6 | 49.3 | 9.6 | 63 | NE | | | 1 | | 6 | SW | | 0.058 | 1.47 | | Dr. Magener. |
| Strassburg Obs., (in Alsace | 28.62 | 727.0 | 29.16 | 740.6 | 54.7 | 12.6 | 59 | SE | | | 1 | | 5 | W | | 0.035 | 0.9 | | Dr. Schur. |
| Stuttgart | 28.26 | 717.7 | 29.17 | 740.8 | 58.1 | 14.5 | 48 | S | | | 4 | | 10 | | | 0.041 | 1.03 | Foggy | Prof. Schoder. |
| Treves, (Trier) | 28.58 | 725.8 | 29.08 | 738.7 | 51.4 | 10.8 | 77 | ESE | 11 | 5 | | | 8ck | | S | 0 | 0 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 27.75 | 704.9 | 29.21 | 742.0 | 57.0 | 13.9 | 47 | E | | | 2 | | 10 | | | 0 | 0 | Covered | Dr. Von Bebber |
| Wustrow, Naval School | 29.43 | 747.5 | 29.47 | 748.5 | 40.3 | 4.6 | 76 | | | | | | | | | | | | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Königsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.76 | 755.8 | 30.15 | 765.8 | 62.2 | 16.8 | | SW | | | 2.5 | | | | | | | Clear | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.75 | 755.6 | 29.80 | 756.9 | 82.9 | 28.3 | 71 | WSW | 27.0? | 12.1? | | | 2 | | | 0 | 0 | D. clouds | |
| Deesa | 29.29 | 743.8 | 29.74 | 755.4 | 101.2 | 38.4 | 18 | Calm | | | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.77 | 756.1 | 29.81 | 757.1 | 84.3 | 29.1 | 72 | WNW | 7.0 | 3.1 | | | 4 | | SW | 0 | 0 | D. clouds | |
| Poona | 27.76 | 705.0 | 29.70 | 754.3 | 93.5 | 34.2 | 34 | NNE | | | | | 0 | | | 0 | 0 | Dust-whirl. | |
| Lahore | 29.04 | 737.6 | 29.77 | 756.2 | 86.0 | 30.0 | 33 | NW | 4.4 | 2.0 | | | 7 | | | 0 | 0 | Partly cl'dy | |
| Belgaum | 27.30 | 693.4 | 29.80 | 756.8 | 84.2 | 29.0 | 68 | WSW | 9.0 | 4.0 | | | 1 | | | 0 | 0 | Misty | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.67 | 728.2 | 29.55 | 750.6 | 86.6 | 30.3 | 17 | NW | 9.2 | 4.1 | | | | | | 0 | 0 | Dust-storm. | |
| Agra | 29.18 | 741.2 | 29.73 | 755.1 | 96.1 | 35.6 | 12 | W | | | | | | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.70 | 728.9 | 29.71 | 754.6 | 95.5 | 35.3 | 25 | S | 5.3 | 2.4 | | | 5 | | NE | 0 | 0 | D. clouds | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.32 | 744.7 | 29.68 | 753.9 | 94.9 | 34.9 | 64 | W | 9.3 | 4.2 | | | | | | 0 | 0 | Misty | |
| Allahabad | 29.37 | 746.0 | 29.67 | 753.7 | 95.0 | 35.0 | 26 | NW | 3.8 | 1.7 | | | 0 | | | 0 | 0 | Misty | |
| Patna | 29.45 | 748.0 | 29.62 | 752.4 | 98.2 | 36.8 | 9 | W | 2.6 | 1.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.70 | 703.7 | 29.66 | 753.3 | 91.8 | 33.2 | 14 | WNW | 10.4 | 4.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.64 | 752.9 | 29.72 | 754.9 | 89.1 | 31.7 | 59 | SW | 4.7 | 2.1 | | | 7 | | | 0 | 0 | D. clouds | |
| Calcutta (Alipore) | 29.68 | 753.7 | 29.70 | 754.3 | 85.7 | 29.8 | 73 | SSW | 15.0 | 6.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.27 | 743.4 | 29.66 | 753.2 | 80.8 | 27.1 | 67 | ESE | 3.8 | 1.7 | | | 0 | | | 0.02 | 0.5 | Blue sky | |
| Chittagong | 29.72 | 754.8 | 29.81 | 757.1 | 82.9 | 28.3 | 79 | S | 10.9 | 4.9 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.44 | 747.9 | 29.79 | 756.6 | 66.8 | 19.3 | 95 | NE | 4.6 | 2.1 | | | 10 | W | W | 0.80 | 20.3 | Thunder; lightn'g | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.41 | 721.6 | 29.73 | 755.2 | 94.5 | 34.7 | 38 | NW | 5.7 | 2.6 | | | | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.8 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.17 | 740.9 | 29.59 | 751.5 | 45.3 | 7.4 | 94 | SE | 1.3 | 0.6 | ..... | ..... | 10 | ..... | ..... | 2.704 | 68.7 | ..... | Prof. Giovanni Codig. |
| Padua | 29.42 | 747.3 | 29.53 | 750.1 | 47.3 | 8.5 | 97 | NE | 7.4 | 3.3 | ..... | ..... | 10 | ..... | ..... | 0.720 | 18.3 | ..... | Prof. Bott. Lorenzioni |
| Vicenza | 29.36 | 745.8 | 29.56 | 750.8 | 44.6 | 7.0 | 93 | N | 0.7 | 0.3 | ..... | ..... | 10 | ..... | ..... | 1.445 | 36.7 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.25 | 717.6 | 29.59 | 751.5 | 37.4 | 3.0 | 89 | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 1.322 | 33.6 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.06 | 738.0 | 29.58 | 751.3 | 35.6 | 2.1 | ..... | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.559 | 14.2 | ..... | Prof. Schiaparelli. |
| Moncalieri | 28.61 | 726.6 | 29.52 | 749.9 | 38.3 | 3.5 | 85 | ENE | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0.350 | 8.9 | ..... | Prof. P. F. Denza. |
| Mondovi | 27.58 | 700.5 | 29.51 | 749.6 | 36.7 | 2.6 | 86 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 1.024 | 26.0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.21 | 741.9 | 29.43 | 747.6 | 49.5 | 9.9 | 75 | ENE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.209 | 7.6 | ..... | Prof. L. Vassallo. |
| Genoa | 29.27 | 743.5 | 29.45 | 747.9 | 45.7 | 7.6 | 83 | NE | 9.4 | 4.2 | ..... | ..... | 10 | S | ..... | 3.385 | 86 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.22 | 742.2 | 29.54 | 750.4 | 38.1 | 3.4 | 93 | NW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.677 | 17.2 | ..... | Prof. P. Pigorini. |
| Florence | 29.23 | 742.5 | 29.49 | 749.1 | 55.4 | 13.0 | 89 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.307 | 7.8 | ..... | Cav. F. Meucci. |
| Leghorn | 29.30 | 746.6 | 29.48 | 748.8 | 57.0 | 13.9 | 84 | S | 11.2 | 5.0 | ..... | ..... | 10 | SW | ..... | 0.886 | 22.5 | ..... | Prof. P. Monte. |
| Pesaro | 29.49 | 749.1 | 29.54 | 750.4 | 52.3 | 11.3 | 96 | E | 0.3 | 2.8 | ..... | ..... | 10 | SW | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.01 | 711.4 | 29.58 | 751.2 | 54 3 | 12.4 | 70 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.063 | 1 6 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.44 | 747.7 | 29.55 | 750.6 | 56.5 | 13.6 | 92 | ESE | ..... | ..... | 6 | ..... | 9 | S | ..... | 0.311 | 7.9 | ..... | Avv. P. Ponticelli. |
| Rome | 29.46 | 748.3 | 29.64 | 752.8 | 58.5 | 14.7 | 78 | S | 21.7 | 9.7 | ..... | ..... | 10 | ..... | ..... | 0.630 | 16.0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U. | 29.54 | 750.4 | 29.74 | 755.5 | 63.0 | 17.2 | 43 | SSE | ..... | ..... | 6 | ..... | 10 | SSW | ..... | 0.039 | 1.0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 59.0 | 15.0 | 71 | SSE | 31.1 | 13.9 | ..... | ..... | 8 | S | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.37 | 746.1 | 29.57 | 751.0 | 61.2 | 16.2 | 79 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 28.94 | 735.0 | 29.83 | 757.7 | 64 8 | 18.2 | 75 | NW | 20.6 | 9.2 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.37 | 745.9 | 29.62 | 752.4 | 75.6 | 24.2 | 29 | S | 16.1 | 7.2 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.76 | 756.0 | 29.84 | 757.9 | 65.9 | 18.5 | 65 | SSE | ..... | ..... | 2 | ..... | 10 | SW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.22 | 742.3 | 29.78 | 756.4 | 58.6 | 14.8 | 70 | WSW | 4.9 | 2.2 | ..... | ..... | 10 | W | ..... | 0.079 | 2.0 | ..... | Prof. F. Brioschi |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 29.95 | 760.7 | 30.02 | 762.5 | 45.9 | 7.7 | 98 | N | 4.4 | 2.0 | ..... | ..... | 10n | ..... | ..... | 0.850 | 21.59 | Raining | The Observatory. |
| Tokei (Yeddo) University | 29.93 | 760.2 | 30.03 | 762.7 | 48 | 8.9 | 92 | N | 1 | 0.4 | ..... | ..... | 10n | ..... | ..... | 0.20 | 5.1 | Rainy | Prof. P. V. Veeder. |

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 64.4 | 18.0 | 20 | N | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Dry fog | L. Castillo, A. E. |
| Guadalajara | 25.00 | 635.0 | 30.09 | 764.1 | 39.2 | 4.0 | 46 | S | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Blue sky | Prof. L. Perez. |
| Guanajuato | 23.63 | 600.4 | 29.89 | 759.2 | 57.9 | 14.4 | 40 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 55.0 | 12.8 | 43 | N | 5.1 | 2.3 | ..... | 1cs | 0 | W | ..... | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico | 23.07 | 585.9 | 30.18 | 766.5 | 48.0 | 8.9 | 53 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 51.4 | 10.8 | 48 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | M. V. de Leon, M. E. |
| Puebla | 23.29 | 591.7 | 30.03 | 762.7 | 46.0 | 7.8 | 47 | ENE | 3.4 | 1.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Dry fog | Prof. B. Gonzales. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 29.76 | 755.6 | 29.76 | 755.9 | 71.6 | 22 0 | 84 | S | 5.1 | 2.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 29.78 | 756.5 | 29.81 | 757.2 | 72 57 | 22.1 | 82 | NW | ..... | ..... | ..... | 0 | 0s | ..... | ..... | 0 | 0 | Hazy | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 53.6 | 12.0 | 43 | SW | 0.9 | 0.4 | ..... | 0c | ..... | ..... | ..... | 0 | 0 | ¼ cloudy | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Spina. [M. M. D. D. |
| Morelia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Tena, F. L. Param. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,382.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.11 | 739.3 | 29.11 | 739.3 | 38.8 | 3.8 | ..... | NE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.602 | 16.3 | ..... | |
| Groningen | 29.19 | 741.3 | 29.24 | 742.7 | 34.3 | 1.3 | ..... | NE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.276 | 7.0 | ..... | |
| Helder | 29.20 | 741.6 | 29.20 | 741.6 | 37.2 | 2.9 | ..... | NNE | ..... | ..... | 6 | ..... | ..... | ..... | ..... | 0.685 | 17.4 | ..... | |
| Hellevoetsluis | 29.12 | 739.7 | 29.12 | 739.7 | 36.6 | 2.0 | 100 | NE | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.14 | 739.5 | 29.16 | 740.7 | 35.8 | 2.1 | 90 | NNE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.467 | 11.6 | Duil | H. v d Brink. |

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Reduced to sea-level. Inches. | Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.47 | 748.6 | 29.53 | 750.0 | 38.1 | 3.4 | 44 | NNW | 4.5 | 2.0 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | ..... |
| Bröno | 29.60 | 751.9 | 29.64 | 752.9 | 28.8 | — 1.8 | 40 | NE | 9 | 4 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | ..... |
| Christiania | 29.50 | 749.4 | 29.66 | 753.3 | 31.1 | — 0.5 | 70 | ENE | 4 | 2 | ..... | ..... | 10 | ..... | ..... | 0.012 | 0.3 | ..... | ..... |
| Tromsö | 29.77 | 756.2 | 29.82 | 757.3 | 29.3 | — 1.5 | 51 | E | 4 | 2 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | ..... |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.06 | 763.5 | 30.25 | 768.4 | 55.2 | 12.9 | 75 | ENE | 7.4 | 3.3 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | ..... |
| Campo Major | 28.53 | 724.6 | 29.58 | 751.3 | 47.7 | 8.7 | 81 | WSW | 19.2 | 8.6 | ..... | ..... | 9 | WSW | ..... | 0.287 | 7.3 | Light rain | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 29.98 | 761.5 | 30.07 | 763.7 | 66.9 | 19.4 | 46 | SW | 3.8 | 1.7 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.23 | 742.5 | 29.60 | 751.8 | 52.7 | 11.5 | 81 | WNW | 22.4 | 10.0 | ..... | ..... | 8 | ..... | ..... | 0.469 | 11.9 | Raining | The Staff. |
| Ponta Delgada, (Azores) | 30.16 | 766.1 | 30.25 | 768.3 | 60.8 | 16.0 | 52 | ENE | 4.2 | 1.9 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | ..... |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

| Naval Series. Vessels. | Sea or swell. Height scale 0–9. | Sea or swell. Direction from— | | |
|---|---|---|---|---|
| Bartholomew Dias | | | | R. A. T. Pinha, Com'd. |
| D. Fernando | | | | A. M. de Sande, Com'd. |
| India | | | | A. D. Pedroso, Com'd. |
| Mindello, | | | | |
| Mozambique, Mozambique | 2 | S | Blue sky | J. F. R. R. Bastos, Com'd't. |
| Quanza | | | | A. J. de Mattos, Com'd't. |
| Sado, | | | | |
| Porto Praya, Cape Verde Islands | 3 | NNE | D. clouds. | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, | | | | |
| St. Paul de Loanda, Lower Guinea | 1 | NW | Blue sky | F. Texeira da Silva, Com'd't. |
| Tejo | | | | F. J. Ferreina, dos Amas, Com' |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreina, dos Amas, Com' |

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.21 | 741.8 | 29.63 | 752.6 | 47.5 | 8.6 | 61 | S | 16 | 7 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | Solar corona. | Astronomical Obs. |
| Wilna | 29.39 | 746.6 | 29.82 | 757.4 | 42.1 | 5.6 | 60 | S | 2 | 1 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Light clouds | Astronomical Obs. |
| Dorpat | 29.59 | 751.5 | 29.84 | 757.8 | 37.8 | 3.2 | 71 | S | 7 | 3 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.87 | 758.6 | 29.88 | 759.0 | 30.6 | — 0.8 | 73 | SSW | 16 | 7 | ..... | ..... | 4k | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.28 | 743.6 | 29.61 | 752.1 | 24.4 | — 4.2 | 100 | S | 34 | 15 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Ch. Forsten. |
| Kieff | 29.40 | 746.7 | 30.07 | 763.6 | 33.6 | 0.9 | 94 | S | 7 | 3 | ..... | ..... | 1c | ..... | ..... | ..... | ..... | Light clouds | Physical Cabinet. |
| Nikolaiev | 30.08 | 764.0 | 30.15 | 765.8 | 33.1 | 0.6 | 52 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.11 | 764.7 | 30.13 | 765.2 | 39.6 | 4.2 | 82 | WNW | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.55 | 750.5 | 30.11 | 764.9 | 36.3 | 2.4 | 89 | S | 7 | 3 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.71 | 754.5 | 29.91 | 759.6 | 60.1 | 15.6 | 42 | ESE | 9 | 4 | ..... | ..... | 4ck | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 30.14 | 765.5 | 30.16 | 766.0 | 28.4 | — 2.0 | 84 | E | 22 | 10 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.36 | 720.3 | 29.80 | 756.9 | 42.4 | 5.8 | 51 | NW | 45 | 20 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 29.50 | 759.4 | 29.82 | 757.3 | 51.6 | 10.9 | 57 | NE | 13 | 6 | ..... | ..... | 10n | ..... | ..... | Blank | Blank | ..... | Sebastianof. |
| Kasan | 30.09 | 764.3 | 30.37 | 771.4 | 40.1 | 4.5 | 65 | Calm | 0 | 0 | ..... | ..... | 1s | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 29.61 | 752.2 | 30.61 | 777.5 | 33.4 | 0.8 | 47 | E | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.30 | 744.3 | 29.53 | 750.0 | 71.8 | 22.1 | 77 | E | 16 | 7 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.28 | 718.3 | 29.95 | 760.6 | 66.7 | 19.3 | 30 | NW | 7 | 3 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.76 | 755.9 | 30.31 | 769.8 | 33.8 | 1.0 | 83 | N | 13 | 6 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs |
| Yeniseisk | 29.83 | 757.7 | 30.17 | 766.4 | 23.5 | — 4.7 | 62 | NNW | 13 | 6 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Krotkowo* | 29.78 | 756.5 | 30.26 | 768.6 | 46.0 | 7.8 | 77 | NE | 13 | 6 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Peking, (China) | 30.18 | 766.5 | 30.32 | 770.1 | 50.9 | 10.5 | 7 | NW | 16 | 7 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.98 | 710.6 | 30.17 | 766.3 | 19.4 | — 7.0 | 70 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 6.4 | —14.2 | 66 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | ..... | ..... | 29.08 | 738.7 | 58.1 | 14.5 | 42 | SW | 7.8 | 3.47 | ..... | 10 | 3 | ..... | ..... | 0 | 0 | Covered | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.17 | 740.9 | 29.23 | 742.4 | 52.9 | 11.6 | 78 | NW | 4.2 | 1.86 | ..... | 2 | 5 | SW | ..... | 0.181 | 4.6 | Hailing | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.29 | 667.8 | ..... | ..... | 41.0 | 5.0 | 84 | SW | 15.9 | 7.13 | ..... | ..... | 10 | ..... | ..... | 0.315 | 8.0 | Raining | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.12 | 688.9 | 29.39 | 746.6 | 38.8 | 3.8 | 91 | SW | 33.6 | 15.00 | ..... | ..... | 10 | ..... | ..... | 0.701 | 17.8 | Squally | The Staff. |
| Murcia, Met. Obs'y | 29.26 | 743.2 | 29.41 | 747.0 | 68.2 | 20.1 | 34 | W | 7.3 | 3.28 | ..... | 3 | 4 | E | ..... | 0 | 0 | Cloudy | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.37 | 720.5 | 29.27 | 743.4 | 41.9 | 5.5 | 85 | NW | 12.0 | 5.34 | ..... | ..... | 10 | ..... | ..... | 0.635 | 13.6 | Raining | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.89 | 759.1 | 29.95 | 760.8 | 77.7 | 25.4 | 88 | SSE | 7.2 | 3.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J. |
| San Fernando, Naval Obs'y | 29.66 | 753.3 | 29.76 | 755.8 | 58.8 | 14.9 | 50 | WSW | 28.1 | 12.6 | ..... | 2 | 6 | W | W | 0.254 | 6.5 | ..... | Capt. C. Pulazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.91 | 759.8 | 30.00 | 762.1 | 79.9 | 26.6 | 85 | E | 6.9 | 3.05 | ..... | 4kn | 2k | E | E | 0.108 | 2.75 | Cloudy | Leonardo de Tejeda, Chief of Engineers. |

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft. The barometer readings at Barcelona are published as given.

## SWEDISH SERIES.



Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.65 | 753.2 | 29.69 | 754.2 | 20.1 | — 6.6 | ..... | NE | ..... | ..... | 6 | ..... | 6 | ..... | ..... | 0.157 | 4.0 | ..... | |
| Umea | 29.62 | 752.4 | 29.67 | 753.7 | 20.1 | — 6.6 | 89 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.047 | 1.2 | Snowing..... | |
| Hernosand | 29.87 | 758.8 | 29.93 | 760.1 | 18.7 | — 7.4 | 93 | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.47 | 748.5 | 29.65 | 753.0 | 32.0 | 0.0 | 67 | WSW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0.047 | 1.2 | ..... | |
| Wisby | 29.65 | 753.1 | 29.71 | 754.6 | 35.6 | 2.0 | 64 | NW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.57 | 751.1 | 29.65 | 753.0 | 31.8 | — 0.1 | 65 | SW | 8.1 | 3.6 | ..... | ..... | 5 | ..... | WSW | 0.044 | 1.12 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 27.71 | 703.9 | 29.14 | 740.2 | 53.4 | 11.9 | 46 | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0.008 | 0.2 | Cloudy..... | The Observatory. |
| Zurich | 27.55 | 699.7 | 29.16 | 740.7 | 61.5 | 16.4 | 35 | SE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0.142 | 3.6 | Föhn..... | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
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Note.—At Geneva the corresponding departures from the normal values are: Barometer, —20.4 mm.; Thermometer, +2.4 cent.; Relative Humidity, —13 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.15 | 765.9 | 53.6 | 12.0 | 41 | SSW | 6 | 2.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.98 | 761.6 | 58.1 | 14.5 | ..... | S | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy..... | B. Stefanides. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria.) Lee Obs'y | 30.01 | 762.2 | 30.12 | 765.1 | 59.5 | 15.3 | 53 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0.15 | 3.8 | Blue sky..... | Imperial Observatory. Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.82 | 757.4 | 29.89 | 759.2 | 31.7 | — 0.2 | 88 | NE | 2 | 0.9 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Dull | Hon. J. Ferguson. |
| Brockville, Ontario | 29.74 | 755.4 | 30.06 | 763.5 | 32 | 0.0 | ..... | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0.57 | 14.5 | Clear | W. R. Bigg. |
| *Chatham, N B | 29.78 | 756.4 | 29.84 | 757.9 | 32 | 0.0 | 93 | NE | 3 | 1.3 | ..... | ..... | 10n | ..... | Calm | 0.27 | 6.9 | Light snow. | G. A. Blair. |
| Charlottetown, P. E. Island | 29.74 | 755.4 | 29.78 | 756.4 | 34 | 1.1 | 98 | NE | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.500 | 12.70 | Light rain... | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.78 | 756.4 | 29.98 | 761.5 | 31.0 | — 0.6 | 75 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.26 | 6.6 | Bright | James Smith, M. A. |
| Dalhousie, N. B | 29.88 | 758.9 | 29.92 | 760 0 | 33.1 | 0.6 | 91 | N | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.03 | 0.8 | Gloomy | H. A. Johnson. |
| Esquimault, B. C | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.01 | 0.3 | ..... | W. H. Bevis. |
| *Father Point, Quebec | 29.89 | 759.2 | 29.91 | 759.7 | 30 | — 1.1 | 93 | E | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | 0.10 | 2.5 | Light snow.. | J. McWilliams. |
| Fredericton, N. B | 29.76 | 755.9 | 29.83 | 757.7 | 33.8 | 1.0 | 88 | N | 9 | 4.0 | ..... | ..... | 10n | ..... | NE | 0.575 | 14.61 | Light rain... | Prof. Harrison. |
| *Fort Garry Manitoba | 29.29 | 744.0 | 30.18 | 766 6 | 18 | — 7.8 | 95 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.98 | 736.1 | 30.14 | 765.5 | 31 | — 0.6 | 100 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0.40 | 10.2 | Clear | James Grant. |
| *Halifax, N. S | 29.59 | 751.6 | 29.73 | 755.1 | 44 | 6.7 | 97 | SW | 8 | 3.6 | ..... | ..... | 10n | ..... | ..... | 0.987 | 25.07 | Light rain... | F. Allison, M. A. |
| Hamilton, Ontario | 29.74 | 755.4 | 30.12 | 765.0 | 33.7 | 0.9 | 74 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Geo. Dickson, M. A. |
| Heart's Content, N. F | 30.02 | 762.5 | 30.05 | 763.3 | 34 | 1.1 | 100 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0.04 | 1.0 | Overcast | E. Weedon. |
| *Kingston, Ontario | 29.69 | 754.1 | 30.04 | 763.0 | 34 | 1.1 | 60 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.52 | 13.2 | Clear | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.76 | 755.9 | 29.80 | 756.9 | 32 | 0.0 | ..... | S | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0.46 | 11.7 | Foggy | C. H. Rigby. |
| *Montreal, Quebec | 29.75 | 755.6 | 29.96 | 761.0 | 32 | 0.0 | 69 | N | 12 | 5.4 | ..... | 8k | 2s | N | ..... | 0.48 | 12.2 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.43 | 747.5 | 30.16 | 766.1 | 29 | — 1.7 | 66 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Rev. R. Mosley. |
| Peterboro, Ontario | 29.38 | 746.2 | 30.17 | 766.3 | 31 7 | — 0.2 | 65 | NW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0.80 | 20.3 | Bright | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.38 | 746.2 | 30.11 | 764.8 | 31 | — 0.6 | 79 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.12 | 3.0 | Clear | H. Morgan. |
| Port Hastings, N. S | 29.74 | 755.4 | 29.79 | 756.7 | 44.5 | 6.9 | ..... | NW | 2 | 0.9 | ..... | ..... | ..... | ..... | ..... | 0.78 | 19.8 | Cloudy | Peter Grant. |
| Port Stanley, Ontario | 29.45 | 748.0 | 30.12 | 765.0 | 30 | — 1.1 | 100 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0.38 | 9.7 | Clear | M. Payne. |
| *Quebec, Quebec | 29.58 | 751.3 | 29.92 | 760.0 | 31 | — 0.6 | 95 | NE | 1 | 0.4 | ..... | ..... | 10n | ..... | ..... | 0.30 | 7.6 | Cloudy | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.63 | 752.6 | 30.11 | 764.8 | 31 | — 0.6 | 58 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | W. H. McIntyre. |
| St. Andrews, N. B | 29.68 | 753.9 | 29.73 | 755.1 | 35 | 1.7 | 85 | NE | 3 | 1.3 | ..... | ..... | 10n | ..... | ..... | 0.90 | 22.9 | Light rain... | Dr. Gove. |
| St. John, N B | 29.55 | 750.6 | 29.72 | 754.9 | 35 | 1.7 | 90 | N | 5 | 2.2 | ..... | ..... | 10n | ..... | ..... | 1.070 | 27.18 | Heavy rain.. | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.39 | 746.5 | 30.14 | 765.5 | 34 | 1.1 | 75 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | R. Stewart. |
| Stayner, Ontario | 29.34 | 745.2 | 30.15 | 765.8 | 32 | 0.0 | 66 | NW | 1 | 0.4 | ..... | 2c | 0 | NW | ..... | Inap. | Inap. | Fair | R. J. Cole. |
| Stratford, Ontario | 28.77 | 730.7 | 30.11 | 764.8 | 29.3 | — 1.5 | 84 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0.431 | 10.95 | Clear | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.78 | 756.4 | 29.81 | 757.2 | 38 | 3.3 | 99 | S | 1 | 0.4 | ..... | ..... | 10n | ..... | ..... | 0.50 | 12.7 | Light rain... | T. C. Hill. |
| *Toronto, Ontario | 29.73 | 755.1 | 30.13 | 765.3 | 33 | 0.6 | 65 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0.52 | 13.2 | Clear | Magnetic Observatory. |
| Windsor, N. S | 29.61 | 752.1 | 29.71 | 754.6 | 41.5 | 5.3 | 96 | N | 2 | 0.9 | ..... | ..... | 10n | ..... | ..... | 0.61 | 15.5 | Raining | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 34.0 | 1.1 | 100 | S | ..... | ..... | ..... | 5ks | 5s; n | ..... | ..... | 0.10 | 2.5 | Cloudy | John Delany. |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.62 | 752.3 | 29.85 | 758.2 | 37 | 2.8 | 81 | N | 20 | 8.9 | ..... | 5k | 5s | N | N | 0.09 | 2.3 | Cloudy | |
| Alpena, Michigan | 29.49 | 749.0 | 30.17 | 766.3 | 30 | — 1.1 | 78 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Atlantic City, New Jersey | 29.67 | 753.6 | 29.69 | 754.1 | 45 | 7.2 | 92 | NW | 19 | 8.5 | ..... | ..... | 10ks | ..... | NW | 0.53 | 13.5 | Threatening | |
| Augusta, Georgia | 29.72 | 754.9 | 29.90 | 759.4 | 59 | 15.0 | 76 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Baltimore, Maryland | 29.75 | 755.6 | 29.80 | 756.9 | 46 | 7.8 | 69 | NW | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | |
| Barnegat, New Jersey | 29.64 | 752.8 | 29.66 | 753.4 | 46 | 7.8 | 85 | N | 36 | 16.1 | ..... | ..... | 10s | ..... | N | 0.06 | 1.5 | Cloudy | |
| Bismarck, Dakota | 28.18 | 715.8 | 30.03 | 762.7 | 32 | 0.0 | 79 | SE | 12 | 5.4 | ..... | 0 | 8s | ..... | SE | 0 | 0 | Cloudy | |
| Boise City, Idaho | 26.92 | 683.8 | 29.80 | 756.9 | 41 | 5.0 | 83 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | W | 0.08 | 2.0 | Cloudy | |
| Boston, Massachusetts | 29.59 | 751.6 | 29.74 | 755.4 | 38.5 | 3.6 | 91 | N | 9 | 4.0 | ..... | ..... | 10n;fg | ..... | N | 0.61 | 15.5 | Light rain | |
| Brackettville, Texas | 28.58 | 725.9 | 29.59 | 751.6 | 58 | 14.4 | 81 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 29.12 | 739.6 | 30.17 | 766.3 | 26 | — 3.3 | 88 | E | 6 | 2.7 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Brownsville, Texas | 29.81 | 752.8 | 29.71 | 754.6 | 71 | 21.7 | 85 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Buffalo, New York | 29.34 | 745.2 | 30.07 | 763.8 | 33 | 0.6 | 70 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.19 | 4.8 | Clear | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 58 | 14.4 | 32 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.67 | 753.6 | 29.93 | 760.2 | 34 | 1.1 | 79 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | N | 0.36 | 9.1 | Cloudy | |
| Cairo, Illinois | 29.70 | 754.4 | 30.10 | 764.5 | 44 | 6.7 | 76 | NE | 11 | 4.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Camp Grant, Arizona | 25.09 | 637.3 | 29.89 | 759.2 | 33 | 0.6 | 80 | N | ..... | ..... | 1 | ..... | 10n | ..... | NW | 0.05 | 1.3 | Cloudy | |
| Camp Verde, Arizona | 26.70 | 678.2 | 30.18 | 766.6 | 39 | 3.9 | 82 | N | ..... | ..... | 1 | ..... | Fog | ..... | ..... | 1.01 | 25.7 | Foggy | |
| Campo, California | 27.36 | 694.9 | 29.93 | 760.2 | 41 | 5.0 | 91 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.40 | 10.2 | Cloudy | |
| Cape Hatteras, N. Carolina | 29.61 | 751.1 | 29.70 | 754.4 | 59 | 15.0 | 94 | NW | 12 | 5.4 | ..... | 0 | Haze | ..... | ..... | 1.60 | 40.6 | Clear | |
| Cape Henry, Virginia | 29.64 | 752.8 | 29.66 | 753.4 | 55 | 12.8 | 87 | NW | 27 | 12.1 | ..... | ..... | 10s | ..... | NW | 1.59 | 40.4 | Cloudy | |
| Cape Lookout, N. Carolina | 29.73 | 755.1 | 29.75 | 755.6 | 59 | 15.0 | 88 | NW | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0.58 | 14.7 | Clear | |
| Cape May, New Jersey | 29.68 | 753.9 | 29.71 | 754.6 | 45 | 7.2 | 92 | N | 34 | 15.2 | ..... | ..... | 10s | ..... | NW | 0.35 | 8.9 | Cloudy | |
| Charleston, South Carolina | 29.83 | 757.7 | 29.90 | 759.4 | 62 | 16.7 | 67 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0.25 | 6.3 | Clear | |
| Cheyenne, Wyoming | 23.75 | 603.2 | 29.69 | 754.1 | 23 | — 5.0 | 100 | S | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.01 | 0.3 | Sleeting | |
| Chicago, Illinois | 29.47 | 748.5 | 30.19 | 766.8 | 38 | 3.3 | 54 | NE | 7 | 3.1 | ..... | 1cs | 0 | Calm | ..... | 0.01 | 0.3 | Clear | |
| Cincinnati, Ohio | 29.40 | 746.7 | 30.06 | 763.5 | 36 | 2.2 | 71 | NE | 8 | 3.6 | ..... | 2k | 0 | NE | ..... | 0.36 | 9.1 | Clear | |
| Cleveland, Ohio | 29.37 | 746.0 | 30.12 | 765.0 | 35 | 1.7 | 70 | NE | 10 | 4.5 | ..... | 1c | 0 | Calm | ..... | 0.10 | 2.5 | Clear | |
| Concho, Texas | 27.88 | 708.1 | 29.56 | 750.8 | 48 | 8.9 | 42 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.32 | 744.7 | 29.78 | 756.4 | 54 | 12.2 | 80 | E | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Davenport, Iowa | 29.52 | 749.8 | 30.18 | 766.6 | 37 | 2.8 | 63 | NE | 7 | 3.1 | ..... | 4cs | 0 | W | ..... | 0 | 0 | Fair | |
| Deadwood, Dakota | 25.16 | 639.0 | ..... | ..... | 28 | — 2.2 | 88 | SE | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Denison, Texas | 29.03 | 737.3 | 29.83 | 757.7 | 50 | 10.0 | 86 | NE | 5 | 2.2 | ..... | 8k | 0 | SW | ..... | 0 | 0 | Fair | |
| Denver, Colorado | 24.48 | 621.8 | 29.70 | 754.4 | 31 | — 0.6 | 89 | N | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | Inap | Inap. | Light snow | |
| Detroit, Michigan | 29.43 | 747.5 | 30.14 | 765.5 | 31 | — 0.6 | 69 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0.09 | 2.3 | Clear | |
| Dodge City, Kansas | 27.19 | 690.6 | 29.48 | 748.8 | 42 | 5.6 | 91 | SE | 16 | 7.2 | ..... | ..... | 10n | ..... | SE | 0.05 | 1.3 | Light rain | |
| Dubuque, Iowa | 29.47 | 748.5 | 30.20 | 767.1 | 35 | 1.7 | 70 | E | 1 | 0.4 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Duluth, Minnesota | 29.50 | 749.3 | 30.22 | 767.6 | 31 | — 0.6 | 58 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eagle Pass, Texas | 28.80 | 731.5 | 29.49 | 749.0 | 60 | 15.6 | 87 | SE | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 29.66 | 753.4 | 29.73 | 755.1 | 36 | 2.2 | 90 | NW | 11 | 4.9 | ..... | ..... | 10n | ..... | N | 1.36 | 34.5 | Light rain | |
| Erie, Pennsylvania | 29.33 | 745.0 | 30.07 | 763.8 | 35 | 1.7 | 80 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.11 | 2.8 | Clear | |
| Escanaba, Michigan | 29.54 | 750.3 | 30.24 | 768.1 | 25 | — 3.9 | 62 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Florence, Arizona | 28.30 | 718.8 | 29.90 | 759.4 | 49 | 9.4 | 78 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | W | 0.53 | 13.5 | Cloudy | |
| Fort Bayard, New Mexico | 23.97 | 608.8 | 29.97 | 761.2 | 30 | — 1.1 | 89 | NW | 1 | 0.4 | ..... | 0 | 8s | ..... | ..... | 0.15 | 3.8 | Cloudy | |
| Fort Craig, New Mexico | 25.33 | 643.4 | ..... | ..... | 41 | 5.0 | 41 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Fort Gibson, Indian Ter | 29.35 | 745.5 | 29.88 | 758.9 | 50 | 10.0 | 79 | E | 7 | 3.1 | ..... | 5ck | 2s | S | E | 0 | 0 | Fair | |
| Fort Griffin, Texas | 28.54 | 724.9 | 29.80 | 756.9 | 50 | 10.0 | 72 | N | 10 | 4.5 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Fort St. Michael, Alaska | 29.71 | 754.6 | 29.75 | 755.6 | 8 | —13.3 | 100 | E | 38 | 17.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Sill, Indian Territory | 28.61 | 726.7 | 29.70 | 754.4 | 49 | 9.4 | 93 | NE | 6 | 2.7 | ..... | ..... | 10n | ..... | NW | 0.03 | 0.8 | Light rain | |
| Galveston, Texas | 29.72 | 754.9 | 29.76 | 755.9 | 68 | 20.0 | 84 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.52 | 749.8 | 30.30 | 767.1 | 32 | 0.0 | 69 | E | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianapolis, Indiana | 29.30 | 744.2 | 30.11 | 764.8 | 34 | 1.1 | 79 | NE | 5 | 2.2 | ..... | 2cs | 0 | Calm | ..... | 0.01 | 0.3 | Clear | |
| Indianola, Texas | 29.71 | 754.6 | 29.74 | 755.4 | 69 | 20.6 | 90 | S | 14 | 6.3 | ..... | 10k | 0 | S | ..... | 0 | 0 | Cloudy | |
| Jacksboro, Texas | 28.62 | 726.9 | 29.74 | 755.4 | 48 | 8.9 | 85 | SE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 29.90 | 759.4 | 29.93 | 760.2 | 66 | 18.9 | 69 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 1.07 | 27.2 | Clear | |
| Keokuk, Iowa | 29.47 | 748.5 | 30.11 | 764.8 | 36 | 2.2 | 71 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Key West, Florida | 29.90 | 759.4 | 29.94 | 760.5 | 77 | 25.0 | 86 | SW | 8 | 3.6 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Hazy | |
| Kittyhawk, North Carolina | 29.68 | 753.9 | 29.71 | 754.6 | 59 | 15.0 | 94 | NW | 18 | 8.0 | ..... | 0 | 8s | ..... | N | 0.86 | 21.8 | Fair | |
| Knoxville, Tennessee | 28.99 | 736.3 | 30.01 | 762.2 | 45 | 7.2 | 76 | N | 6 | 2.7 | ..... | ..... | 10ks | ..... | N | 0.52 | 13.2 | Cloudy | |
| La Crosse, Wisconsin | 29.41 | 747.0 | 30.18 | 766.6 | 36 | 2.2 | 39 | N | 4 | 1.8 | ..... | 8ck | 0 | N | ..... | 0 | 0 | Fair | |
| La Mesilla, New Mexico | 25.95 | 659.1 | 30.10 | 764.5 | 33 | 0.6 | 69 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.31 | 744.5 | 29.64 | 752.8 | 67 | 19.4 | 84 | NE | 6 | 2.7 | ..... | 10k | 0 | W | ..... | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 29.15 | 740.4 | 30.01 | 762.2 | 40 | 4.4 | 82 | E | 8 | 3.6 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Los Angeles, California | 29.65 | 753.1 | 29.99 | 761.7 | 45 | 7.2 | 80 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.07 | 17.0 | Clear | |
| Louisville, Kentucky | 29.50 | 749.3 | 30.08 | 764.0 | 38 | 3.3 | 63 | N | 8 | 3.6 | ..... | 5ck | 1s | NE | Calm | 0.10 | 2.5 | Fair | |
| Lynchburg, Virginia | 29.14 | 740.1 | 29.81 | 757.2 | 58 | 14.4 | 53 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0.17 | 4.3 | Clear | |
| Marquette, Michigan | 29.44 | 747.8 | 30.18 | 766.6 | 31 | — 0.6 | 58 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mason, Texas | 28.11 | 714.0 | 29.86 | 758.4 | 49 | 9.4 | 93 | Calm | 0 | 0 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.73 | 755.1 | 30.05 | 763.3 | 45 | 7.2 | 75 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Milwaukee, Wisconsin | 29.44 | 747.8 | 30.20 | 767.1 | 36 | 2.2 | 71 | NE | 7 | 3.1 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair | |
| Mobile, Alabama | 29.90 | 759.4 | 29.94 | 760.5 | 60 | 15.6 | 82 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Montgomery, Alabama | 29.74 | 755.4 | 29.98 | 761.5 | 56 | 13.3 | 74 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Morgantown, West Virginia | 28.93 | 734.8 | 30.01 | 762.2 | 38 | 3.3 | 72 | NW | 12 | 5.4 | ..... | ..... | 10s | ..... | NW | 0.28 | 7.1 | Cloudy | |
| Mt. Washington, N. H. | 23.48 | 596.4 | 29.84 | 757.9 | 28 | — 2.2 | 88 | NW | 21 | 9.4 | ..... | 8c | 10s | W | NW | 0.78 | 19.8 | Cloudy | |
| Nashville, Tennessee | 29.50 | 749.3 | 30.04 | 763.0 | 44 | 6.7 | 76 | N | 7 | 3.1 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| New Haven, Connecticut | 29.60 | 751.8 | 29.72 | 754.9 | 43 | 6.1 | 92 | N | 20 | 8.9 | ..... | ..... | 10n | ..... | NE | 0.35 | 8.9 | Light rain | |
| New London, Connecticut | 29.66 | 753.4 | 29.71 | 754.6 | 42 | 5.6 | 100 | N | 8 | 3.6 | ..... | ..... | 10n | ..... | N | 0.16 | 4.1 | Light rain | |
| New Orleans, Louisiana | 29.81 | 757.2 | 29.87 | 758.7 | 65 | 18.3 | 73 | E | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Newport, Rhode Island | 29.64 | 752.8 | 29.69 | 754.1 | 40 | 4.4 | 100 | N | 11 | 4.9 | ..... | ..... | 10n | ..... | N | 0.71 | 18.0 | Light rain | |
| New York, New York | 29.55 | 750.6 | 29.73 | 755.1 | 43 | 6.1 | 83 | N | 28 | 12.5 | ..... | ..... | 10n | ..... | N | 0.04 | 1.0 | Light rain | |
| Norfolk, Virginia | 29.67 | 753.6 | 29.73 | 755.1 | 58 | 14.4 | 82 | N | 17 | 7.6 | ..... | ..... | 10s | ..... | Calm | 0.55 | 14.0 | Cloudy | |
| North Platte, Nebraska | 27.02 | 686.3 | 29.66 | 753.4 | 30 | — 1.1 | 89 | E | 16 | 7.2 | ..... | ..... | 10n | ..... | Calm | 0.04 | 1.0 | Light snow | |
| Olympia, Washington Ter. | 29.71 | 754.6 | 29.75 | 755.6 | 47 | 8.3 | 85 | S | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.47 | 11.9 | Light rain | |
| Omaha, Nebraska | 28.92 | 734.6 | 30.04 | 763.0 | 37 | 2.8 | 71 | E | 2 | 0.9 | ..... | 5k | 2s | SW | Calm | 6 | 0 | Fair | |
| Oswego, New York | 29.69 | 754.1 | 30.02 | 762.5 | 35 | 1.7 | 61 | NE | 15 | 6.7 | ..... | 0 | 0 | ..... | ..... | 0.08 | 2.0 | Clear | |
| Pembina, Dakota | 29.33 | 745.0 | 30.21 | 767.3 | 22 | — 5.6 | 86 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Philadelphia, Pennsylvania | 29.71 | 754.6 | 29.76 | 755.9 | 46 | 7.8 | 69 | N | 23 | 10.3 | ..... | 1ck | 8s | NW | NW | 0.03 | 0.8 | Cloudy | |
| Phœnix, Arizona | 28.82 | 732.0 | 30.61 | 777.5 | 59 | 15.0 | 82 | N | ..... | ..... | 5 | ..... | 10s | ..... | Calm | 0.05 | 1.3 | Cloudy | |
| Pike's Peak, Colorado | 17.35 | 440.7 | 29.56 | 750.8 | 5 | —15.0 | 100 | NE | 22 | 9.8 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Pioche, Nevada | 23.81 | 604.8 | 29.58 | 751.3 | 28 | — 2.2 | 88 | S | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 0.05 | 1.3 | Cloudy | |
| Pittsburg, Pennsylvania | 29.19 | 741.4 | 30.02 | 762.5 | 38 | 3.3 | 72 | N | 9 | 4.0 | ..... | ..... | 10s | ..... | N | 0.11 | 2.8 | Cloudy | |
| Port Huron, Michigan | 29.44 | 747.8 | 30.13 | 765.3 | 32 | 0.0 | 89 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.29 | 7.4 | Clear | |
| Portland, Maine | 29.71 | 754.6 | 29.76 | 755.9 | 41 | 5.0 | 82 | N | 15 | 6.7 | ..... | 2k | Fog | Calm | N | 0.38 | 9.7 | Foggy | |
| Portland, Oregon | 29.80 | 756.9 | 29.91 | 759.7 | 46 | 7.8 | 85 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.28 | 7.1 | Cloudy | |
| Prescott, Arizona | 24.63 | 625.6 | 29.99 | 761.7 | 30 | — 1.1 | 89 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.04 | 1.0 | Cloudy | |
| Punta Rassa, Florida | 29.93 | 760.2 | 29.95 | 760.7 | 73 | 22.8 | 85 | NW | 12 | 5.4 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Red Bluff, California | 29.58 | 751.3 | 29.94 | 760.5 | 50 | 10.0 | 86 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.09 | 2.3 | Cloudy | |
| Rochester, New York | 29.39 | 746.5 | 30.02 | 762.5 | 35 | 1.7 | 61 | NE | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0.35 | 8.9 | Clear | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roseburg, Oregon | 29.37 | 746.0 | 29.91 | 760.5 | 43 | 6.1 | 83 | E | 2 | 0.9 | ..... | 0 | 1s | ..... | Calm | 0.20 | 5.1 | Clear | |
| Sacramento, California | 29.89 | 759.2 | 29.97 | 761.2 | 50 | 10.0 | 86 | S | 8 | 3.6 | ..... | ..... | 8s | ..... | SW | 0.11 | 2.8 | Cloudy | |
| St. Louis, Missouri | 29.54 | 750.3 | 30.14 | 765.5 | 35 | 1.7 | 70 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| St. Marks, Florida | 29.44 | 747.8 | 29.95 | 760.7 | 60 | 15.6 | 76 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.49 | 12.4 | Clear | |
| St. Paul, Minnesota | 29.28 | 743.7 | 30.14 | 765.5 | 32 | 0.0 | 64 | Calm | 0 | 0 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.36 | 644.1 | 29.69 | 754.1 | 38 | 3.3 | 72 | S | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0.95 | 24.1 | Cloudy | |
| San Antonio, Texas | 29.04 | 737.6 | 29.60 | 751.8 | 63 | 17.2 | 89 | NE | 1 | 0.4 | ..... | 5ck | 0 | S | ..... | 0 | 0 | Fair | |
| San Diego, California | 29.98 | 761.5 | 30.05 | 763.3 | 49 | 9.4 | 93 | NE | 6 | 2.7 | ..... | 0 | 5s | ..... | Calm | 0.12 | 3.0 | Fair | |
| Sandusky, Ohio | 29.46 | 748.3 | 30.16 | 766.1 | 35 | 1.7 | 80 | NE | 16 | 7.2 | ..... | 5cs | 0 | W | ..... | 0.03 | 0.8 | Fair | |
| Sandy Hook, New Jersey | 29.70 | 754.4 | 29.72 | 754.9 | 44 | 6.7 | 84 | N | 29 | 13.0 | ..... | ..... | 10n | ..... | N | 0.43 | 10.9 | Light rain | |
| San Francisco, California | 29.92 | 760.0 | 29.99 | 761.7 | 52 | 11.1 | 60 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Santa Fé, New Mexico | 23.02 | 584.7 | 29.56 | 750.8 | 19 | — 7.2 | 69 | E | 1 | 0.4 | ..... | 5cs | 0 | Calm | ..... | 0.16 | 4.1 | Fair | |
| Savannah, Georgia | 29.80 | 756.9 | 29.89 | 759.2 | 66 | 18.9 | 64 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.11 | 2.8 | Clear | |
| Shreveport, Louisiana | 29.66 | 753.4 | 29.88 | 758.9 | 57 | 13.9 | 81 | E | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 29.80 | 756.9 | 29.84 | 757.9 | 61 | 16.1 | 77 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.37 | 9.4 | Clear | |
| Springfield, Massachusetts | 29.54 | 751.6 | 29.72 | 754.9 | 43 | 6.1 | 67 | NE | 10 | 4.5 | ..... | ..... | 10s | ..... | N | 0.30 | 7.6 | Cloudy | |
| Stockton, Texas | 26.80 | 680.7 | 29.80 | 756.9 | 48 | 8.9 | 42 | W | 12 | 5.4 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.69 | 754.1 | 29.75 | 755.6 | 37 | 2.8 | 100 | N | 16 | 7.2 | ..... | ..... | 10n | ..... | N | 0.33 | 8.4 | Light rain | |
| Toledo, Ohio | 29.41 | 747.0 | 30.12 | 765.0 | 32 | 0.0 | 79 | NE | 9 | 4.0 | ..... | 5c | 0 | W | ..... | 0.04 | 1.0 | Fair | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 44 | 6.7 | 54 | S | ..... | ..... | 1 | ..... | 10s | ..... | Calm | 0.93 | 23.6 | Cloudy | |
| Tybee Island, Georgia | 29.87 | 758.7 | 29.90 | 759.4 | 62 | 16.7 | 78 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.15 | 3.8 | Clear | |
| Umatilla, Oregon | 29 38 | 746.2 | ..... | ..... | 50 | 10.0 | 93 | SW | 24 | 10.7 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Vicksburg, Mississippi | 29.70 | 754.4 | 29.96 | 761.0 | 54 | 12.2 | 93 | E | 6 | 2.7 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Virginia City, Montana | 23.95 | 608.3 | 29.43 | 747.5 | 30 | — 1.1 | 78 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Visalia, California | 29.66 | 753.4 | 30.04 | 763.0 | 45 | 7.2 | 92 | NE | 1 | 0.4 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Washington, D. C. | 29.72 | 754.9 | 29.83 | 757.7 | 47 | 8.3 | 62 | N | 24 | 10.7 | ..... | 0 | 2ks | ..... | N | 0.03 | 0.8 | Fair | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 42 | 5.6 | 66 | Calm | 0 | 0 | ..... | 2k | 5ks | Calm | Calm | 0.27 | 6.9 | Fair | |
| Wilmington, N. Carolina | 29.74 | 755.4 | 29.81 | 757.2 | 59 | 15.0 | 81 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 1.00 | 25.4 | Clear | |
| Winnemucca, Nevada | 25.43 | 645.9 | 29.79 | 756.7 | 39 | 3.9 | 82 | SW | 12 | 5.4 | ..... | ..... | 10ks | ..... | SW | 0.16 | 4.1 | Cloudy | |
| Wood's Holl, Mass | 29.66 | 753.4 | 29.71 | 754.6 | 41 | 5.0 | 91 | N | 8 | 3.6 | ..... | ..... | 10n;fg | ..... | N; Calm | 1.11 | 28.2 | Light rain | |
| Yankton, Dakota | 28.81 | 731.8 | 30.15 | 765.8 | 31 | — 0.6 | 68 | NE | 3 | 1.3 | ..... | 5cs | 2s | NW | NW | 0 | 0 | Cloudy | |
| Yuma, Arizona | 29.79 | 756.7 | 29.95 | 760.7 | 50 | 10 0 | 64 | SW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0.12 | 3.0 | Clear | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 29.77 | 756.1 | 29.82 | 757.4 | 14.5 | — 9.7 | 91 | E | 3 | 1.3 | ..... | 2cs | 0 | NE | ..... | 0 | 0 | Fair | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 29.92 | 760.0 | 29.94 | 760.5 | 81 | 27.2 | 82 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.08 | 764.0 | 30.09 | 764.3 | 79 | 26.1 | 82 | Calm | 0 | 0 | ..... | 2c | 0 | SE | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.91 | 759.7 | 29.99 | 761.7 | 82 | 27.8 | ..... | NE | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | ..... | ..... | 29.99 | 761.7 | 84 | 28.9 | 75 | NE | ..... | ..... | 2 | 4c | 5k | E | ..... | 0 | 0 | Fair | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | 30.05 | 763.2 | 30.06 | 763.4 | 79.2 | 26.5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.21 | 640.3 | ..... | ..... | 68.5 | 20.3 | 83 | Calm | ..... | ..... | 0 | ..... | 10s;n | ..... | ..... | 0.09 | 2.3 | ..... | Thomas Herran. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medillin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,700 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.6 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,176.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft.,or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er —10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.93 | 760.2 | 49 | 9.4 | 47 | 8.3 | 85 | WSW | 11 | 4.9 | ..... | ..... | 5ks | ..... | W | 0.11 | 2.8 | ..... | ..... | Clearing... .. | |
| Navy Yard, Pensacola, Fla. | 30.07 | 763.8 | 62 | 16.7 | 62 | 16.7 | 94 | NE | 23 | 10.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear. ..... | |
| Navy Yard, Portsmouth, N.H | 29.85 | 758.2 | 75 | 23.9 | 39 | 3.9 | 91 | N | 2 | 0.9 | ..... | ..... | 10 | ..... | ..... | 0.2 | 5. | ..... | ..... | Threatening | |
| Naval Hospital, Yokohama, Japan | 30.00* | 762.0* | 55.8 | 13.2 | 47.2 | 8.4 | 99 | NW | ..... | ..... | 1 | ..... | 10n | ..... | SSW | 0.36 | 9.1 | ..... | ..... | Heavy rain. | |
| Adams. Panama | 29.93 | 760.2 | 81 | 27.2 | 81 | 27.2 | 87 | NNW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | |
| Alliance, N. 36° 24′, E. 22° 29′ | 30.15‡ | 766.6‡ | ..... | ..... | 61 | 16.1 | 66 | WSW | ..... | ..... | 2–3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Ashuelot. Shanghai, China | 30.10* | 764.5* | 55 | 12 8 | 52 | 11.1 | 100 | NNE | ..... | ..... | 3 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Misty..... | |
| Canonicus, New Orleans, La. | 29.88 | 758.9 | 48 | 8.9 | 64 | 17.8 | 78 | ENE | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Colorado. New York, N. Y. | 29.71‡ | 754.6‡ | ..... | ..... | 43 | 6.1 | 75 | N | 12 | 5.4 | ..... | ..... | 10 | ..... | N | 0.04 | 1.0 | ..... | ... .... | Drizzling..... | |
| Constitution, N. 49° 22′ W. 5° 43′ | 29.94‡ | 737.6‡ | ..... | ..... | 39 | 3.9 | 100 | ENE | ..... | ..... | 9 | ..... | 10 | ..... | ENE | ..... | ..... | Very Heavy | ENE | Overcast..... | |
| Despatch, Constantinople, Turkey. | 30.30 | 769.6 | 81 | 27.2 | 61 | 16.1 | 61 | SSE | ..... | ..... | 1 | ..... | 5 | ..... | Calm | ..... | ..... | Smooth | ..... | Fair ..... | |
| Enterprise, Pensacola, Florida | 29.95‡ | 760.7‡ | ..... | ..... | 64 | 17.8 | 78 | NE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Franklin, Norfolk, Va. | 29.71‡ | 754.6‡ | ..... | ..... | 59 | 15.0 | 82 | NNW | 12 | 5.4 | ..... | ..... | ..... | ..... | ..... | 0.3 | 8. | ..... | ..... | Cloudy..... | |
| Gettysburg Valetta, Malta | 29.84‡ | 757.9‡ | ..... | ..... | 68 | 20.0 | 100 | SSE | ..... | ..... | 5 | ..... | 2 | ..... | Calm | 0 | 0 | ..... | ..... | Fair..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.01 | 763.0 | 75 | 23.9 | 74 | 23.3 | 76 | NNE | ..... | ..... | 3 | ..... | 2 | ..... | NNE | ..... | ..... | ..... | ..... | Clear..... | |
| Marion, Smyrna, Turkey | 30.16 | 766.1 | 61 | 16.1 | 60 | 15.6 | 60 | W | ..... | ..... | 1 | ..... | 5 | ..... | Calm | 0 | 0 | Smooth | S | Fair ..... | |
| Michigan, Erie, Pa. | 29.60 | 751.8 | 72 | 22.2 | 35 | 1.7 | 80 | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Monongahela. N. 22° 11′, E. 115° 02′ | 30.02* | 762.5* | 73 | 22.8 | 73 | 22.8 | 85 | SE | ..... | ..... | 1–3 | ..... | 10 | ..... | ..... | Mod'ate | Mod'ate | Smooth | ..... | Thunder-storm.. | |
| New Hampshire, Port Royal, S. C. | 30.08 | 764.0 | 64 | 17.8 | 62 | 16.7 | 72 | WNW | 11 | 4.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Omaha, N. 15° 45′, W. 61° 38′ | 30.12* | 765.0* | 82 | 27.8 | 82 | 27.8 | 67 | ESE | 4 | 1.8 | ..... | ..... | 4 | ..... | E | 0 | 0 | Smooth | ..... | Bright ..... | |
| Onward, Callao, Peru | 30.00† | 762.0† | ..... | ..... .. | 74 | 23.3 | 90 | SE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... .. | ..... | Long | W | Misty..... ..... | |
| Ossipee, N. 27° 12′, W. 94° 05′ | 29.80‡ | 756.9‡ | ..... | ..... | 70 | 21.1 | 95 | SE | ..... | ..... | 5 | ..... | 2 | ... | SE | ..... | ..... | Long | SE | Clear..... | |
| Palos, Shanghai, China | 30.17* | 766.3* | 62 | 16.7 | 53 | 11.7 | 93 | N | ..... | ..... | 4 | ..... | 10 | ..... | N | ..... | ..... | ..... | ..... | Drizzling..... | |
| Pensacola, Honolulu, H. I. | 30.24 | 768.1 | 74 | 23.3 | 73 | 22.8 | 76 | NE | 10 | 4.5 | ..... | ..... | 1 | ..... | NE | 0 | 0 | ..... | ..... | Clear ..... | |
| Plymouth. Norfolk, Va. | 29.76‡ | 755.9‡ | ..... | ..... | 59 | 15.0 | 82 | NNW | ..... | ..... | 3 | ..... | 10 | ..... | NNW | ..... | ..... | ..... | ..... | Misty..... | |
| Powhatan, Norfolk, Va. | 29.76‡ | 755.9‡ | ..... | ..... | 59 | 15.0 | 100 | NW | 9.0 | 4.0 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Smooth | ..... | Cloudy..... | |
| Ranger. Amoy, China | 30.02* | 762.5* | ..... | ..... | 68 | 20.0 | 90 | NW | ..... | ..... | 0–1 | ..... | 10 | .... | Calm | ..... | ..... | ..... | ..... | D. clouds..... | |
| Rio Bravo, Brownsville, Texas | ..... | ..... | ..... | ..... | 70 | 21.1 | 100 | S | ..... | ..... | 2 | ..... | 10 | .. ..... | S | ..... | ..... | ..... | ..... | Cloudy..... | |
| Santee. Annapolis, Md | 29.86* | 758.4* | 64 | 17.8 | 48 | 8.9 | 70 | NW | ..... | ..... | 6 | ..... | 2 | ..... | ..... | 0.04 | 1.0 | ..... | ..... | Clear..... | |
| Saratoga, Washington, D. C. | 29.97* | 761.2* | ..... | ..... | 53 | 11.7 | 93 | WNW | ... .. | ..... | 4 | ..... | 2 | ..... | W | Mod'ate | Mod'ate | ..... | ..... | Fair ..... | |
| St. Louis, League Island, Pa | 25.72 | 754.9 | 63 | 17.2 | 47 | 8.3 | 85 | N | 12 | 5.4 | ..... | ..... | 8 | ..... | NE | 0.02 | 0.5 | ..... | ..... | Cloudy..... | |
| Supply, Havre, France | 29.11 | 739.4 | 50 | 10.0 | 48 | 8.9 | 92 | NE | ..... | ..... | 3 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... ... | Cloudy..... | |
| Swatara, N. 9° 50′ W. 79° 43′ | 29.98* | 761.5* | ..... | ..... | 82 | 27.8 | 83 | N | ..... | ..... | 3 | ..... | 9 | ..... | N&E | ..... | ..... | Long | ..... | D. clouds..... | |
| Tennessee, Colombo, Ceylon | 29.92* | 760.0* | 88 | 31.1 | 86 | 30.0 | 80 | SSW | 2 | 0.9 | ..... | ..... | 5 | ..... | SSW | 0.8 | 20. | Slight | W | D. clouds..... | |
| Trenton, Piraeus, Greece | 30.17‡ | 766.3‡ | ..... | ..... | 60 | 15.6 | 76 | SE | ..... | .... | 2 | ..... | 0 | .... ... | ..... | 0 | 0 | Smooth | ..... | Hazy..... | |
| Tuscarora, N. 24° 15′ 31″ W. 110° 20′ 47″ | 30.04 | 763.0 | 65 | 18.3 | 63 | 17.2 | 67 | WNW | .... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Smooth | ..... | Fair..... ..... | |
| Vandalia, Palermo, Sicily | 29 61‡ | 752.1‡ | ..... | ..... | 73 | 22.8 | 46 | ESE | ..... | ..... | 3–6 | ..... | 5 | ..... | SE | .... .... | ..... | ..... | ..... | Squally ..... | |
| Wabash. Boston, Mass. | 29.75‡ | 755.6‡ | ..... | ..... | 41 | 5.0 | 91 | NNW | 6 | 2.7 | ..... | ..... | 10 | ..... | Calm | 0.49 | 12.4 | ..... | ..... | Light rain... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Panama, Esquimault, B. C. | | | 29.75* | 755.6* | | | | SSW | | | 3 | | 10 | | | | | Variable | Capt. Seabury. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, N. 24° 48′, E. 119° 36′ | | | | | 66 | 18.9 | | S | | | 6 | | 10 | | NNE | Mod'ate | NNE | Overcast | Capt. Maury. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Corrected for temperature and elevation; instrumental error not known.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WHITE STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. C. Cortis, Agent, New York. | | | | | | | | | | | | | | | | | | | |
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, N. 49° 11′ W. 30° 50′ | | | 30.37† | 771.4† | 56 | 13.3 | ?? | ENE | | | 1 | | 10k | | ENE | High | NE | Fair | Capt. W. H. Thompson |
| S. S. Celtic, N. 40° 28′, W. 69° 34′ | | | 29.67† | 753.6† | 48 | 8.9 | 56 | W | | | 1 | | | NW | | Mod'ate | S | Misty | Capt. B. Gleadell. |
| S. S. Germanic, N. 41° 23′, W. 64° 27′ | | | 29.82† | 757.4† | 49 | 9.4 | 57 | SSW | | | 4 | | 7 | | W | Light | WSW | Hazy | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Aneroid.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary. | | | | | | | | | | | | | | | | | | | |
| S. S. Belgic, N. 40° 7′, W. 179° 12′ | | | 29.64* | 752.8* | | | | WNW | | | 6 | | Heavy | | WNW | Mod'ate | WNW | Hailing | Capt. John Metcalf. |
| S. S. Gaelic, Hong-Kong, China | | | 29.92† | 760.0† | 70 | 21.1 | ?? | NE | | | 5 | | Haze | | | Smooth | NE | Raining | Capt. W. H. Kidley |
| S. S. Oceanic, N. 37° 41′, W. 168° 34′ | | | 29.24 | 742.7 | 55 | 12.8 | 100 | SSW | | | 6 | | 10 | | WNW | | WSW | Lightning | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of A. Schumacher & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg, N. 42° 05′, W. 23° 51′ | | | 30.14 | 765.5 | 58.0 | 14.4 | 78 | N | | | 5 | | k | | N | Rough | N | Hazy | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | Character. | Direction From— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois, N. 51° 02′, W. 16° 45′ | | | 30.00* | 762.0* | 48 | 8.9 | 92 | NNE | | | 7 | | 4 | | NNE | Heavy | N | D. clouds | Captain Shackelford. |
| S. S. Indiana, Liverpool | | | 29.65† | 753.1† | 39 | 3.9 | 82 | ESE | | | 6 | | 3 | | WNW | | | Partly cl'dy | Captain Sargent. |
| S. S. Ohio, Philadelphia, Pa | | | 29.84 | 757.9 | 45 | 7.2 | 84 | SSW | | | 1 | | 9 | | WSW | | | Dull | Captain Morrison. |
| S. S. Pennsylvania | | | | | | | | | | | | | | | | | | | Captain Harris. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid. †Aneroid; unreliable, corrected for elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |

**ALLAN LINE MARINE SERIES.**

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| S. S. Scandinavian, Lough Foyle, Ireland | | | 29.50 | 749.3 | 43 | 6.1 | | NE | | | 6 | | 9 | | NE | | | Showery | Capt. W. Richardson. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES.** (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Crisfield, Md. | | | 29.62 | 752.3 | 53 | 11.7 | 80 | NNW | 21 | 9.4 | | | 8d | | | | | Clearing | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.56 | 750.8 | 22 | — 5.6 | 86 | ESE | 17.3 | 7.7 | | | 10s | | Calm | | | Fair | O. T. Sherman. |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assd,) Chief Signal Officer, U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 30, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
ORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.13 | 765.2 | 63.0 | 17.2 | ..... | NE | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Dr. Ollive. |
| Nemours | ..... | ..... | 29.91 | 759.8 | 56.7 | 13.7 | 71 | WNW | ..... | ..... | 5 | ..... | 9 | ..... | ..... | 0.646 | 16.4 | Covered | Michel. |
| Algiers | ..... | ..... | 29.70 | 754.4 | 52 5 | 11.4 | 83 | SW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0.630 | 16.0 | Covered | Towiliere. |
| La Calle | ..... | ..... | 29.66 | 753.3 | 62.6 | 17.0 | 70 | NW | ..... | ..... | 7 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Boulangeot. |
| Tunis | ..... | ..... | 29.60 | 751.8 | 72.1 | 22.3 | 49 | E | ..... | ..... | 5 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair | Jacques. |
| Sfax | ..... | ..... | 29.72 | 755.0 | 68.0 | 20.0 | ..... | ENE | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 0 | 0 | Very cloudy | Gau. |
| Saida | ..... | ..... | 29.86 | 758.4 | 64.9 | 18 3 | 84 | NNW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0 | 0 | Very cloudy | Herbin. |
| Tebessa | ..... | ..... | 29.68 | 753.9 | ..... | ..... | ..... | WSW | ..... | ..... | 6 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Bourgeois. |
| Geriville | ..... | ..... | 29.84 | 758.0 | 51.8 | 11.0 | 86 | W | ..... | ..... | 5 | ..... | 6 | ..... | ..... | 0.08 | 2. | Cloudy | Lemaillot. |
| Laghouat | ..... | ..... | 29.91 | 759.8 | 68.9 | 20.5 | 20 | W | ..... | ..... | 6 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Guyot. |
| Biskra | ..... | ..... | 29.79 | 756.6 | 74.3 | 23.5 | 58 | N | ..... | ..... | 7 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 28.87 | 733.2 | 29.39 | 746.6 | 66.2 | 19.0 | 43 | SW | ..... | ..... | 7 | ..... | 3 | ..... | ..... | 0.492 | 12.5 | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 28.58 | 725.9 | 29.32 | 744.7 | 61.5 | 16.4 | 45 | WSW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbiski. |
| Eperies | 28.60 | 726.3 | 29.45 | 747.9 | 60.3 | 15.7 | 49 | S | ..... | ..... | 5 | ..... | 3cks | ..... | N | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.17 | 715.6 | 29.38 | 746.2 | 60.8 | 16.0 | 40 | SW | ..... | ..... | 7 | ..... | 3 | ..... | ..... | 0.006 | 0.15 | ..... | Andreas Rospini. |
| Hermannstadt | 28.25 | 717.5 | 29.62 | 752.4 | 62.8 | 17.1 | 33 | SSE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. Reissenberg |
| Kremsmünster | 27.84 | 707.2 | 29.13 | 739.8 | 60.1 | 15.6 | 32 | S | ..... | ..... | 7 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner |
| Lemberg | 28.54 | 724.9 | 29.51 | 749.5 | 54.7 | 12.6 | 68 | S | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Dr. T. Stanecki. |
| Pola | 29.32 | 744.7 | 29.43 | 747.5 | 57.6 | 14.2 | 86 | SE | ..... | ..... | 7 | ..... | 10cs | ..... | ..... | 0.827 | 21.0 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.16 | 740.7 | 29.61 | 752.1 | 65.5 | 18.6 | 39 | S | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.2[illegible] | 743.1 | 29.53 | 750.1 | 58.6 | 14.8 | 74 | S | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Karl Stancel. |
| Trieste | 29.32 | 744.8 | 29.43 | 747.4 | 60.1 | 15.6 | 75 | WSW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.780 | 19.8 | Hailing | P. Busin. |
| Vienna | 28.59 | 726.1 | 29.27 | 743.4 | 67.3 | 19.6 | 20 | S | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 27.52 | 699.1 | 29.02 | 737.2 | 38.1 | 3.4 | 83 | SSW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0.126 | 3.2 | ..... | Prof. M. Passau. |
| Brussels | 28.76 | 730.6 | 28.97 | 735.7 | 40.8 | 4.9 | 94 | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.276 | 7.0 | ..... | Royal Observatory |
| Furnes | 29.06 | 738.0 | 29.08 | 738.6 | 38.1 | 3.4 | 89 | N | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 0.181 | 4.6 | Raining | M. E. de Cae. |
| Maeseyck | 28.83 | 732.2 | 28.95 | 735.4 | 50.5 | 10.3 | 65 | SSW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.177 | 4.5 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 ? set. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E. Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

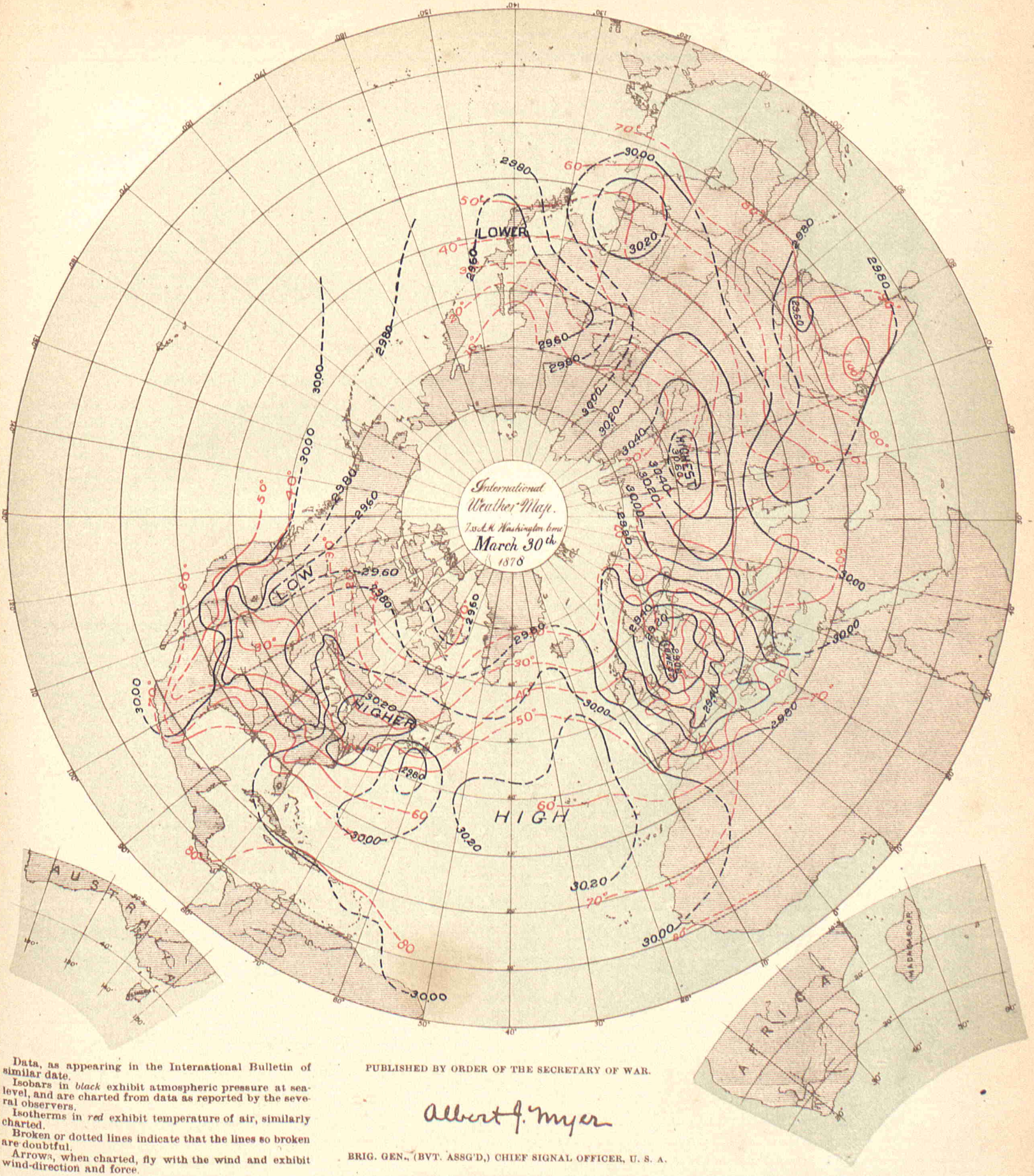
| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.43 | 747.5 | 29.53 | 750.0 | 34.5 | 1.4 | ..... | NW | 18 | 8.0 | ..... | ..... | 7 | ..... | ..... | 0.160 | 4.06 | Snowing..... | W. B swell. |
| Ardrossan | 29.57 | 751.1 | 29.58 | 751.3 | 44 | 6.7 | ..... | NNW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.69 | 754.1 | 45.0 | 7.2 | ..... | N | 15 | 6.7 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | S. Call, for Dr. Robinson. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.48 | 748.8 | 43.0 | 6.1 | ..... | NNW | 14 | 6.3 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 29.73 | 755.1 | 42.9 | 6.1 | ..... | NNW | ..... | ..... | 3-4 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds .... | J. Dreyer. |
| Bradford, Yorkshire | 28.97 | 735.8 | 29.45 | 748.0 | 41.1 | 5.1 | ..... | NE | ..... | ..... | 5 | ..... | 4 | ..... | ..... | 0 | 0 | D. clouds.... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.96 | 761.0 | 29.99 | 761.7 | 83.0 | 28.3 | ..... | NE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.30 | 744.2 | 36.0 | 2.2 | ..... | N | ..... | ..... | 4-5 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | H. Todd. [H. C. |
| Cardington | ..... | ..... | 29.36 | 745.7 | 42.0 | 5.6 | ..... | N | ..... | ..... | 5 | ..... | 8 | ..... | ..... | Blank | Blank | Overcast..... | John McLaren. |
| Chatham, School M. E. | 29.13 | 739.9 | 29.26 | 743.2 | 37.2 | 2.9 | ..... | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Lt. W. G. Morris, R. E. |
| Dartmoor | 27.96 | 710.2 | 29.46 | 748.2 | 31.2 | — 0.4 | ..... | NE | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | Heavy snow | Alexander Watt. |
| Donaghadee | 29.60 | 751.8 | 29.63 | 752.6 | 44 | 6.7 | ..... | N | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 29.14 | 740.1 | 29.17 | 740.9 | 37 | 2.8 | ..... | NNW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.44 | 747.8 | 46.1 | 7.8 | ..... | NNE | 4.4 | 2.0 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | Thomas Mackereth. |
| Falmouth, Observatory | 29.32 | 744.7 | 29.56 | 750.8 | 39.7 | 4.3 | ..... | NNW | ..... | ..... | 6 | ..... | 5 | ..... | ..... | Blank | Blank | Squally..... | The Staff. |
| Fort Napier, (Natal) | 27.89 | 708.4 | 30.12 | 765.0 | 71.0 | 21.7 | ..... | E | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.69 | 754.1 | 29.92 | 760.0 | 89 | 31.7 | ..... | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's College | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.82 | 757.4 | 29.87 | 758.7 | 56.0 | 13.3 | ..... | W | ..... | ..... | 6 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | Corpl. C. Aitken, A. H. C. |
| Glasgow, Observatory | 29.37 | 746.0 | 29.58 | 751.3 | 42.1 | 5.6 | ..... | NNW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | Blue sky..... | D. G. Maclean. |
| Great Yarmouth | 29.19 | 741.4 | 29.20 | 741.7 | 37 | 2.8 | ..... | NNE | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast .... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.10 | 739.1 | 29.28 | 743.7 | 39.7 | 4.3 | ..... | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast..... | The Staff, for G. B. Airy. |
| Guernsey | 29.18 | 741.2 | 29.41 | 747.0 | 40 | 4.4 | ..... | NW | ..... | ..... | 6 | ..... | 7 | ..... | ..... | ..... | ..... | Squally..... | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 29.56 | 750.8 | 42 | 5.6 | ..... | N | ..... | ..... | 6 | ..... | 3c | ..... | ..... | 0.17 | 4.3 | Fine..... | M. P. Moyle. |
| Holyhead | 29.51 | 749.5 | 29.56 | 750.8 | 42 | 5.6 | ..... | NNW | ..... | ..... | 6 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | John Tilston. |
| Jersey | 29.14 | 740.1 | 29.43 | 747.5 | 40.2 | 4.6 | ..... | N | ..... | ..... | 6 | ..... | 7 | ..... | ..... | Blank | Blank | D. clouds.... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 29.30 | 744.2 | 38.4 | 3.6 | ..... | NNW | 25 | 11.2 | ..... | ..... | 10s | ..... | ..... | Blank | Blank | Overcast..... | The Staff. |
| Kingstown | 29.62 | 752.3 | 29.65 | 753.1 | 41 | 5.0 | ..... | NNW | ..... | ..... | 5 | ..... | 4 | ..... | ..... | Blank | Blank | D. clouds.... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.38 | 746.2 | 38.0 | 3.3 | ..... | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.44 | 747.8 | 29.52 | 749.8 | 66.6 | 19.2 | ..... | NW | ..... | ..... | 8 | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds.... | Sgt. Fred. Travis, A. H. |
| Nairn | 29.54 | 750.3 | 29.64 | 752.7 | 35 | 1.7 | ..... | NNW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 30.05 | 763.3 | 76.2 | 24.6 | ..... | NE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | C. S. Duncombe. |
| Nottingham, Observatory | 29.21 | 741.9 | 29.40 | 746.7 | 38.7 | 3.7 | ..... | N | ..... | ..... | 6 | ..... | 10ck,k | s;d] | N | 0.010 | 0.25 | Overcast..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 28.87 | 733.3 | 29.40 | 746.7 | 38.8 | 3.8 | ..... | N | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Threatening | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.36 | 745.7 | 41 | 5.0 | ..... | N | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Threatening | Mr. Lucas. |
| Plymouth | 29.42 | 747.3 | 29.49 | 749.0 | 43.3 | 6.3 | ..... | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | John Merrifield. |
| Roche's Point | 29.67 | 753.6 | 29.72 | 754.9 | 43 | 6.1 | ..... | N | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | Cloudy..... | W. Kennedy. |
| Saint Ann's Head | 29.42 | 747.3 | 29.58 | 751.3 | 41 | 5.0 | ..... | N | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | Hailing..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 29.60 | 751.8 | 35.5 | 1.9 | ..... | N | 28 | 12.5 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.94 | 760.5 | 64.6 | 18.1 | ..... | SW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | Sergt. W. H. Lyne. |
| Sheffield | 29.15 | 740.4 | 29.43 | 747.5 | 41.6 | 5.3 | ..... | NNE | ..... | ..... | 5 | ..... | 9 | ..... | ..... | 0.01 | 0.3 | Overcast..... | W. F. Cooper. |
| Silloth Rectory | 29.49 | 749.0 | 29.52 | 749.8 | 43.6 | 6.4 | 56 | E | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0 | 0 | D. clouds.... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.05 | 737.9 | 29.46 | 748.3 | 42.5 | 5.8 | ..... | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 29.67 | 753.6 | 34 | 1.1 | ..... | NNE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | ¼ clouded... | John Sutherland. |
| Stratfield Turgiss | 29.12 | 739.6 | 29.34 | 745.2 | 38.3 | 3.5 | ..... | N | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | Showery .... | Rev. C. H. Griffith, F.M. |
| Thurso | ..... | ..... | 29.59 | 751.6 | 36 | 2.2 | ..... | N | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 29.80 | 756.9 | 44.0 | 6.7 | ..... | N | 20 | 8.9 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.72 | 754.9 | 68.0 | 20.0 | 88 | S | ..... | ..... | 2 | ..... | 10kn | ..... | ..... | 0.30 | 7.6 | Covered ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.74 | 755.4 | 29.93 | 760.2 | 81.7 | 27.6 | 74 | E | 3.5 | 1.6 | ..... | 4 | 4 | ..... | ..... | 0.02 | 0.5 | Cloudy; fine | C. Meldrum. |
| Melbourne, Observatory | 29.98 | 761.5 | 30.07 | 763.8 | 52.2 | 11.2 | 79 | WNW | 14 | 6.3 | ..... | ..... | 10 | ..... | ..... | 0.44 | 11.2 | Showery..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft, or 670.6 m.

## MARINE SERIES.

| VESSELS. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|
| S. S. Algeria | ..... | ..... | ..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | Capt. C. C. Prehn. |
| S. S. Peruvian, Off Halifax, N. S. | 5 | NNE | Overcast..... | Capt. W. H. Smith, R. N. [R. |
| Royal Alice | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | Capt. Alex. Simpson |
| S. S. Yorkshire, N. 41° 35′ W. 51° 5′ | 2 | ESE | D. clouds..... | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 330 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.24 | 666.5 | | | 68.9 | 20.5 | 75 | E | | | 3 | 2pc | | | | 0 | 0 | | Federico Maison. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—In the originals, the barometer is given as read o[n] its instrumental er[ror] is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always ma[de]. The rain-fall is ap[pa]rently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer [to] the moment of obs[er]vation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 28.96 | 735.6 | 29.01 | 736.8 | 40.8 | 4.9 | 92 | E | | | 4 | | 10 | | | | | | |
| Fanöe | 28.98 | 736.0 | 29.00 | 736.5 | 38.3 | 3.5 | 97 | NE | | | 2 | | 10 | | | | | | |
| Godthaab, (Greenland) | 29.71 | 754.6 | 29.75 | 755.7 | 28.9 | — 1.7 | 96 | S | | | 4 | | 6 | | | | | | |
| Stykkisholm, (Iceland) | 29.93 | 760.1 | 29.97 | 761.2 | 23.9 | — 4.5 | 100 | NE | | | 2 | | 8 | | | | | | |
| Thorshavn, (Faröe) | 29.73 | 755.2 | 29.77 | 756.1 | 25.2 | — 3.8 | 66 | N | | | 4 | | 7 | | | | | | |
| Vestervig | 28.94 | 735.0 | 29.11 | 739.3 | 32.7 | 0.4 | 98 | NE | | | 7 | | 10 | | | | | Snowing | |
| | | | | | | | | | | | | | | | | | | Snowing | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 28.86 | 733.0 | 29.41 | 747.0 | 42.8 | 6 | 76 | NE | | | 4 | | 8 | | | 0.492 | 12.5 | Very cloudy | Collignon, Director. |
| Amiens, Normal School | 28.98 | 736.2 | 29.10 | 739.0 | 36.7 | 2.6 | 89 | NW | | | 4 | | 10 | | | 0.504 | 12.8 | Covered | Bonvarne, Director. |
| Avignon, Normal School | 29.17 | 741.0 | 29.25 | 743.0 | 49.6 | 9.8 | 76 | E | | | 2 | | 8 | | SW | 0.339 | 8.6 | Very cloudy | Mr. Giraud, Director |
| Bar-sur-Seine | 28.59 | 726.1 | 29.15 | 740.3 | 37.6 | 3.1 | 89 | WSW | | | 3 | | 10 | | SW | 0.224 | 5.7 | Raining | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 38.3 | 3.5 | 83 | NW | | | 6 | | 10 | | NW | 0.453 | 11.5 | Covered | Normal School. |
| Besançon | 28.26 | 717.9 | 29.11 | 739.4 | 48.2 | 9 | 64 | S | | | 4 | | 8 | | SW | 0.033 | 0.9 | Very cloudy | Normal School. |
| Bourg-en-Bresse | 28.31 | 719.1 | 29.20 | 741.7 | 45.5 | 7.5 | 71 | W | | | 6 | | 5n | | S | 0.055 | 1.4 | Cloudy | Normal School. |
| Bourges, Normal School | 28.65 | 727.8 | 29.21 | 742.0 | 38.5 | 3.6 | 90 | W | | | 2 | | 10 | | S | 0.650 | 16.5 | Covered | A. Wagner, Director. |
| Brest, Naval Observatory | 29.27 | 743.5 | 29.49 | 749.0 | 38.7 | 3.7 | 76 | NNE | | | 5 | | 6 | | NNE | 0.059 | 1.50 | Squally | The Staff. |
| Carcassonne, Normal School | 29.03 | 737.4 | 29.45 | 747.9 | 45.3 | 7.4 | 89 | NW | | | 2 | | 2 | | NW | 0 | 0 | Slightly cl'dy | Vateau, Director. |
| Caen | 29.28 | 743.6 | 29.35 | 745.5 | 42.4 | 5.8 | 58 | NNW | | | 6 | | 8 | | NNW | 0.071 | 1.8 | Very cloudy | Normal School. |
| Chartres, Normal School | 28.63 | 727.3 | 29.20 | 741.7 | 38.8 | 3.8 | 73 | N | | | 6 | | 10 | | | 0.929 | 23.6 | Covered | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 28.69 | 728.7 | 29.01 | 736.9 | 36.3 | 2.4 | 93 | W | | | 3 | | 10cn | | W | 0.205 | 5.2 | Covered | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 27.92 | 709.1 | 29.28 | 743.8 | 38.8 | 3.8 | 67 | NW | | | 2 | | 8 | | NW | 0.118 | 3.0 | Hail-showers | Alluard, Director. |
| Commercy, Normal School | 28.21 | 716.5 | 29.08 | 738.6 | 43.2 | 6.2 | 73 | WSW | | | 8 | | 8 | | WSW | 0.071 | 1.8 | Very cloudy | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.12 | 714.3 | 29.26 | 743.3 | 47.3 | 8.5 | 78 | W | | | 2 | | 8 | | SW | 0.571 | 14.5 | ¾ covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 29.24 | 742.6 | 29.45 | 748.0 | 46.8 | 8.2 | 48 | NW | | | 6 | | 8 | | NW | 0.346 | 8.8 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.04 | 737.6 | 29.35 | 745.5 | 39.2 | 4 | 62 | SE | | | 6 | | 5 | | NE | 0.925 | 23.50 | Cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.23 | 717.0 | 29.13 | 740.0 | 46.4 | 8 | 65 | W | | | 6 | | 10 | | SW | 0.004 | 0.10 | Covered | Voudez, Director. |
| Lorient, Naval Observatory | 29.41 | 747.1 | 29.51 | 749.6 | 38.5 | 3.6 | 87 | NNW | | | 3 | | 5 | | N | 0.138 | 3.5 | ½ Covered | T. Carré, Director. |
| Mâcon, Normal School | 28.54 | 724.9 | 29.23 | 742.4 | 45.1 | 7.3 | 74 | S | | | 8 | | 5 | | W | 0.04 | 1. | Cloudy | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | 28.03 | 711.9 | 29.05 | 737.8 | 49.3 | 9.6 | 62 | SSW | | | 8 | | 8 | | NNE | 0 | 0 | Very cloudy | Normal School. |
| Nismes, Normal School | 29.01 | 737.7 | 29.21 | 741.8 | 52.5 | 11.4 | 50 | W | | | 4 | | 5 | | W | 0.138 | 3.5 | Cloudy | Boyer, Director. |
| Orleans, Normal School | 28.85 | 732.9 | 29.23 | 742.5 | 40.3 | 4.6 | 87 | N | | | 4 | | 10 | | | 0.75 | 19. | Covered | Bernard, Director. |
| Paris, Observatory | 28.93 | 734.7 | 29.16 | 740.7 | 37.9 | 3.3 | 76 | NW | | | 3 | | 10 | | NW | 0.350 | 8.89 | Covered | National Observatory. |
| Privas | 28.13 | 714.6 | 29.18 | 741.2 | 50.0 | 10 | 91 | W | | | 1 | | 10 | | S | 0.31 | 8. | Covered | Normal School |
| Puy de Dome (Summit) | | | | | | | | | | | | | | | | | | | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.44 | 747.8 | 29.47 | 748.6 | 47.3 | 8.5 | 67 | NW | | | 5 | | 8 | | NW | 0 | 0 | ¾ Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.16 | 740.7 | 29.25 | 742.9 | 38.8 | 3.8 | 82 | NNW | | | 8 | | 10 | | NW | 0.335 | 8.5 | Covered | F. Lucard, Director. |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | M. H. Hercouet. |
| Tarbes, Normal School | 28.41 | 721.7 | 29.49 | 749.1 | 46.4 | 8 | 72 | W | | | 4 | | 10 | | | 0.16 | 4. | Raining | T. Hugues, Director. |
| Villefranche | 28.51 | 724.1 | 29.26 | 743.3 | 45.5 | 7.5 | 64 | W | | | 4 | | 10 | | | 0.12 | 3. | Covered | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.80 | 757.0 | 29.83 | 757.7 | 75.2 | 24 | | | | | | | | | | 1.77 | 45. | | L'Abbé Marchési. |
| Lyons | | | 29.22 | 742.3 | 47.3 | 8.5 | | | | | | | 7 | | | 0 | 0 | | M. Jeys. |
| Marseilles, Observatory | | | 29.27 | 743.4 | 48.9 | 9.4 | 80 | W | | | 4 | | 10 | | | 0.673 | 17.10 | Raining | The Staff. |
| Mont-Louis | 24.19 | 614.5 | 29.51 | 749.5 | 32.9 | 0.5 | 55 | SW | 7.4 | 3.33 | | | 5 | | W | 0.118 | 3.0 | | Mr. Falguère. |
| Nice | 29.14 | 740.2 | 29.22 | 742.2 | 55.2 | 12.9 | 75 | W | | | 10 | | 10 | | W | 0.650 | 16.5 | Raining | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 28.88 | 733.6 | 29.16 | 740.6 | 37.0 | 2.8 | 84 | NW | | | 4 | | 10 | | NW | 0.413 | 10.5 | | Marié Davy, Director |
| Perpignan | | | 29.39 | 746.6 | 52.9 | 11.6 | 47 | NW | 22.4 | 10.00 | | | 9 | | NW | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 21.81 | 554.0 | | | 15.8 | — 9.0 | | NW | | | 8 | | 10 | | | 0.75 | 19.1 | Snowy | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.00 | 736.6 | 29.17 | 740.8 | 38.1 | 3.4 | 81 | NW | | | 4 | | 10 | | NW | 0.413 | 10.5 | Raining | E. Renou. |
| Toulouse, Observatory | 28.74 | 730.1 | 29.45 | 748.1 | 46.0 | 7.8 | 62 | NW | | | 6 | | 9 | | | 0.063 | 1.60 | Light rain | The Staff. |
| Tours | 29.13 | 740.0 | 29.33 | 745.0 | 44.4 | 6.9 | 57 | NNW | | | 6 | | 7 | | NNW | 2.749 | 69.8 | | C. Marquet. |
| Versailles, (near Paris) | | | 29.17 | 740.9 | 37.4 | 3.0 | 83 | NW | | | 4 | | 10 | | | 0.579 | 14.70 | Covered | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.34 | 770.5 | 30.36 | 771.1 | 45.0 | 7.2 | 73 | NE | 2.7 | 1.2 | | | 9 | | | 0 | 0 | Covered | Marc Dechevrens, S. J. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 28.92 | 734.6 | 29.09 | 738.9 | 54.0 | 12.2 | 68 | NW | | | 1 | | 10 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 28.71 | 729.3 | 29.23 | 742.5 | 57.9 | 14.4 | 52 | S | | | 5 | | 3 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 28.63 | 727.1 | 29.03 | 737.4 | 57.6 | 14.2 | 42 | SW | | | 5 | | 9 | | | 0.012 | 0.3 | | Albert Senz. |
| Cassel | 28.46 | 722.8 | 29.04 | 737.7 | 57.6 | 14.2 | 77 | SSW | | | 7 | | 4 | SSW | | 0.123 | 3.12 | | Dr. H. Möhl. |
| Crefeld | 28.81 | 731.8 | 28.97 | 735.8 | 55.2 | 12.9 | 48 | S | | | 3 | | 9 | | | 0.08 | 2. | | Director Lose. |
| Emden | 29.01 | 736.9 | 29.05 | 737.8 | 48.4 | 9.1 | 95 | W | | | 1 | | 10 | | | 0.31 | 8. | | Prof. Prestel. |
| Frankfort on the Main | 28.71 | 729.3 | 29.07 | 738.3 | 56.8 | 13.8 | 37 | SSW | | | 2 | | 3 | | | 0.004 | 0.1 | | Physical Society. |
| Friedrichshafen | 27.70 | 703.5 | 29.09 | 738.8 | 54.0 | 12.2 | 64 | SSW | | | 2 | | 3 | SW | | 0.059 | 1.5 | | M. Wilhelm. |
| Hamburg | 28.92 | 734.5 | 28.99 | 736.3 | 43.7 | 6.5 | 99 | S | | | 1 | | 10 | | | 0.220 | 5.6 | Raining | Captain F. Hegemann. |
| Kiel | 28.94 | 735.0 | 28.95 | 735.4 | 41.0 | 5.0 | 96 | Calm | | | 0 | | 10 | | | 0.180 | 4.58 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.08 | 738.6 | 29.15 | 740.4 | 49.6 | 9.8 | 79 | SE | | | | | | | | 0.013 | 0.32 | Cloudy | Prof. E. Luther. |
| Köslin | | | 28.96 | 735.5 | 55.0 | 12.8 | | S | | | 2 | | 4 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 28.71 | 729 2 | 29.12 | 739.6 | 56.3 | 13.5 | 60 | SSW | | | 4 | | 6 | SW | | 0.004 | 0.1 | | Prof. Bruhns. |
| Memel, Naval School | 29.22 | 742.3 | 29.27 | 743.4 | 41.9 | 5.5 | 89 | SE | | | 7 | | 10n | | | | | Raining | Reinbrecht von Skalweit. |
| Neufahrwasser | 29.08 | 738.5 | 29.09 | 738.9 | 51.6 | 10.9 | 79 | SSE | | | 3 | | 10 | S | | 0.106 | 2.7 | Raining | A. Lothes. |
| Posen | 28.88 | 733.5 | 29.17 | 740.9 | 56.1 | 13.4 | 68 | W | | | 8 | | 10 | | | 0 | 0 | Cloudy | Dr. Magener. |
| Strassburg Obs., (in Alsace | 28.53 | 724.7 | 29.06 | 738.1 | 58.1 | 14.5 | 41 | SW | | | 5 | | 10 | SW | | 0.004 | 0.10 | | Dr. Schur. |
| Stuttgart | 28.15 | 715.0 | 29.06 | 738.1 | 56.3 | 13.5 | 41 | SE | | | 1 | | 8 | S | | 0.134 | 3.4 | | Prof. Schoder. |
| Treves, (Trier) | 28.41 | 721.6 | 28.91 | 734.4 | 52.7 | 11.5 | 45 | S | | | 8 | | 10 | | | 0.084 | 2.14 | Foggy | Prof. Flesch. |
| Weissenburg, (Bavaria) | 27.67 | 702.8 | 29.13 | 739.9 | 52.7 | 11.5 | 55 | SSE | 2 | 1 | | | 9ck | S | S | 0.220 | 5.6 | | Dr. Von Bebber. |
| Wustrow, Naval School | 29.01 | 736.8 | 29.05 | 737 9 | 46.6 | 8.1 | 86 | ESE | | | 2 | | 10 | | | | | Raining | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Königsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.63 | 752.5 | 30.02 | 762 4 | 61.2 | 16.2 | | SW | | | 2.0 | | | | | | | Cloudy | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.75 | 755.7 | 29.80 | 757.0 | 84.1 | 28.9 | 57 | WSW | 26.0? | 11.6? | | | 8 | | | 0 | 0 | D. clouds | |
| Deesa | 29.28 | 743.8 | 29.74 | 755.4 | 100.2 | 37.9 | 24 | Calm | | | | | 1 | W | | 0 | 0 | D. clouds | |
| Bombay | 29.76 | 755.9 | 29.80 | 756.8 | 84.3 | 29.1 | 72 | WNW | 9.0 | 4.0 | | | 4 | | NW | 0 | 0 | D. clouds | |
| Poona | 27.75 | 704.9 | 29.69 | 754.2 | 94.0 | 34.4 | 34 | NNE | | | | | 1 | | | 0 | 0 | Dust-whirl | |
| Lahore | 28.99 | 736.3 | 29.72 | 754.9 | 87.0 | 30.6 | 34 | NW | 3.2 | 1.4 | | | 4 | | | 0 | 0 | Cloudy | |
| Belgaum | 27.29 | 693.2 | 29.79 | 756.6 | 84.7 | 29.3 | 63 | W | 12.0 | 5.4 | | | 2 | | W | 0 | 0 | Misty | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.74 | 730.1 | 29.62 | 752.5 | 86.8 | 30.4 | 17 | NW | 8.0 | 3.6 | | | | | | 0 | 0 | Hot wind | |
| Agra | 29.14 | 740.0 | 29.68 | 753.9 | 97.1 | 36.2 | 18 | W | | | | | | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.65 | 727.7 | 29.65 | 753.2 | 98.5 | 36.9 | 25 | Calm | 3.0 | 1.3 | | | 8 | | E | 0 | 0 | D. clouds | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.28 | 743.7 | 29.64 | 752.9 | 90.7 | 32.6 | 56 | NW | 8.7 | 3.9 | | | | | | 0 | 0 | Misty | |
| Allahabad | 29.34 | 745.2 | 29.64 | 752.8 | 97.3 | 36.3 | 27 | NW | 4.5 | 2.0 | | | 0 | | | 0 | 0 | Misty | |
| Patna | 29.43 | 747.4 | 29.60 | 751.9 | 97.2 | 36.2 | 8 | W | 1.9 | 0.8 | | | 2 | NW | W | 0 | 0 | | |
| Hazaribagh | 27.69 | 703.3 | 29.65 | 753.0 | 90.6 | 32.6 | 12 | WNW | 11.6 | 5.2 | | | 0 | | | 0 | 0 | Misty | |
| Cuttack | 29.63 | 752.6 | 29.71 | 754.6 | 88.9 | 31.6 | 63 | SSE | 3.5 | 1.6 | | | 5 | | | 0 | 0 | D. clouds | |
| Calcutta (Alipore) | 29.67 | 753.5 | 29.69 | 754.1 | 86.9 | 30.5 | 67 | SSW | 9.0 | 4.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.31 | 744.4 | 29.70 | 754.3 | 76.7 | 24.8 | 69 | E | 7.1 | 3.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.69 | 754.1 | 29.78 | 756.4 | 82.1 | 27.8 | 83 | SW | 13.0 | 5.8 | | | 8 | | | 0 | 0 | Blue sky | |
| Sibsagar | 29.47 | 748.5 | 29.81 | 757.3 | 69.0 | 20.6 | 90 | Calm | 5.5 | 2 5 | | | 10 | NE | NE | 0.14 | 3.6 | Gloomy | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.38 | 720.8 | 29.70 | 754.4 | 95.0 | 35.0 | 38 | NW | 1.6 | 0.7 | | | | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

**Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.**

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 28.99 | 736.4 | 29.41 | 747.0 | 56.1 | 13.4 | 63 | S | 4.3 | 1.9 | ..... | ..... | 10 | ..... | ..... | 1.378 | 35.0 | ..... | Prof. Giovanni Codig. |
| Padua | 29.21 | 741.9 | 29.32 | 744.7 | 56.1 | 13.4 | 66 | ESE | 22.4 | 10.0 | ..... | ..... | 10 | S | ..... | 0.768 | 19.5 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.13 | 739.9 | 29.33 | 744.9 | 51.8 | 11.0 | 89 | E | 4.9 | 2.2 | ..... | ..... | 10 | S | ..... | 1.240 | 31.5 | ..... | Conte Alm. Da Schio. |
| Bergamo | 27.93 | 709.3 | 29.26 | 743.2 | 52.5 | 11.4 | 53 | E | ..... | ..... | 8 | ..... | 8 | ..... | ..... | 0.575 | 14.6 | ..... | Prof. Trionfini Carlo. |
| Milan | 28.72 | 729 6 | 29.24 | 742.8 | 47.7 | 8.7 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 1.232 | 31.3 | ..... | Prof. Schiaparelli. |
| Moncalieri | 28.34 | 719.7 | 29.25 | 743.0 | 37.4 | 3.0 | 86 | NNE | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0.961 | 24.4 | ..... | Prof. P. F. Denza. |
| Mondovi | 27.34 | 694.3 | 29.27 | 743.4 | 35.4 | 1.9 | 89 | WSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 1.425 | 36.2 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.03 | 737.3 | 29.25 | 743.0 | 53.1 | 11.7 | 75 | SW | ..... | ..... | 8 | ..... | 9 | SW | ..... | 1.972 | 50.1 | ..... | Prof. L. Vassallo. |
| Genoa | 29.10 | 739.1 | 29.27 | 743.5 | 53.2 | 11.8 | 72 | SW | 20.6 | 9.2 | ..... | ..... | 8 | SW | ..... | 0.909 | 23.1 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.01 | 736.8 | 29.32 | 744.7 | 53.1 | 11.7 | 74 | SW | ..... | ..... | 6 | ..... | 9 | ..... | ..... | 1.039 | 26.4 | ..... | Prof. P. Pigorini. |
| Florence | 29.13 | 739.9 | 29.39 | 746.5 | 59.0 | 15.0 | 64 | S | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.248 | 6.3 | ..... | Cav. F. Meucci. |
| Leghorn | 29.28 | 743.6 | 29.36 | 745.8 | 57.9 | 14.4 | 74 | S | 23 0 | 10.3 | ..... | ..... | 9 | S | ..... | 0.260 | 6.6 | ..... | Prof. P. Monte. |
| Pesaro | 29.35 | 745.6 | 29.41 | 746.9 | 64.9 | 18.3 | 63 | S | 13.0 | 5.8 | ..... | ..... | 3 | SW | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 27.88 | 708.0 | 29.44 | 747.8 | 58.1 | 14.5 | 48 | SSW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0.280 | 7.1 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.35 | 745.5 | 29.47 | 748.4 | 56.3 | 13.5 | 84 | SSE | ..... | ..... | 6 | ..... | 6 | S | ..... | 0.343 | 8.7 | ..... | Avv. P. Ponticelli. |
| Rome | 29.36 | 745.7 | 29.54 | 750.2 | 62.4 | 16.9 | 60 | S | 15.4 | 6.9 | ..... | ..... | 2 | ..... | ..... | 0.181 | 4.6 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U. | 29.41 | 746 9 | 29.61 | 752.0 | 67.3 | 19.6 | 53 | SW | ..... | ..... | 4 | ..... | 2 | WNW | ..... | 0.047 | 1.2 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 59.5 | 15.3 | 72 | SE | 37.4 | 16.7 | ..... | ..... | 10 | S | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.33 | 745.0 | 29.52 | 749.9 | 59.4 | 15.2 | 66 | W | ..... | ..... | 4 | ..... | 8 | W | ..... | 0.035 | 0.9 | ..... | Prof. A. Pacinotti. |
| Cosenza | 28.73 | 729.7 | 29.62 | 752.4 | 60.8 | 16.0 | 75 | NE | 15.0 | 6.7 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.36 | 744.3 | 29.56 | 750.8 | 63.9 | 17.7 | 46 | ENE | 4.9 | 2.2 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.47 | 748.6 | 29.55 | 750.5 | 60.4 | 15.8 | 83 | NE | ..... | ..... | 2 | ..... | 10 | SW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.47? | 748.6? | 30.037 | 762.7? | 65.8 | 18.8 | 42 | SW | 8.1 | 3.6 | ..... | ..... | 2 | W | ..... | 0.213 | 5.4 | ..... | Prof. F. Brioschi |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

**Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.**

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 29.41 | 747.0 | 29.47 | 748.5 | 47.3 | 8 5 | 61 | WNW | 13.6 | 6.1 | ..... | ..... | 10n | ..... | ..... | 0.012 | 0.30 | Slight rain.. | The Observatory. |
| Tokei (Yeddo) University.. | 29.40 | 746.7 | 29.50 | 749.4 | 46 | 7.8 | 40 | NW | 12 | 5.4 | ..... | ..... | 1ks | ..... | ..... | 0.62 | 15.7 | ..... | Prof. P. V. Veeder. |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

**Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.**

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 66.2 | 19.0 | 24 | N | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Dry fog | L. Castillo, A. E. |
| Guadalajara | 25.05 | 636.1 | 30.11 | 764.8 | 43.2 | 6.2 | 50 | SW | 0.9 | 0.4 | ..... | 0 | 2 | ..... | SW | 0 | 0 | Clear | Prof. L. Perez. |
| Guanajuato | 23.68 | 601.6 | 29.87 | 758 9 | 59.0 | 15.0 | 41 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 57.0? | 14.2 | 60 | SW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico | 23.09 | 586.6 | 30.15 | 765.8 | 50.7 | 10.4 | 51 | Calm | 0 | 0 | ..... | 0 | 2s | ..... | ..... | 0 | 0 | Hazy | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 51.4 | 10.8 | 46 | Calm | 0 | 0 | ..... | 6c | 0 | SW | ..... | 0 | 0 | ½ cloudy | M. V. de Leon, M. E. |
| Puebla | 23.31 | 592 0 | 30.04 | 763.1 | 46.2 | 7.9 | 52 | E | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Dry mist | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 29.82 | 757.4 | 29.83 | 757.7 | 74.3 | 23.5 | 83 | WNW | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 29.87 | 758.6 | 29.89 | 759.3 | 77.0 | 25.0 | 78 | NE | 14.5 | 6.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Dry fog | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 54.5 | 12.5 | 61 | Calm | 0 | 0 | ..... | 0 | 1sk | ..... | ..... | 0 | 0 | Clear | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Spina. [M. M. D. D. |
| Morelia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Tena. F. L. Param. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

**Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.**

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.01 | 736.9 | 29.01 | 736.9 | 38.5 | 3.6 | ..... | N | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.575 | 14.6 | ..... | |
| Groningen | 28.93 | 734.7 | 28.98 | 736.1 | 42.8 | 6.0 | ..... | NE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.197 | 5.0 | ..... | |
| Helder | 29.01 | 736.8 | 29.01 | 736.8 | 37.6 | 3.1 | ..... | N | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0.339 | 8.6 | ..... | |
| Hellevoetsluis | 28.99 | 736.4 | 28.99 | 736.4 | 37.8 | 3 2 | 97 | N | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 28.94 | 735.0 | 28.98 | 736.2 | 45.3 | 7.4 | 85 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.307 | 7.8 | Dull | H. v d Brink. |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.35 | 745.4 | 29.40 | 746.8 | 36.7 | 2.6 | 49 | NW | 5.2 | 2.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.55 | 750.5 | 29.59 | 751.5 | 34.2 | 1.2 | 70 | NE | 7 | 3 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.21 | 741.9 | 29.36 | 745.8 | 27.9 | — 2.3 | 81 | N | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | |
| Tromsö | 29.51 | 749.5 | 29.55 | 750.6 | 25.6 | — 3.6 | 74 | SE | 11 | 5 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.14 | 765.6 | 30.34 | 770.5 | 57.6 | 14.2 | 76 | ESE | 8.7 | 3.9 | ..... | ..... | 3 | ..... | ..... | 0.079 | 2.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.78 | 731.0 | 29.82 | 757.4 | 53.2 | 11.8 | 52 | NW | 19.2 | 8.6 | ..... | ..... | 6 | NW | ..... | 0.236 | 6.0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.11 | 764.7 | 30.19 | 766.9 | 64.2 | 17.9 | 50 | SE | 3.1 | 1.4 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.61 | 752.0 | 29.97 | 761.3 | 49.1 | 9.5 | 69 | NNW | 27.3 | 12.2 | ..... | ..... | 7 | ..... | ..... | 0.299 | 7.6 | Rain & graupel. | The Staff. |
| Ponta Delgada, (Azores) | 30.26 | 768.5 | 30.34 | 770.7 | 61.9 | 16.6 | 56 | ESE | 6.3 | 2.8 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, | | | | | | | | | | | | | | | | | |
| Mozambique, Mozambique | 29.76 | 756.0 | 29.77 | 756.1 | 84.6 | 29.2 | ..... | S | ..... | ..... | 6 | ..... | 4 | ..... | S | 1 | ..... | Blue sky | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Rio Douro, S. 25° 59′, E. 32° 37′ | ..... | ..... | 30.26 | 768.5 | 78.8 | 26.0 | ..... | SSW | ..... | ..... | 1 | ..... | 10 | ..... | SW | 1 | SW | Overcast | J. T. d'Oliveria, Com'd't. |
| Sado, Porto Praya, Cape Verde Islands | 30.02* | 762.5* | 30.03* | 762.8* | 81.5 | 27.5 | ..... | NE | ..... | ..... | 7 | ..... | 1 | ..... | ..... | 3 | N | D. clouds | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.75 | 755.7 | 29.76 | 755.8 | ..... | ..... | ..... | WNW | ..... | ..... | 2 | ..... | 2 | ..... | WNW | 3 | W | Thunder | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreira,dos Amas,Com' |

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 28.81 | 731.7 | 29.21 | 742.0 | 62.1 | 16.7 | 52 | SSE | 22 | 10 | ..... | ..... | 4ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.10 | 739.2 | 29.53 | 750.0 | 39.6 | 4.2 | 77 | SE | 20 | 9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 29.41 | 746 9 | 29.65 | 753.2 | 39.9 | 4.4 | 65 | SE | 11 | 5 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Heavy clouds | Astronomical Obs. |
| St. Petersburg | 29.83 | 757.7 | 29.85 | 758.1 | 37.4 | 3.0 | 56 | ESE | 22 | 10 | ..... | ..... | 9n;ks | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| Kuopio | 29.46 | 748.3 | 29.80 | 756.8 | 30.6 | — 0.8 | 100 | E | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.19 | 741.5 | 29.84 | 757.9 | 37.6 | 3.2 | 71 | SE | 18 | 8 | ..... | ..... | 10ks;c | ..... | ..... | ..... | ..... | Snowing | Ch. Forsten. |
| Nikolaiev | 29.98 | 761.5 | 30.05 | 763.3 | 48.9 | 9.4 | 51 | SSE | 18 | 8 | ..... | ..... | 8cs;n | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Kertch | 30.15 | 765.8 | 30.17 | 766.3 | 45.3 | 7.4 | 85 | S | 9 | 4 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Moscow | 29.63 | 752.6 | 30.21 | 767.2 | 35.1 | 1.7 | 91 | S | 11 | 5 | ..... | ..... | 9s | ..... | ..... | ..... | ..... | Light clouds | Lagorio. |
| Lugan | 29.84 | 757.9 | 30.04 | 763.0 | 59.4 | 15.2 | 41 | ESE | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 30.07 | 763.6 | 30.08 | 764.1 | 38.8 | 3.8 | 54 | S | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Tiflis | 28.56 | 725.3 | 29.99 | 761.8 | 47.5 | 8.6 | 44 | NW | 45 | 20 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Astrakhan | 30.08 | 764.0 | 30.00 | 761.9 | 52.7 | 11.5 | 60 | NNE | 13 | 6 | ..... | ..... | 7cs;ck | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Kasan | 30.09 | 764.3 | 30.37 | 771.4 | 46.4 | 8.0 | 54 | Calm | 0 | 0 | ..... | ..... | 2s | ..... | ..... | Blank | Blank | ..... | Sebastianof. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Ekaterinburg | 29.63 | 752.5 | 30.62 | 777.7 | 34.7 | 1.5 | 46 | SSE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Nukuss | 29.46 | 748.2 | 29.69 | 754.2 | 47.5 | 8.6 | 88 | SSW | 18 | 8 | ..... | ..... | 10k | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.24 | 717.2 | 29.91 | 759.8 | 61.2 | 16.2 | 61 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Barnaul | 29.96 | 761.0 | 30.52 | 775.3 | 22.5 | — 5.3 | 50 | NW | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Yeniseisk | 29.94 | 760.4 | 30.29 | 769.3 | 11.1 | —11.6 | 73 | NW | 7 | 3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Marks. |
| Krotkowo* | 29.83 | 757.6 | 30.31 | 769.8 | 48.6 | 9.2 | 57 | E | 11 | 5 | ..... | ..... | 1s | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 30.06 | 763.4 | 30.20 | 767.0 | 50.7 | 10.4 | 26 | S | 2 | 1 | ..... | ..... | 1k | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Nertchinsk | 27.50 | 698.4 | 29.57 | 751.0 | 36.7 | 2.6 | 57 | SW | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 9.1 | —12.7 | 61 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | ..... | ..... | 29.32 | 744.6 | 52.7 | 11.5 | 46 | WSW | 6.4 | 2.86 | ..... | 0 | 9 | ..... | ..... | 0 | 0 | Almost cov. | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.64 | 752.9 | 29.70 | 754.4 | 48.2 | 9.0 | 80 | NW | 3.6 | 1.61 | ..... | 2 | 6 | N | ..... | 0.618 | 15.7 | Hailing | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.68 | 677.6 | ..... | ..... | 37.4 | 3.0 | 93 | N | 10.4 | 4.66 | ..... | 0 | 7 | ..... | ..... | 0.039 | 1.0 | Clouds | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.41 | 696.1 | 29.65 | 753.0 | 48.4 | 9.1 | 58 | NW | 3.0 | 1.33 | ..... | 0 | 8 | ..... | ..... | 0 | 0 | Cloudy | The Staff. |
| Murcia, Met. Obs'y | 29.45 | 747.9 | 29.60 | 751.8 | 60.4 | 15.8 | 37 | NW | 5.5 | 2.47 | ..... | 4 | 5 | E | ..... | 0.031 | 0.81 | Almost cov. | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.95 | 735.4 | 29.86 | 758.4 | 48.2 | 9.0 | 55 | NNW | 17.1 | 7.64 | ..... | ..... | 5 | ..... | ..... | 0.878 | 22.3 | Cloudy | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.96 | 761.1 | 30.03 | 762.8 | 77.2 | 25.1 | 87 | ESE | 3.6 | 1.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 29.80 | 757.0 | 29.90 | 759.6 | 55.6 | 13.1 | 58 | W | 31.9 | 14.3 | ..... | 0 | 7 | ..... | WNW | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.95 | 760.8 | 30.04 | 763.1 | 79.2 | 26.2 | 82 | SE | 2.2 | 1.00 | ..... | 2cs | 1c | E | E | 0 | 0 | Clear | Leonardo de Tejeda, Chief of Engineers. |

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft. The barometer readings at Barcelona are published as given.

## SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. | | Barometer. Reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. Direction. | Wind. Velocity. | | Wind. Force. | Clouds. Amount. | | Clouds. Direction. | | Rain-fall or melted snow in the past 24 hours. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inches. | Millimeters. | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0-10. | 0-10. | 0-10. | From— | From— | Inches. | Millimeters. | | |
| Haparanda | 29.80 | 756.9 | 29.84 | 757.9 | 19.4 | — 7.0 | ..... | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.72 | 755.0 | 29.78 | 756.3 | 29.8 | — 1.2 | 73 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0.102 | 2.6 | ..... | |
| Hernosand | 29.61 | 752.0 | 29.66 | 753.3 | 27.5 | — 2.5 | 85 | ENE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.028 | 0.7 | ..... | |
| Stockholm | 29.17 | 740.8 | 29.38 | 746.3 | 36.7 | 2.6 | 82 | ENE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.087 | 2.2 | ..... | |
| Wisby | 29.18 | 741.1 | 29.24 | 742.6 | 39.6 | 4.2 | 80 | SSE | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 0.098 | 2.5 | Raining | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.31 | 744.5 | 29.39 | 746.4 | 33.8 | 1.0 | 84 | ESE | 8.8 | 3.7 | ..... | ..... | 10 | ..... | ..... | 0.197 | 5.00 | Snowing | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 27.76 | 705.0 | 29.21 | 742.0 | 43.7 | 6.5 | 71 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.087 | 2.2 | Raining | The Observatory. |
| Zurich | 27.52 | 698.9 | 29.17 | 740.8 | 50.4 | 10.2 | 60 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.185 | 4.7 | Covered | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —19.2 mm.; Thermometer, —3.2 cent.; Relative Humidity, +13 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.00 | 762.0 | 65.1 | 18.4 | 41 | SSW | 6 | 2.5 | ..... | ..... | 8 | ..... | SW | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanidès. |
| Valona | ..... | ..... | 29.69 | 754.1 | 66.7 | 19.3 | ..... | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | A. Bertrand. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.99 | 761.7 | 30.11 | 764.8 | 59.9 | 15.5 | 56 | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.12 | 765.0 | 30.19 | 766.8 | 33.7 | 0.9 | 67 | N | 3 | 1.3 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Dull | Hon. J. Ferguson. |
| Brockville, Ontario | 30.02 | 762.5 | 30.33 | 770.4 | 40 | 4.4 | ..... | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | W. R. Bigg. |
| *Chatham, N B | 30.07 | 763.8 | 30.13 | 765.3 | 33 | 0.6 | 80 | NE | 9 | 4.0 | ..... | ..... | 10s | ..... | N | 0.01 | 0.3 | Cloudy | G. A. Blair. |
| Charlottetown, P. E. Island | 29.97 | 761.2 | 30.01 | 762.2 | 33 | 0.6 | 93 | NE | 18 | 8.0 | ..... | ..... | 10n | ..... | Calm | 1.700 | 43.18 | Light rain | H. J. Cundall, C. E. |
| Cornwall, Ontario | 30.10 | 764.5 | 30.30 | 769.6 | 33.7 | 0.9 | 68 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Bright | James Smith, M. A. |
| Dalhousie, N. B | 30.18 | 766.6 | 30.22 | 767.6 | 33.3 | 0.7 | 69 | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | Gloomy | H. A. Johnson. |
| Esquimault, B. C | 29.93 | 760.2 | 29.98 | 761.5 | 36.1 | 2.3 | 96 | N | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | W. H. Bevis. |
| *Father Point, Quebec | 30.26 | 768.6 | 30.28 | 769.1 | 27 | — 2.8 | 92 | SW | 5 | 2.2 | ..... | 5ck | 2s | W | W | 0 | 0 | Fair | J. McWilliams. |
| Fredericton, N. B | 30.04 | 763.0 | 30.11 | 764.8 | 32.0 | 0.0 | 98 | N | 9 | 4.0 | ..... | ..... | 10n | ..... | ..... | 1.21 | 30.7 | Heavy snow | Prof. Harrison. |
| *Fort Garry Manitoba | 29.16 | 740.7 | 30.01 | 762.2 | 33 | 0.6 | 94 | S | 4 | 1.8 | ..... | 5k | 5n | SW | Calm | 0 | 0 | Cloudy | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 29.07 | 738.4 | 30.22 | 767.6 | 32 | 0.0 | 100 | E | ..... | ..... | 1 | 1c | 0 | W | ..... | 0 | 0 | Clear | James Grant. |
| *Halifax, N. S | 29.65 | 753.1 | 29 78 | 756.4 | 35 | 1.7 | 96 | N | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | 2.485 | 63.12 | Heavy rain | F. Allison, M. A. |
| Hamilton, Ontario | 29.92 | 760.0 | 30.30 | 769.6 | 35.2 | 1.8 | 66 | NE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.27 | 6.9 | Clear | Geo. Dickson, M. A. |
| Heart's Content, N. F | 30.14 | 765.5 | 30.16 | 766.1 | 43 | 6.1 | 100 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast | E. Weedon. |
| *Kingston, Ontario | 29.95 | 760.7 | 30.30 | 769.6 | 35 | 1.7 | 68 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.97 | 761.2 | 30.01 | 762.2 | 31 | — 0.6 | ..... | N | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0.15 | 3.8 | Misty | C. H. Rigby. |
| *Montreal, Quebec | 30.09 | 764.3 | 30.30 | 769.6 | 35 | 1.7 | 58 | NE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.59 | 751.6 | 30.32 | 770.1 | 28 | — 2.2 | 77 | NE | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Rev. R. Mosley. |
| Peterboro, Ontario | 29.54 | 750.3 | 30.31 | 769.9 | 39.2 | 4.0 | 93 | SE | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Bright | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.64 | 750.3 | 30.26 | 768.6 | 31 | — 0.6 | 79 | NE | 4 | 1.8 | ..... | 10c | 0 | ..... | ..... | 0 | 0 | Fair | H. Morgan. |
| Port Hastings, N. S | 29.89 | 759.2 | 29.94 | 760.5 | 36.4 | 2.4 | ..... | E | 6 | 2.7 | ..... | ..... | ..... | ..... | ..... | 1.10 | 27.9 | Raining | Peter Grant. |
| Port Stanley, Ontario | 29.55 | 750.6 | 30.22 | 767.6 | 33 | 0.6 | 80 | E | 8 | 3.6 | ..... | 5k | 0 | W | ..... | 0 | 0 | Fair | M. Payne. |
| *Quebec, Quebec | 29.96 | 761.0 | 30.30 | 769.6 | 26 | — 3.3 | 75 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.89 | 759.2 | 30.37 | 771.4 | 29 | — 1.7 | 83 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | W. H. McIntyre. |
| St. Andrews, N. B | 29.92 | 760.0 | 29.97 | 761.2 | 32 | 0.0 | 98 | NE | 15 | 6.7 | ..... | ..... | 10n | ..... | ..... | 0.25 | 6.3 | Heavy snow | Dr. Gove. |
| St. John, N. B | 29.76 | 755.9 | 29.93 | 760.2 | 31 | — 0.6 | 100 | NW | 18 | 8.0 | ..... | ..... | 10n | ..... | ..... | 2.296 | 58.30 | Heavy snow | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.51 | 749.5 | 30.25 | 768.3 | 35 | 1.7 | 82 | SE | 3 | 1.3 | ..... | 2cs | 0 | ..... | ..... | 0 | 0 | Clear | K. Stewart. |
| Stayner, Ontario | 29.47 | 748.5 | 30.28 | 769.1 | 35 | 1.7 | 66 | SE | 3 | 1.3 | ..... | 2c | 0 | W | ..... | 0 | 0 | Fair | R. J. Cole. |
| Stratford, Ontario | 28.90 | 734.0 | 30.23 | 767.8 | 32.7 | 0.4 | 69 | SE | 8 | 3.6 | ..... | 0 | 2cs | ..... | ..... | 0 | 0 | Clear | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.01 | 762.2 | 30.04 | 763.0 | 33 | 0.6 | 96 | N | 5 | 2.2 | ..... | ..... | 10n | ..... | ..... | 0.34 | 8.6 | Light rain | T. C. Hill. |
| *Toronto, Ontario | 29.89 | 759.2 | 30.29 | 769.4 | 37 | 2.8 | 53 | NE | 7 | 3.1 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair | Magnetic Observatory. |
| Windsor, N. S | 29.76 | 755.9 | 29.86 | 758.4 | 34.0 | 1.1 | 100 | NE | 16 | 7.2 | ..... | ..... | 10n | ..... | ..... | 2.80 | 71.1 | Raining | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 52.5 | 11.4 | ..... | S | ..... | ..... | ..... | 5 | 5n | ..... | ..... | 0.01 | 0.3 | Foggy | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 30.00 | 762.0 | 30.24 | 768.1 | 36 | 2.2 | 61 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Alpena, Michigan | 29.52 | 749.8 | 30.19 | 766.8 | 37 | 2.8 | 54 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Atlantic City, New Jersey | 30.18 | 766.6 | 30.26 | 767.1 | 40 | 4.4 | 73 | N | 16 | 7.2 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear. | |
| Augusta, Georgia | 29.87 | 758.7 | 30.06 | 763.5 | 59 | 15.0 | 76 | NE | 2 | 0.9 | ..... | 2ck | Haze | W | Calm | 0 | 0 | Clear. | |
| Baltimore, Maryland | 30.21 | 767.3 | 30.26 | 768.6 | 42 | 5.6 | 50 | NE | 7 | 3.1 | ..... | 2ck | 0 | NW | ..... | 0 | 0 | Clear | |
| Barnegat, New Jersey | 30.18 | 766.6 | 30.20 | 767.1 | 40 | 4.4 | 64 | NE | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Bismarck, Dakota | 28.02 | 711.7 | 29.88 | 758.9 | 36 | 2.2 | 80 | S | 12 | 5.4 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Boise City, Idaho | 27.09 | 688.1 | 29.97 | 761.2 | 36 | 2.2 | 80 | Calm | 0 | 0 | ..... | 2c | 2s | Calm | Calm | Inap. | Inap. | Fair | |
| Boston, Massachusetts | 29.96 | 761.0 | 30.12 | 765.0 | 40.5 | 4.7 | 45 | NW | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0.06 | 1.5 | Clear. | |
| Brackettville, Texas | 28.82 | 732.0 | 29.87 | 758.7 | 50 | 10.0 | 45 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 28.96 | 735.6 | 29.98 | 761.5 | 36 | 2.2 | 80 | E | 4 | 1.8 | ..... | ..... | 10ks | ..... | E | 0 | 0 | Cloudy | |
| Brownsville, Texas | 29.89 | 759.2 | 29.96 | 761.0 | 65 | 18.3 | 94 | N | 5 | 2.2 | ..... | 0 | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Buffalo, New York | 29.52 | 749.8 | 30.25 | 768.3 | 34 | 1.1 | 90 | NE | 8 | 3.6 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 53 | 11.7 | 73 | Calm | ..... | ..... | 0 | 5ck | 0 | Calm | ..... | 0 | 0 | Fair | |
| Burlington, Vermont | 30.03 | 762.7 | 30.30 | 769.6 | 32 | 0.0 | 69 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Cairo, Illinois | 29.36 | 745.7 | 29.75 | 755.6 | 49 | 9.4 | 85 | SE | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0.51 | 13.0 | Cloudy | |
| Camp Grant, Arizona | 25.17 | 639.3 | 29.97 | 761.2 | 39 | 3.9 | 64 | E | ..... | ..... | 1 | 0 | 5ks | ..... | W | 0 | 0 | Fair | |
| Camp Verde, Arizona | 26.76 | 679.7 | 30.25 | 768.3 | 44 | 6.7 | 76 | N | ..... | ..... | 1 | ..... | 10s | ..... | Calm | 0.18 | 4.6 | Cloudy | |
| Campo, California | 27.30 | 695.7 | 29.96 | 761.0 | 42 | 5.6 | 83 | SW | 1 | 0.4 | ..... | 5cs | 0 | Calm | ..... | 0.03 | 0.8 | Fair | |
| Cape Hatteras, N. Carolina | 30.17 | 766.3 | 30.18 | 766.6 | 52 | 11.1 | 79 | NE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Henry, Virginia | 30.19 | 766.8 | 30.21 | 767.3 | 47 | 8.3 | 77 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 30.14 | 765.5 | 30.15 | 765.8 | 55 | 12.8 | 74 | NE | 18 | 8.0 | ..... | 10ck | 0 | W | ..... | 0 | 0 | Cloudy | |
| Cape May, New Jersey | 30.21 | 767.3 | 30.24 | 768.1 | 41 | 5.0 | 57 | NE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Charleston, South Carolina | 30.05 | 763.3 | 30.12 | 765.0 | 65 | 18.3 | 89 | E | 14 | 6.3 | ..... | 0 | 8s | ..... | E | 0 | 0 | Fair | |
| Cheyenne, Wyoming | 23.85 | 605.8 | 29.79 | 756.7 | 29 | — 1.7 | 89 | NW | 4 | 1.8 | ..... | 0 | 5ks | ..... | NW | Inap. | Inap. | Fair | |
| Chicago, Illinois | 29.14 | 740.1 | 29.84 | 757.9 | 40 | 4.4 | 65 | E | 15 | 6.7 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Cincinnati Ohio | 29.20 | 741.7 | 29.85 | 758.2 | 43 | 6.1 | 67 | E | 7 | 3.1 | ..... | ..... | 10ks | ..... | SW | 0 | 0 | Threatening | |
| Cleveland, Ohio | 29.38 | 746.2 | 30.12 | 765.0 | 37 | 2.8 | 53 | E | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Concho, Texas | 28.04 | 712.2 | 29.74 | 755.4 | 47 | 8.3 | 19 | W | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Corsicana, Texas | 29.44 | 747.8 | 29.91 | 759.7 | 52 | 11.1 | 54 | W | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Davenport, Iowa | 29.11 | 739.4 | 29.75 | 755.6 | 37 | 2.8 | 81 | E | 22 | 9.8 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Heavy snow | |
| Deadwood, Dakota | 25.23 | 640.8 | ..... | ..... | 27 | — 2.8 | 88 | S | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Denison, Texas | 29.04 | 737.6 | 29.83 | 757.7 | 53 | 11.7 | 48 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denver, Colorado | 24.62 | 625.3 | 29.84 | 757 9 | 28 | — 2.2 | 77 | SE | 8 | 3.6 | ..... | 2c | 0 | Calm | ..... | 0.27 | 6.9 | Clear | |
| Detroit, Michigan | 29.41 | 747.0 | 30.10 | 764.5 | 36 | 2.2 | 61 | E | 12 | 5.4 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Dodge City, Kansas | 27.30 | 693 4 | 29.64 | 752.8 | 33 | 0.6 | 89 | N | 16 | 7.2 | ..... | ..... | 10s | ..... | N | 0.15 | 3.8 | Cloudy | |
| Dubuque, Iowa | 29.10 | 739.1 | 29.80 | 756.9 | 37 | 2.8 | 63 | E | 13 | 5.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Duluth, Minnesota | 29.37 | 746.0 | 30.07 | 763.8 | 37 | 2.8 | 71 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Eagle Pass, Texas | 29.26 | 743.2 | 30.00 | 762.0 | 55 | 12.8 | 62 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 29.87 | 758.7 | 29.94 | 760.5 | 32 | 0.0 | 100 | N | 27 | 12.1 | ..... | ..... | 10n | ..... | N | 1.04 | 26.4 | Heavy snow | |
| Erie, Pennsylvania | 29.45 | 748.0 | 30.19 | 766.8 | 38 | 3.3 | 63 | E | 3 | 1.3 | ..... | 8ck | 2s | SW | ..... | 0 | 0 | Cloudy | |
| Escanaba, Michigan | 29.47 | 748.5 | 30.15 | 765.8 | 35 | 1.7 | 70 | E | 10 | 4.5 | ..... | 5c | 0 | E | ..... | 0 | 0 | Fair | |
| Florence, Arizona | 28.32 | 719.3 | 29.92 | 760.0 | 50 | 10.0 | 72 | E | 3 | 1.3 | ..... | 0 | 8s | ..... | W | 0 | 0 | Fair | |
| Fort Bayard, New Mexico | 24.08 | 611.6 | 30.08 | 764.0 | 28 | — 2.2 | 67 | NW | 4 | 1.8 | ..... | 8ck | 0 | ..... | ..... | 0.02 | 0.5 | Cloudy | |
| Fort Craig, New Mexico | 25 47 | 646.9 | ..... | ..... | 32 | 0.0 | 59 | NW | 2 | 0.9 | ..... | 0 | 5s | ..... | Calm | Inap. | Inap. | Fair | |
| Fort Gibson, Indian Ter | 29.21 | 741.9 | 29.74 | 755.4 | 52 | 11.1 | 86 | W | 7 | 3.1 | ..... | ..... | 10s | ..... | W | 0.18 | 4.6 | Cloudy | |
| Fort Griffin, Texas | 28.68 | 728.5 | 29.96 | 761.0 | 46 | 7.8 | 54 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.67 | 753.6 | 29.70 | 754.4 | 6 | —14.4 | 100 | NE | 34 | 15.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Sill, Indian Territory | 28.68 | 728.5 | 29 79 | 756.7 | 46 | 7.8 | 76 | NW | 9 | 4.0 | ..... | ..... | 10s | ..... | W | 0.09 | 2.3 | Cloudy | |
| Galveston, Texas | 29.92 | 760.0 | 29.96 | 761.0 | 63 | 17.2 | 94 | NW | 8 | 3.6 | ..... | 0 | Fog | ..... | NW | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.30 | 744.2 | 29.96 | 761.0 | 37 | 2.8 | 71 | E | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Indianapolis, Indiana | 29.07 | 738.4 | 29.85 | 758.2 | 43 | 6.1 | 59 | E | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Threatening | |
| Indianola, Texas | 29.96 | 761.0 | 29.99 | 761.7 | 70 | 21.1 | 44 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.79 | 731.3 | 29.92 | 760.0 | 49 | 9.4 | 51 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 30.02 | 762.5 | 30.05 | 763.3 | 68 | 20.0 | 84 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.04 | 737.6 | 29.63 | 752.6 | 40 | 4 4 | 100 | E | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.29 | 7.4 | Light rain | |
| Key West, Florida | 29.99 | 761.7 | 30.03 | 762.7 | 78 | 25.6 | 86 | SE | 5 | 2.2 | ..... | 2cs | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Kittyhawk, North Carolina | 30.18 | 766.6 | 30.21 | 767.3 | 49 | 9.4 | 78 | NE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Knoxville, Tennessee | 28.96 | 735.6 | 29.98 | 761.5 | 45 | 7.2 | 76 | NE | 3 | 1.3 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Fair | |
| La Crosse, Wisconsin | 29.09 | 738.9 | 29.84 | 757.9 | 36 | 2.2 | 71 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.08 | 2.0 | Cloudy | |
| La Mesilla, New Mexico | 26.08 | 662.4 | 30.23 | 767.8 | 36 | 2.2 | 70 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Laredo, Texas | 29.58 | 751 3 | 29.93 | 760.2 | 56 | 13.3 | 69 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 28.88 | 733.5 | 29.73 | 755.1 | 37 | 2.8 | 90 | N | 10 | 4.5 | ..... | ..... | 10s | ..... | N | 0.47 | 11 9 | Cloudy | |
| Los Angeles, California | 29.68 | 753.9 | 30.03 | 762.7 | 59 | 10.0 | 86 | N | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0.07 | 1.8 | Cloudy | |
| Louisville, Kentucky | 29.23 | 742.4 | 29.79 | 756.7 | 43 | 6.1 | 92 | E | 11 | 4.9 | ..... | ..... | 10n | ..... | SE | 0.44 | 11.2 | Heavy rain | |
| Lynchburg, Virginia | 29.52 | 749.8 | 30.22 | 767.6 | 45 | 7.2 | 46 | NE | 6 | 2.7 | ..... | 0 | 8ks | ..... | Calm | 0 | 0 | Cloudy | |
| Marquette, Michigan | 29.43 | 747.5 | 30.16 | 766.1 | 31 | — 0.6 | 79 | NW | 4 | 1.8 | ..... | 2c | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mason, Texas | 28.34 | 719.8 | 30.10 | 764.5 | 51 | 12.2 | 32 | W | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.47 | 748.5 | 29.78 | 756.4 | 56 | 13.3 | 81 | S | 4 | 1.8 | ..... | 0 | 5s | ..... | SW | 0.07 | 1.8 | Fair | |
| Milwaukee, Wisconsin | 29.19 | 741.4 | 29.91 | 759.7 | 38 | 3.3 | 72 | NE | 27 | 12.1 | ..... | 10cs | 0 | ..... | ..... | 0 | 0 | Cloudy | |
| Mobile, Alabama | 29.88 | 758.9 | 29.93 | 760.2 | 72.5 | 22 5 | 95 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | SW | Inap. | Inap. | Cloudy | |
| Montgomery, Alabama | 29.68 | 753 9 | 29.91 | 759.7 | 63.5 | 17.5 | 69 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Threatening | |
| Morgantown, West Virginia | 29.02 | 737.1 | 30.10 | 764.5 | 41 | 5.0 | 57 | E | 8 | 3.6 | ..... | 8c | 0 | SW | ..... | 0 | 0 | Fair | |
| Mt. Washington, N. H. | 23.68 | 601.5 | 30.04 | 763.0 | 13 | —10.6 | 62 | NE | 36 | 16.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Nashville, Tennessee | 29.22 | 742.2 | 29.75 | 755.6 | 56 | 13.3 | 75 | S | 7 | 3.1 | ..... | ..... | 10s | ..... | S | 0.07 | 1.8 | Cloudy | |
| New Haven, Connecticut | 30.07 | 763.8 | 30.19 | 766.8 | 41 | 5.0 | 57 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | |
| New London, Connecticut | 30.11 | 764.8 | 30.16 | 766.1 | 45 | 7.2 | 46 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| New Orleans, Louisiana | 29.86 | 758.4 | 29.92 | 760.0 | 71 | 21.7 | 90 | SW | 4 | 1.8 | ..... | 2k | 8s | SW | SW | 0.05 | 1.3 | Clearing | |
| Newport, Rhode Island | 30.06 | 763.5 | 30.12 | 765.0 | 41 | 5.0 | 65 | NW | 15 | 6.7 | ..... | 0 | 0 | ..... | ..... | 0.39 | 9.9 | Clear | |
| New York, New York | 30.04 | 763.0 | 30.22 | 767.6 | 42 | 5.6 | 49 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear. | |
| Norfolk, Virginia | 30.17 | 766.3 | 30.23 | 767.8 | 46 | 7.8 | 69 | NE | 7 | 3.1 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Clear | |
| North Platte, Nebraska | 27.00 | 685.8 | 29.84 | 752.8 | 31 | — 0.6 | 89 | E | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.28 | 7.1 | Cloudy | |
| Olympia, Washington Ter. | 29.96 | 761.0 | 30.00 | 762.0 | 37 | 2.8 | 100 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.05 | 1.3 | Cloudy | |
| Omaha, Nebraska | 28.68 | 728.5 | 29.78 | 756.4 | 34 | 1.1 | 90 | N | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.58 | 14.7 | Light snow | |
| Oswego, New York | 29.98 | 761.5 | 30.32 | 770.1 | 40 | 4.4 | 65 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Pembina, Dakota | 29.11 | 739 4 | 29.95 | 761.0 | 33.5 | 0.8 | 70 | SE | 6 | 2.7 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Philadelphia, Pennsylvania | 30.19 | 766.8 | 30.24 | 768.1 | 39 | 3.9 | 55 | NE | 13 | 5.8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Phœnix, Arizona | 28.83 | 732 3 | 30.64 | 778.2 | 57 | 13.9 | 58 | S | ..... | ..... | 3 | 5cs | 0 | Calm | ..... | 0.03 | 0.8 | Fair | |
| Pike's Peak, Colorado | 17.56 | 446.0 | 29.77 | 756.1 | 4 | —15.6 | 74 | N | 23 | 10.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pioche, Nevada | 23.94 | 608.1 | 29.71 | 754.6 | 33 | 0.6 | 89 | S | 9 | 4.0 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light snow | |
| Pittsburg, Pennsylvania | 29 30 | 744.2 | 30.14 | 765.5 | 36 | 2.2 | 61 | E | 8 | 3.6 | ..... | 8c | 2s | W | Calm | 0 | 0 | Cloudy | |
| Port Huron, Michigan | 29.46 | 748.3 | 30.15 | 765.8 | 35 | 1.7 | 70 | E | 8 | 3.6 | ..... | ..... | 10ks | ..... | E | 0 | 0 | Cloudy | |
| Portland, Maine | 30.04 | 763.0 | 30.09 | 764.3 | 40 | 4.4 | 48 | N | 24 | 10.7 | ..... | 1k | Haze | Calm | ..... | 0 | 0 | Clear | |
| Portland, Oregon | 29.93 | 760.2 | 30.03 | 762.7 | 45 | 7.2 | 92 | NW | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.15 | 3.8 | Light rain | |
| Prescott, Arizona | 24.69 | 627.1 | 30.05 | 763.3 | 36 | 2.2 | 80 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Punta Rassa, Florida | 30.02 | 762.5 | 30.04 | 763.0 | 75 | 23.9 | 86 | E | 12 | 5.4 | ..... | 2k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Red Bluff, California | 29.69 | 754.1 | 30.06 | 763.5 | 48 | 8.9 | 92 | SE | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0.47 | 11.9 | Cloudy | |
| Rochester, New York | 29.63 | 752.6 | 30.27 | 768.8 | 38 | 3.3 | 72 | SW | 1 | 0.4 | ..... | 5c | Fog | Calm | Calm | 0 | 0 | Fair | |

## UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. (1—10. | Clouds. Amount. Up'er (1—10. | Clouds. Amount. Low'r (1—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roseburg, Oregon | 29.45 | 748.0 | 30.03 | 762.7 | 46.5 | 8.1 | 92 | SW | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.21 | 5.3 | Light rain... | |
| Sacramento, California | 29.96 | 761.0 | 30.04 | 763.0 | 50 | 10.0 | 93 | SE | 4 | 1.8 | ..... | ..... | 10ks | ..... | S | 0.06 | 1.5 | Cloudy..... | |
| St. Louis, Missouri | 29.13 | 739.9 | 29.69 | 754.1 | 47 | 8.3 | 85 | SE | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.32 | 8.1 | Light rain... | |
| St. Marks, Florida | 30.00 | 762.0 | 30.02 | 762.5 | 59 | 15.0 | 94 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | W | 0 | 0 | Fair ..... | |
| St. Paul, Minnesota | 29.09 | 738.9 | 29.93 | 760.2 | 37 | 2.8 | 62 | E | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light snow.. | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.57 | 649.5 | 29.90 | 759.4 | 39 | 3.9 | 91 | SE | 1 | 0.4 | ..... | ..... | 10n | ..... | Calm | 0.36 | 9.1 | Light rain .. | |
| San Antonio, Texas | 29.30 | 744.2 | 29.88 | 758.9 | 55 | 12.8 | 50 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| San Diego, California | 30.00 | 762.0 | 30.07 | 763.8 | 53 | 11.7 | 86 | E | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Sandusky, Ohio | 29.40 | 746.7 | 30.09 | 764.3 | 40 | 4.4 | 65 | E | 20 | 8.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy ..... | |
| Sandy Hook, New Jersey | 29.19 | 766.8 | 30.21 | 767.3 | 41 | 5.0 | 74 | N | 14 | 6.3 | ..... | 0 | Haze | ..... | ..... | 0.01 | 0.3 | Clear..... | |
| San Francisco, California | 29.99 | 761.7 | 30.06 | 763.5 | 52 | 11.1 | 73 | NW | 6 | 2.7 | ..... | Haze | 2s | Calm | Calm | 0.33 | 8.4 | Fair..... | |
| Santa Fé, New Mexico | 23.17 | 588.5 | 29.71 | 754.6 | 27 | — 2.8 | 63 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear ..... | |
| Savannah, Georgia | 29.96 | 761.0 | 30.06 | 763.5 | 65 | 18.3 | 84 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Shreveport, Louisiana | 29.67 | 753.6 | 29.89 | 759.2 | 63 | 17.2 | 62 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Smithville, North Carolina | 30.13 | 765.3 | 30.16 | 766.1 | 57 | 13.9 | 69 | NE | 13 | 5.8 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy..... | |
| Springfield, Massachusetts | 29.98 | 761.5 | 30.11 | 764.8 | 41 | 5.0 | 49 | N | 7 | 3.1 | ..... | 6 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Stockton, Texas | 26.98 | 685.3 | 29.98 | 761.5 | 42 | 5.6 | 42 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Thatcher's Island, Mass | 30.04 | 763.0 | 30.10 | 764.5 | 39 | 3.9 | 64 | N | 28 | 12.5 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear ..... | |
| Toledo, Ohio, | 29.33 | 745.0 | 30.02 | 762.5 | 39 | 3.9 | 64 | SE | 14 | 6.3 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy..... | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 45 | 7.2 | 85 | SW | ..... | ..... | 1 | 8k | 0 | SW | ..... | 0.08 | 2.0 | Fair ..... | |
| Tybee Island, Georgia | 30.02 | 762.5 | 30.05 | 763.3 | 65 | 18.3 | 90 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Umatilla, Oregon | 29.65 | 753.1 | ..... | ..... | 34 | 1.1 | 90 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Vicksburg, Mississippi | 29.64 | 752.8 | 29.89 | 759.2 | 66 | 18.9 | 89 | SW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Virginia City, Montana | 24.09 | 611.9 | 29.57 | 751.1 | 35 | 1.7 | 70 | S | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Visalia, California | 29.68 | 753.9 | 30.06 | 763.5 | 49 | 9.4 | 85 | E | 1 | 0.4 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair ..... | |
| Washington, D. C. | 30.16 | 766.1 | 30.28 | 769.1 | 39 | 3.9 | 64 | N | 4 | 1.8 | ..... | 8ck | 2ks | W | W | 0 | 0 | Cloudy..... | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 44 | 6.7 | 68 | SW | ..... | ..... | 3 | 2k | 5ks | Calm | Calm | 0 | 0 | Fair..... | |
| Wilmington, N. Carolina | 30.08 | 764.0 | 30.16 | 766.1 | 54 | 12.2 | 68 | E | 8 | 3.6 | ..... | 8k | 0 | S | ..... | 0 | 0 | Fair ..... | |
| Winnemucca, Nevada | 25.55 | 649.0 | 29.91 | 759.7 | 35 | 1.7 | 90 | S | 4 | 1.8 | ..... | ..... | 10ks | ..... | Calm | Inap. | Inap. | Cloudy ..... | |
| Wood's Holl, Mass | 30.01 | 762.2 | 30.07 | 763.8 | 43 | 6.1 | 58 | NW | 16 | 7.2 | ..... | Haze | 0 | ..... | ..... | 0.45 | 11.4 | Clear ..... | |
| Yankton, Dakota | 28.63 | 727.2 | 29.95 | 760.7 | 33 | 0.6 | 89 | N | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.23 | 5.8 | Light snow.. | |
| Yuma, Arizona | 29.82 | 757.4 | 29.98 | 761.5 | 57 | 13.9 | 62 | NW | 5 | 2.2 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy..... | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 29.88 | 758.9 | 29.93 | 760.2 | 12.5 | —10.8 | 90 | E | 6 | 2.7 | ..... | 2c | 6s | S | ..... | 0.01 | 0.3 | Snowing..... | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 29.98 | 761.5 | 30.00 | 762.0 | 79 | 26.1 | 82 | SE | 2.4 | 1.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.10 | 764.5 | 30.11 | 764.8 | 79 | 26.1 | 86 | Calm | 0 | 0 | ..... | 2ck | 0 | Calm | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.92 | 760.0 | 30.00 | 762.0 | 83 | 28.3 | ..... | NE | 4 | 1.8 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair..... | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | ..... | ..... | 30.01 | 762.2 | 83 | 28.3 | 79 | N | ..... | ..... | 3 | 3c | 5k | NE | ..... | 0.100 | 2.54 | Fair..... | C. J. Hering. |
| Batavia, Dutch Guiana, S. A. | 30.07 | 763.8 | 30.08 | 764.0 | 79.7 | 26.5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy..... | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.23 | 640.8 | ..... | ..... | 68.5 | 20.3 | 83 | Calm | ..... | ..... | 0 | 2k | 2ks | ..... | ..... | 0.01 | 0.3 | ..... | Thomas Herran |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,186 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,300 (?) ft., or 396.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fe, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal | 30.[illegible] | 762.5 | 50 | 10.0 | [illegible] | 8.9 | 92 | WNW | 12 | 5.4 | ..... | ..... | 5s | ..... | W | 0.17 | 4.3 | ..... | ..... | Clearing | |
| Navy Yard, Pensacola, Fla | [illegible] | 763.5 | 71 | 21.7 | [illegible] | 21.7 | 99 | SSE | 12 | 5.4 | ..... | ..... | 8 | ..... | W | 0 | 0 | ..... | ..... | Cloudy | |
| Navy Yard, Portsmouth, N.H | 30.[illegible] | 766.6 | 71 | 21.7 | [illegible] | 4.4 | 48 | WNW | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Naval Hospital, Yokohama, Japan | 29.[illegible]* | 48.0* | 57.8 | 14.3 | 40.2 | 9.6 | 50 | NNE | ..... | ..... | 1 | ..... | 4ks | ..... | SW | 1.08 | 27.4 | ..... | ..... | Clearing | |
| Adams. Panama | 29.[illegible] | 61.2 | 79 | 26.1 | 80 | 26.7 | 87 | NNW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Misty | |
| Alliance. N. 37° 42′, E. 17° 50′ | 29.0[illegible]‡ | 734.1‡ | ..... | ..... | 60 | 15.6 | 94 | S | ..... | ..... | 5–6 | ..... | 10 | ..... | S | ..... | ..... | ..... | ..... | Squally | |
| Ashuelot. Shanghai, China | 30.34* | 770.6* | 50 | 10.0 | 47 | 8.3 | 100 | N | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | D. clouds | |
| Canonicus, New Orleans, La | 29.93 | 760.2 | 52 | 11.1 | 71 | 21.7 | 90 | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Rainy | |
| Colorado, New York, N. Y. | 30.20‡ | 767.1‡ | ..... | ..... | 44 | 6.7 | 45 | NNW | 5 | 2.2 | ..... | ..... | 2 | ..... | NNW | 0.01 | 0.3 | ..... | ..... | Hazy | |
| Constitution, N. 48° 45′ W. 6° 17′ | 29.64‡ | 752.8‡ | ..... | ..... | 40 | 4.4 | 82 | NNW | ..... | ..... | 7 | ..... | 10 | ..... | N | ..... | ..... | Heavy | NNE | Rain & hail | |
| Despatch, Constantinople, Turkey | 30.09 | 764.3 | 70 | 21.1 | 57 | 13.9 | 69 | S | ..... | ..... | 2 | ..... | 5 | ..... | Calm | ..... | ..... | Smooth | ..... | Fair | |
| Enterprise, N. 29° 07′, W. 87° 51′ | 29.96‡ | 761.0‡ | ..... | ..... | 74 | 23.3 | 95 | SSE | ..... | ..... | 2 | ..... | 2 | ..... | S | ..... | ..... | Smooth | ..... | Fair | |
| Franklin, Norfolk, Va | 30.21‡ | 767.3‡ | ..... | ..... | 48 | 8.9 | 63 | NNE | 3 | 1.3 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | D. clouds | |
| Gettysburg Valetta, Malta | 29.75‡ | 755.6‡ | ..... | ..... | 70 | 21.1 | ?? | N | ..... | ..... | 1 | ..... | 8 | ..... | Calm | Blank | Blank | ..... | ..... | Cloudy | |
| Guard, Porto Grande, Cape Verde Islands | 30.05 | 763.3 | 74 | 23.3 | 73 | 22.8 | 76 | NE | ..... | ..... | 2 | ..... | 2 | ..... | NE | ..... | ..... | ..... | ..... | Clear | |
| Marion, Vourla Bay, Turkey | 30.05 | 763.3 | 62 | 16.7 | 68 | 20.0 | 42 | S | ..... | ..... | 2 | ..... | 10 | ..... | Calm | 0 | 0 | Smooth | S | Cloudy | |
| Michigan, Erie, Pa | 29.75 | 755.6 | 85 | 29.4 | 47 | 8.3 | 77 | E | ..... | ..... | 1 | ..... | 8 | ..... | E | ..... | ..... | ..... | ..... | Cloudy | |
| Monongahela, N. 23° 09′, E. 116° 53′ | 30.14* | 765.5* | 62 | 16.7 | 62 | 16.7 | 83 | NE | ..... | ..... | 7–8 | ..... | 10 | ..... | ..... | Mod'ate | Mod'ate | Rough | NE | Hailing | |
| New Hampshire, Port Royal, S. C | 30.27 | 768 8 | 70 | 21.1 | 67 | 19.4 | 84 | E | 3 | 1.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Omaha, N. 17° 00′, W. 63° 30′ | 30.12* | 765.0* | 82 | 27.8 | 82 | 27.8 | 67 | NE | 2 | 0.9 | ..... | ..... | 4 | ..... | E | 0 | 0 | Smooth | ..... | Bright | |
| Onward, Callao, Peru | 29.98† | 761.5† | ..... | ..... | 74 | 23.3 | 90 | SE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Long | W | Misty | |
| Ossipee, N. 28° 10′, W. 91° 07′ | 29.98‡ | 761.5‡ | ..... | ..... | 72 | 22.2 | 100 | NNE | ..... | ..... | 1 | ..... | 10 | ..... | SE | ..... | ..... | Smooth | ENE | Cloudy | |
| Palos, Shanghai, China | 30.42* | 772.7* | 57 | 13.9 | 45 | 7.2 | 76 | NNE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast | |
| Pensacola, Honolulu, H. I | 30.28 | 769.1 | 75 | 23.9 | 72 | 22.2 | 80 | NE | 1 | 0.4 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Plymouth. Norfolk, Va | 30.21‡ | 767.3‡ | ..... | ..... | 48 | 8.9 | 70 | ENE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Powhatan, Norfolk, Va | 30.26‡ | 768.6‡ | ..... | ..... | 47 | 8.3 | 100 | NE | 3.6 | 1.6 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Smooth | ..... | Pleasant | |
| Ranger. Amoy, China | 30.29* | 769.4* | ..... | ..... | 59 | 15.0 | 82 | NNE | ..... | ..... | 1–5 | ..... | 0? | ..... | NNE | ..... | ..... | ..... | ..... | Drizzling? | |
| Rio Bravo, Brownsville, Texas | ..... | ..... | ..... | ..... | 64 | 17.8 | 100 | NNW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Foggy | |
| Santee. Annapolis, Md | 30.31* | 769.9* | 54 | 12.2 | 42 | 5.6 | 50 | NE | ..... | ..... | 1 | ..... | 2 | ..... | NW | 0 | 0 | ..... | ..... | Clear | |
| Saratoga, Washington, D. C | 30.13* | 765.3* | ..... | ..... | 56 | 13.3 | 87 | NNE | ..... | ..... | 2 | ..... | 5 | ..... | Calm | 0 | 0 | ..... | ..... | Clear | |
| St. Louis, League Island, Pa | 30.14 | 765.5 | 65 | 18.3 | 42 | 5.6 | 74 | N | 5 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Misty | |
| Supply, Havre, France | 29.35 | 745.5 | 48 | 8.9 | 42 | 5.6 | 66 | NNE | ..... | ..... | 4 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Cloudy | |
| Swatara, Aspinwall | 30.01* | 762 2* | ..... | ..... | 82 | 27.8 | 83 | N | ..... | ..... | 3 | ..... | 8 | ..... | N&E | ..... | ..... | ..... | ..... | D. clouds | |
| Tennessee, N. 7° 0′ E. 79° 33′ | 29.88* | 758.9* | 87 | 30.6 | 86 | 30.0 | 76 | WNW | 6 | 2.7 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | Slight | WSW | D. clouds | |
| Trenton, Piraeus, Greece | 30.06‡ | 763.5‡ | ..... | ..... | 61 | 16.1 | 88 | SE | 2 | 0.9 | ..... | ..... | 10 | ..... | SE | 0 | 0 | Smooth | ..... | Hazy | |
| Tuscarora, N. 24° 15′ 31″ W. 110° 20′ 47″ | 30.04 | 763.0 | 66 | 18.9 | 65 | 18.3 | 73 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear | |
| Vandalia, N. 38° 35′, E. 13° 06′ | 29.56‡ | 750.8‡ | ..... | ..... | 64 | 17.8 | 73 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Long | NNW | Hazy | |
| Wabash, Boston, Mass | 30.09‡ | 764.3‡ | ..... | ..... | 40 | 4.4 | 82 | NW | 11 | 4.9 | ..... | ..... | 0 | ..... | ..... | 0.04 | 1.0 | ..... | ..... | Clear | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Panama, Esquimault, B. C. | | | 30.11* | 764.8* | | | | W | | | 1 | | 0 | | | | | Frosty | Capt. Seabury. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, N. 26° 21′, E. 123° 04′ | | | | | 59 | 15.0 | | NNE | | | 8 | | 8 | | N | Mod'ate | NE | D. clouds | Capt. Maury. |
| S. S. Colima, N. 7° 11′, W. 80° 58′ | | | 29.94† | 760 5† | 84 | 28.9 | ?? | N | | | 4 | | 7 | | SE | Small | N | Misty | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

**WHITE STAR LINE MARINE SERIES.**

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, N. 50° 33′, W 22° 35′ | | | 30.25† | 768.3† | 52 | 11.1 | 100 | W | | | 3 | | 10k | | WNW | High | NE | Fair | Capt. W. H. Thompson |
| S. S. Celtic, N. 40° 55′, W. 62° 47′ | | | 29.66† | 753.4† | 56 | 13.3 | 24 | SW | | | 6 | | 10 | Calm | | Strong sea, | SW | Raining | Capt. B. Gleadell. |
| S. S. Germanic, N. 40° 30′, W. 70° 50′ | | | 30.05† | 763.3† | 42 | 5.6 | ?? | NNW | | | 5 | | 0 | | | None | | Blue sky | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Aneroid.

**OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.**

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, N. 40° 3′, W. 173° 42′ | | | 30.03* | 762.7* | | | | WNW | | | 6 | | Heavy | | WNW | Mod'ate | WNW | Hailing | Capt. John Metcalf. |
| S. S. Gaelic, Hong-Kong, China | | | 29.97† | 761.2† | 72 | 22.2 | ?? | Var. | | | 3 | | n | | | Smooth | NE | Squally | Capt. W. H. Kidley |
| S. S. Oceanic, N. 37° 30′, W. 171° 47′ | | | 29.40 | 746.7 | 45 | 7.2 | 84 | WNW | | | 6 | | 8 | | W | Heavy | | Squally | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

**NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.**

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg, N. 39° 22′, W. 29° 35′ | | | 30.24 | 768.1 | 62.0 | 16.7 | 77 | ENE | | | 4 | | c | | S | High | NNE | Rain-squalls | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | Character | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois, N. 50° 03′, W. 24° 53′ | | | 30.28* | 769.1* | 54 | 12.2 | 100 | WSW | | | 3 | | 8 | | W | Mod'ate | NE | D. clouds | Captain Shackelford. |
| S. S. Indiana, Liverpool | | | 29.60† | 751.8† | 51 | 10.6 | 86 | N | | | 3 | | 2 | | W | | | Clear | Captain Sargent. |
| S. S. Ohio, Philadelphia, Pa | | | 30.22 | 767.6 | 43 | 6.1 | 75 | NW | | | 2 | | 0 | | | | | Clear | Captain Morrison. |
| S. S. Pennsylvania | | | | | | | | | | | | | | | | | | | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid. †Aneroid; unreliable, corrected for elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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**ALLAN LINE MARINE SERIES.**

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| S. S. Scandinavian, N. 54° 44′, W. 12° 35′ | | | 29.73 | 755.1 | 44 | 6.7 | | NNE | | | 6 | | 7 | | NNE | High confused | NNE | Snow-show's | Capt. W. Richardson. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.)**

Furnished by the coöperation of the Observer named.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller Crisfield, Md. | | | 30.11 | 764.8 | 42 | 5.6 | 74 | NE | 6 | 2.7 | | | 2c | | | | | Clear | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.59 | 751.6 | 10 | —12.2 | 94 | Calm | 0 | 0 | | 8cs | 2ks | Calm | SE | | | Clearing | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assd.) Chief Signal Officer. U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON MARCH 31, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | | | 30.17 | 766.4 | 61.0 | 16.1 | | NE | | | 6 | | 1 | | | 0 | 0 | Very fair | Dr. Ollive. |
| Nemours | | | 30.09 | 764.3 | 60.1 | 15.6 | 66 | NW | | | 5 | | 2 | | | 0 | 0 | Fair | Michel. |
| Algiers | | | 29.87 | 758.7 | 54.3 | 12.4 | 61 | NNW | | | 6 | | 2 | | | 0.059 | 1.5 | Fair | Towiliere. |
| La Calle | | | 29.83 | 757.7 | 53.2 | 11.8 | 69 | NW | | | 7 | | 6 | | | 0.35 | 9. | Cloudy | Boulangeot. |
| Tunis | | | 29.78 | 756.3 | 59.4 | 15.2 | 64 | W | | | 6 | | 3 | | | 0.886 | 22.5 | Pretty fair. | Jacques. |
| Sfax | | | 29.92 | 760.0 | 62.6 | 17.0 | | ESE | | | 6 | | 9 | | | 0.118 | 3.0 | Covered | Gau. |
| Saida | | | 30.07 | 763.6 | 64.4 | 18.0 | 75 | ENE | | | 4 | | 0 | | | 0 | 0 | Clear | Herbin. |
| Tebessa | | | 29.80 | 756.8 | | | | W | | | 5 | | 7 | | | 0 | 0 | Very cloudy | Bourgeois. |
| Geriville | | | 29.88 | 759.0 | 53.2 | 11.8 | 86 | W | | | 7 | | 6 | | | 0 | 0 | Cloudy | Lemaillot. |
| Laghouat | | | 30.06 | 763.4 | 51.8 | 11.0 | 52 | W | | | 5 | | 5 | | | 0 | 0 | Cloudy | Guyot. |
| Biskra | | | 29.96 | 761.0 | 69.1 | 20.6 | 59 | NW | | | 5 | | 2 | | | 0 | 0 | Fair | Chanvaux. |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 899? meters, or 2,949.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,390? m.; or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 28.87 | 733.4 | 29.42 | 747.2 | 51.4 | 10.8 | 65 | SW | | | 2 | | 10 | | | 0.047 | 1.2 | | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 28.68 | 728.5 | 29.44 | 747.8 | 51.8 | 11.0 | 68 | WSW | | | 2 | | 10 | | | 0 | 0 | | Dr. Wierzbiski. |
| Eperies | 28.56 | 725.5 | 29.42 | 747.2 | 57.6 | 14.2 | 57 | S | | | 3 | | 10k;s | | N | 0 | 0 | | Julius Mikolik. |
| Gratz | 28.15 | 715.1 | 29.38 | 746.2 | 54.3 | 12.4 | 47 | WNW | | | 2 | | 9 | | | 0.035 | 0.90 | | Andreas Rospini. |
| Hermannstadt | 28.03 | 712.0 | 29.37 | 746.1 | 69.6 | 20.9 | 28 | SSE | | | 3 | | 5 | | | 0 | 0 | | Prof. Reissenberg |
| Kremsmünster | 28.12 | 714.2 | 29.46 | 748.2 | 45.3 | 7.4 | 53 | W | | | 3 | | 8 | | | 0 | 0 | | Prof. C. Wagner |
| Lemberg | 28.41 | 721.5 | 29.36 | 745.7 | 59.0 | 15.0 | 66 | S | | | 2 | | 8 | | | Blank | Blank | | Dr. T. Stanecki. |
| Pola | 29.33 | 744.9 | 29.44 | 747.7 | 56.5 | 13.6 | 58 | SSE | | | 1 | | 9ks | | | 0.295 | 7.5 | | I.R.Hydrographic Office |
| Szathmar | 28.99 | 736.3 | 29.43 | 747.6 | 64.6 | 18.1 | 44 | W | | | 4 | | 8 | | | 0.138 | 3.5 | Thunder-storm | Johann Tamas, S. J. |
| Szegedin | 29.17 | 740.8 | 29.44 | 747.8 | 55.8 | 13.2 | 57 | S | | | 2 | | 10 | | | 0 | 0 | | Karl Stancel. |
| Trieste | 29.38 | 746.3 | 29.48 | 748.9 | 50.2 | 10.1 | 79 | SE | | | 1 | | 2 | | | 0.425 | 10.8 | Raining | P. Busin. |
| Vienna | 28.74 | 729.9 | 29.45 | 747.9 | 50.4 | 10 2 | 37 | W | | | 4 | | 9 | | | 0 | 0 | | I. R. Central Met. Obs'y. |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.03 | 712.0 | 29.56 | 750.7 | 39.7 | 4.3 | 75 | SW | | | 3 | | 8 | | | 0.031 | 0.8 | | Prof. M. Passau. |
| Brussels | 29.33 | 745.0 | 29.49 | 749.1 | 44.2 | 6.8 | 59 | W | | | 2 | | 7 | | W;WSW | 0.047 | 1.2 | | Royal Observatory. |
| Furnes | 29.49 | 749.0 | 29.51 | 749.6 | 41.5 | 5.3 | 67 | W | | | 2 | | 8 | | | 0.429 | 10.9 | | M. E. de Cae. |
| Maeseyck | 29.35 | 745.4 | 29.47 | 748.6 | 44.1 | 6.7 | 78 | W | | | 2 | | 8 | | | 0 | 0 | | M. Pierrot. |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E. Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.03 | 737.3 | 29.13 | 739.9 | 33.2 | 0.7 | ..... | W | 19 | 8.5 | ..... | ..... | 6 | ..... | ..... | 0.120 | 3.05 | D. clouds.... | W. Buswell. |
| Ardrossan | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.38 | 746.2 | 35.2 | 1.8 | ..... | N | 11 | 4.9 | ..... | ..... | ..... | ..... | ..... | Blank | Blank | ..... | S. Cail, for Dr. Robinson. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.28 | 743.7 | 40.0 | 4.4 | ..... | WSW | 26 | 11.6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 29.43 | 747.5 | 41.7 | 5.4 | ..... | NNW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling..... | J. Dreyer. |
| Bradford, Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.01 | 0.3 | ..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.96 | 761.0 | 29.99 | 761.7 | 83.5 | 28.6 | ..... | NE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.42 | 747.3 | 42.0 | 5.6 | ..... | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast..... | H. Todd. [H. O. |
| Cardington | ..... | ..... | 29.42 | 747.3 | 44.6 | 7.0 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John McLaren. |
| Chatham, School M. E. | 29.25 | 742.9 | 29.38 | 746.2 | 40.2 | 4.6 | ..... | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | Blank | Blank | Blue sky.... | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.06 | 712.7 | 29.56 | 750.8 | 35.0 | 1.7 | ..... | NW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | Heavy snow | Alexander Watt. |
| Donaghadee | 29.31 | 744.5 | 29.34 | 745.2 | 39 | 3.9 | ..... | NW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 29.41 | 747.8 | 29.47 | 748.5 | 42 | 5.6 | ..... | W | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | Snowing..... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.30 | 744.2 | 39.4 | 4.1 | ..... | NNW | 5.4 | 2.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Thomas Mackereth. |
| Falmouth, Observatory | 29.32 | 744.7 | 29.55 | 750.6 | 48.5 | 9.2 | ..... | WSW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff. |
| Fort Napier, (Natal) | 27.92 | 709.2 | 30.13 | 765.3 | 79.0 | 26.1 | ..... | E | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.66 | 753.4 | 29.89 | 759.2 | 89 | 31.7 | ..... | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | |
| Galway, Queen's College | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.05 | 763.3 | 30.11 | 764.8 | 57.5 | 14.2 | ..... | W | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | Corpl. C. Aitken, A. H. C. |
| Glasgow, Observatory | 29.02 | 737.1 | 29.22 | 742.2 | 38.2 | 3.4 | ..... | WNW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | Blue sky..... | D. G. Maclean. |
| Great Yarmouth | 29.37 | 746.0 | 29.38 | 746.2 | 42 | 5.6 | ..... | W | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | Misty..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.30 | 744.2 | 29.47 | 748.5 | 44.3 | 6.8 | ..... | WSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast..... | The Staff, for G. B. Airy. |
| Guernsey | 29.36 | 745.7 | 29.59 | 751.6 | 46.5 | 8.1 | ..... | WSW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | Blank | Blank | D. clouds.... | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 29.58 | 751.3 | 49 | 9.4 | ..... | SW | ..... | ..... | 4 | ..... | 3c | ..... | ..... | 0.16 | 4.1 | Fine..... | M. P. Moyle. |
| Holyhead | 29.31 | 744.5 | 29.36 | 745.7 | 43 | 6.1 | ..... | W | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | John Tilston. |
| Jersey | 29.34 | 745.2 | 29.64 | 752.8 | 43.4 | 6.3 | ..... | N | ..... | ..... | 5 | ..... | 8 | ..... | ..... | Blank | Blank | Gloomy..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 29.48 | 748.8 | 42.7 | 5.9 | ..... | WSW | 17 | 7.6 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | Misty..... | The Staff. |
| Kingstown | 29.34 | 745.2 | 29.36 | 745.7 | 44 | 6.7 | ..... | WNW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.36 | 745.7 | 41.0 | 5.0 | ..... | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.58 | 751.3 | 29.66 | 753.4 | 60.4 | 15.8 | ..... | NW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | Sgt. Fred. Travis, A. H. |
| Nairn | 29.06 | 738.1 | 29.16 | 740.7 | 37 | 2.8 | ..... | WNW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | W. D. Penny. [O. |
| Nassau, (Bahamas) | ..... | ..... | 30.03 | 762.7 | 78.8 | 26.0 | ..... | SE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | C. S. Duncombe. |
| Nottingham, Observatory | 29.15 | 740.4 | 29.34 | 745.2 | 42.1 | 5.6 | ..... | SW | ..... | ..... | 4 | ..... | 10k;d | ..... | WSW | 0.073 | 1.85 | Snowing..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 28.84 | 732.5 | 29.36 | 745.7 | 41.9 | 5.5 | ..... | SW | ..... | ..... | 5–6 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.45 | 748.0 | 43 | 6.1 | ..... | WSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | Mr. Lucas. |
| Plymouth | 29.45 | 748.0 | 29.53 | 750.0 | 45.0 | 7.2 | ..... | WSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling.. | John Merrifield. |
| Roche's Point | 29.41 | 747.0 | 29.46 | 748.3 | 48 | 8.9 | ..... | WSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Showery.. | W. Kennedy. |
| Saint Ann's Head | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 29.04 | 737.6 | 34 | 1.1 | ..... | N | 18 | 8.0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snow-showers.. | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.73 | 755.1 | 69.4 | 20.8 | ..... | SW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | Sergt. W. H. Lyne. |
| Sheffield | 29.06 | 738.1 | 29.34 | 745.2 | 41.0 | 5.0 | ..... | SW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0.12 | 3.0 | Overcast..... | W. F. Cooper. |
| Silloth Rectory | 29.22 | 742.2 | 29.25 | 742.9 | 36.4 | 2.4 | 72 | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.020 | 0.51 | Overcast..... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 28.82 | 732.0 | 29.23 | 742.4 | 39.1 | 3.9 | ..... | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 29.18 | 741.2 | 34 | 1.1 | ..... | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | John Sutherland. |
| Stratfield Turgiss | 29.26 | 743.2 | 29.48 | 748.8 | 43.5 | 6.4 | ..... | W | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. C. H. Grimah, F. M. |
| Thurso | ..... | ..... | 29.08 | 738.6 | 41 | 5.0 | ..... | WNW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 29.47 | 748.5 | 48.7 | 9.3 | ..... | W | 12 | 5.4 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.82 | 757.4 | 67.0 | 19.4 | 88 | SW | ..... | ..... | 2 | ..... | 10n | ..... | ..... | ..... | ..... | Raining..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.70 | 754.4 | 29.88 | 759.0 | 83.8 | 28.8 | 76 | ESE | 5.5 | 2.5 | ..... | 8 | 3 | ..... | ..... | 0.06 | 1.5 | Cloudy; fine | C. Meldrum. |
| Melbourne, Observatory | 30.01 | 762.2 | 30.10 | 764.5 | 54.7 | 12.6 | 87 | W | 11 | 4.9 | ..... | ..... | 10 | ..... | ..... | 0.97 | 24.6 | Squally..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m.

## MARINE SERIES.

| VESSELS. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Algeria, N. 51° 50′ W. 7° 50′ | ..... | ..... | 29.43 | 747.5 | 49.0 | 9.4 | ..... | SW | ..... | ..... | 3 | ..... | 10 | W | ..... | ..... | Smooth | Showery..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. E. Moulahd. |
| Ship Camperdown | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. C. Prehn. [R. |
| S. S. Peruvian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Alex. Simpson |
| S. S. Yorkshire, N. 42° 30′ W. 46° 15′ | ..... | ..... | 30.07 | 763.8 | 61 | 16.1 | ..... | ESE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 5 | ESE | D. clouds.... | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10 | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10 | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.24 | 666.5 | ..... | ..... | 68.9 | 20.5 | 81 | SE | ..... | ..... | 2 | 1pk | ..... | ..... | ..... | 0 | 0 | ..... | Federico Maison. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 28.97 | 735.8 | 29.02 | 737.0 | 36.0 | 2.2 | 91 | WNW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Rain & snow | |
| Fanöe | 29.12 | 739.6 | 29.14 | 740.1 | 38.5 | 3.6 | 73 | WNW | ..... | ..... | 6 | ..... | 3 | ..... | ..... | ..... | ..... | ..... | |
| Godthaab, (Greenland) | 29.58 | 751.2 | 29.62 | 752.3 | 28.9 | — 1.7 | 92 | NNE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Snowing | |
| Stykkisholm, (Iceland) | 29.69 | 754.2 | 29.74 | 755.3 | 31.8 | — 0.1 | 96 | E | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | |
| Thorshavn, (Faröe) | 29.30 | 744.1 | 29.33 | 745.0 | 34.9 | 1.6 | 73 | NE | ..... | ..... | 5 | ..... | 4 | ..... | ..... | ..... | ..... | Snowing | |
| Vestervig | 28.88 | 733.6 | 29.05 | 737.9 | 35.2 | 1.8 | 90 | W | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.41 | 746.9 | 29.76 | 755.9 | 42.8 | 6 | 85 | W | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0.098 | 2.5 | Very cloudy | Collignon, Director. |
| Amiens, Normal School | 29.47 | 748.4 | 29.58 | 751.2 | 46.4 | 8 | 59 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0.165 | 4.2 | Clear | Bonvarne, Director. |
| Avignon, Normal School | 29.55 | 750.6 | 29.63 | 752.6 | 48.2 | 9 | 48 | N | ..... | ..... | 6 | ..... | 2 | ..... | NNW | 0 | 0 | Partly cl'dy | Mr. Giraud, Director |
| Bar-sur-Seine | 29.09 | 738.8 | 29.65 | 753.2 | 41.5 | 5.3 | 56 | N | ..... | ..... | 2 | ..... | 8kn | ..... | NW | 0.358 | 9.1 | Very cloudy | C. Saillard. |
| Beaumette Obs'y (Angers) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Albert Cheux. |
| Beauvais | ..... | ..... | ..... | ..... | 43.7 | 6.5 | 42 | W | ..... | ..... | 3 | ..... | 5 | ..... | NW | 0.049 | 1.25 | Cloudy | Normal School. |
| Besançon | 28.77 | 730.7 | 29.04 | 752.8 | 36.7 | 2.6 | 91 | NW | ..... | ..... | 4 | ..... | 10 | ..... | W | 0.075 | 1.9 | Covered | Normal School. |
| Bourg-en-Bresse | 28.82 | 731.9 | 29.71 | 754.6 | 35.4 | 1.9 | 85 | S | ..... | ..... | 2 | ..... | 10n | ..... | W | 0.04 | 1. | Covered | Normal School. |
| Bourges, Normal School | 29.08 | 738.6 | 29.63 | 752.7 | 45.3 | 7.4 | 77 | SW | ..... | ..... | 2 | ..... | 2 | ..... | SE | 0 | 0 | Slightly cl'dy | A. Wagner, Director. |
| Brest, Naval Observatory | 29.39 | 746.5 | 29.61 | 752.1 | 48.4 | 9.1 | 67 | W | ..... | ..... | 2 | ..... | 10 | ..... | W | 0.030 | 0.75 | Raining | The Staff. |
| Carcassonne, Normal School | 29.38 | 746.2 | 29.81 | 757.1 | 37.8 | 3.2 | 83 | NW | ..... | ..... | 4 | ..... | 5 | ..... | NW | 0 | 0 | Cloudy. | Vateau, Director. |
| Caen | 29.66 | 750.8 | 29.63 | 752.7 | 45.0 | 7.2 | 71 | SSW | ..... | ..... | 2 | ..... | 5 | ..... | W | 0 | 0 | Cloudy | Normal School. |
| Chartres, Normal School | 29.04 | 737.7 | 29.61 | 752.2 | 47.5 | 8.6 | 70 | SW | ..... | ..... | 2 | ..... | 6 | ..... | W | 0.063 | 1.6 | ..... | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.30 | 744.1 | 29.62 | 752.3 | 42.6 | 5.9 | 70 | W | ..... | ..... | 3 | ..... | 10k | ..... | W | 0.252 | 6.4 | Covered | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.34 | 719.9 | 29.68 | 753.8 | 42.1 | 5.6 | 44 | NW | ..... | ..... | 3 | ..... | 5 | ..... | NW | 0.004 | 0.1 | Showery | Alluard, Director. |
| Commercy, Normal School | 28.75 | 730.2 | 29.65 | 753.0 | 38.5 | 3.6 | 80 | W | ..... | ..... | 4 | ..... | 8 | ..... | W | 0.165 | 4.2 | Very cloudy | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.43 | 722.0 | 29.57 | 751.0 | 41.7 | 5.4 | 44 | NW | ..... | ..... | 6 | ..... | 5 | ..... | NW | 0.504 | 12.8 | ½ covered | M. Kina. |
| Grenoble | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| La Roche-sur-Yon, N. School | 29.58 | 751.4 | 29.80 | 757.0 | 47.5 | 8.6 | 59 | W | ..... | ..... | 2 | ..... | 8 | ..... | WSW | 0.039 | 1.0 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.40 | 746.7 | 29.71 | 754.6 | 43.7 | 6.5 | 57 | SW | ..... | ..... | 6 | ..... | 8 | ..... | NW | 0.043 | 1.1 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.70 | 729.0 | 29.63 | 752.6 | 39.9 | 4.4 | 87 | S | ..... | ..... | 2 | ..... | 10 | ..... | NW | 0.181 | 4.60 | Covered | Voudez, Director. |
| Lorient, Naval Observatory | 29.63 | 752.5 | 29.73 | 755.1 | 50.0 | 10.0 | 62 | SW | ..... | ..... | 2 | ..... | 8 | ..... | SW | 0.157 | 4.0 | ¾ covered | T. Carré, Director. |
| Mâcon, Normal School | 28.97 | 735.9 | 29.68 | 753.8 | 40.8 | 4.9 | 78 | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | M. Marchal, Director. |
| Metz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. A. Schuster, Dir. |
| Mirecourt | 28.56 | 725.3 | 29.62 | 752.3 | 40.1 | 4.5 | 71 | NW | ..... | ..... | 4 | ..... | 8 | ..... | SE | 0 | 0 | Very cloudy | Normal School. |
| Nismes, Normal School | 29.45 | 747.9 | 29.65 | 753.0 | 48.2 | 9 | 55 | NW | ..... | ..... | 4 | ..... | 5 | ..... | NW | 0 | 0 | Cloudy | Boyer, Director. |
| Orleans, Normal School | 29.30 | 744.2 | 29.68 | 753.8 | 44.2 | 6.8 | 69 | W | ..... | ..... | 2 | ..... | 5 | ..... | W | 0.59 | 15. | Cloudy | Bernard, Director. |
| Paris, Observatory | 29.39 | 746.4 | 29.63 | 752.6 | 44.4 | 6.9 | 35 | NW | ..... | ..... | 1 | ..... | 8 | ..... | W | 0.020 | 0.50 | Very cloudy | National Observatory. |
| Privas | 28.59 | 726.1 | 29.66 | 753.3 | 46.6 | 8.1 | 47 | S | ..... | ..... | 4 | ..... | 5 | ..... | S | 0 | 0 | Cloudy | Normal School |
| Puy de Dome (Summit) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.78 | 756.3 | 29.85 | 758.1 | 49.3 | 9.6 | 58 | NW | ..... | ..... | 3 | ..... | 8 | ..... | NW | 0.20 | 5. | ¾ covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.57 | 751.1 | 29.66 | 753.3 | 44.8 | 7.1 | 70 | WNW | ..... | ..... | 3 | ..... | 5 | ..... | W | 0.291 | 7.4 | Cloudy | F. Lucard, Director. |
| Saint Malo (Port) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. H. Hercouet. |
| Tarbes, Normal School | 28.53 | 724.7 | 29.62 | 752.4 | 44.6 | 7 | 71 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | T. Hugues, Director. |
| Villefranche | 28.93 | 734.8 | 29.66 | 753.3 | 41.2 | 5.1 | 44 | N | ..... | ..... | 2 | ..... | 5 | ..... | S | 0.08 | 2. | Cloudy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.81 | 757.1 | 29.84 | 757.8 | 77.0 | 25 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchési. |
| Lyons | ..... | ..... | 29.72 | 755.0 | 41.0 | 5.0 | ..... | ..... | ..... | ..... | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | M. Jeys. |
| Marseilles, Observatory | ..... | ..... | 29.54 | 750.3 | 46.0 | 7.8 | 86 | NW | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | The Staff. |
| Mont-Louis | 24.48 | 621.7 | 29.79 | 756.7 | 26.1 | — 3.3 | 47 | W | 18.6 | 8.33 | ..... | ..... | 4 | ..... | W | 0.094 | 2.4 | ..... | Mr. Falguère. |
| Nice | 29.30 | 744.3 | 29.38 | 746.3 | 56.3 | 13.5 | 51 | SW | ..... | ..... | 6 | ..... | 1 | ..... | SW | 0.461 | 11.7 | Clear | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.34 | 745.3 | 29.62 | 752.3 | 46.4 | 8.0 | 44 | W | ..... | ..... | 3 | ..... | 5 | ..... | WNW | 0.031 | 0.8 | ..... | Marié Davy, Director |
| Perpignan | ..... | ..... | 29.77 | 756.2 | 45.0 | 7.2 | 58 | NW | 37.3 | 16.66 | ..... | ..... | 3 | ..... | NW | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.10 | 561.4 | ..... | ..... | 14.0 | —10.0 | ..... | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 1.173 | 29.8 | Snowy | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.47 | 748.5 | 29.63 | 752.7 | 47.7 | 8.7 | 43 | W | ..... | ..... | 2 | ..... | 3 | ..... | WNW | 0.039 | 1.0 | ..... | E. Renou. |
| Toulouse, Observatory | 29.14 | 740.1 | 29.85 | 758.3 | 42.8 | 6.0 | 46 | WNW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0.059 | 1.50 | ..... | The Staff. |
| Tours | 29.50 | 749.3 | 29.70 | 754.3 | 46.4 | 8.0 | 51 | W | ..... | ..... | 3 | ..... | 7 | ..... | NW | 0.031 | 0.8 | ..... | C. Marquet. |
| Versailles, (near Paris) | ..... | ..... | 29.63 | 752.5 | 47.1 | 8.4 | 45 | NW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0.046 | 1.17 | Very cloudy | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.12 | 765.0 | 30.15 | 765.7 | 49.5 | 9.7 | 86 | SE | 1.6 | 0.7 | ..... | ..... | 10n | ..... | ..... | 0.031 | 0.8 | Covered | Marc Dechevrens, S. J |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 29.10 | 739.1 | 29.28 | 743.7 | 40.8 | 4.9 | 84 | SW | | | 4 | | 10 | | | 0.322 | 8.18 | | Prof. Arndt. |
| Breslau | 28.84 | 732.5 | 29.36 | 745.7 | 49.8 | 9.9 | 44 | SW | | | 6 | | 4 | | | Blank | Blank | | Royal University Obs'y |
| Carlsruhe | 29.11 | 739.5 | 29.58 | 751.3 | 42.8 | 6.0 | 70 | SW | | | 4 | | 10 | | | 0 | 0 | | Albert Senz. |
| Cassel | 28.86 | 733.0 | 29.45 | 748.1 | 44.2 | 6.8 | 76 | WNW | | | 5 | | 6 | WSW | | 0.089 | 2.25 | | Dr. H. Möhl. |
| Crefeld | 29.27 | 743.5 | 29.43 | 747.5 | 45.1 | 7.3 | 57 | NW | | | 5 | | 6R | | | 0.12 | 3. | | Director Lose. |
| Emden | 29.37 | 746.0 | 29.41 | 746.9 | 42.1 | 5.6 | 88 | W | | | 3 | | 6 | | | 0 | 0 | | Prof. Prestel. |
| Frankfort on the Main | 29.15 | 740.3 | 29.51 | 749.6 | 45.0 | 7.2 | 57 | W | | | 2 | | 8 | | | 0.051 | 1.3 | | Physical Society. |
| Friedrichshafen | 28.15 | 715.0 | 29.60 | 751.8 | 42.8 | 6.0 | 57 | WNW | | | 7 | | 8 | W | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 29.19 | 741.5 | 29.26 | 743.3 | 41.7 | 5.4 | 70 | NW | | | 7 | | 8kn | | | 0.193 | 4.9 | Graupelnd. | Captain F. Hegemann. |
| Kiel | 29.19 | 741.3 | 29.20 | 741.7 | 35.2 | 1.8 | 81 | W | | | 8 | | 10 | | | 0.308 | 7.82 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.12 | 739.6 | 29.19 | 741.4 | 46.8 | 8.2 | 80 | SW | | | | | | | | 0.011 | 0.29 | Cloudy | Prof. E. Luther. |
| Köslin | | | 29.08 | 738.5 | 42.6 | 5.9 | | S | | | 6 | | 4 | | | 0.146 | 3.7 | | H. Müller. |
| Leipsic, Observatory | 28.93 | 734.9 | 29.35 | 745.6 | 43.2 | 6.2 | 63 | WSW | | | 6 | | 10 | WSW | | 0.020 | 0.5 | Stormy | Prof. Bruhns. |
| Memel, Naval School | 29.12 | 739.7 | 29.17 | 740.8 | 52.5 | 11.4 | 71 | S | | | 3 | | 9n | | | | | | Reinbrecht von Skalweit. |
| Neufahrwasser | 29.15 | 740.5 | 29.17 | 740.9 | 47.1 | 8.4 | 66 | SSW | | | 5 | | 9 | | | 0.004 | 0.1 | | A. Lothes. |
| Posen | 29.04 | 737.6 | 29.33 | 745.0 | 49.8 | 9.9 | 52 | NW | | | 6–7 | | 9 | | | 0.033 | 0.85 | Cloudy | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.04 | 737.5 | 29.60 | 751.7 | 42.3 | 5.7 | 64 | W | | | 3 | | 9 | W | | 0.005 | 0.12 | Raining | Dr. Schur. |
| Stuttgart | 28.55 | 725.2 | 29.50 | 749.2 | 43.2 | 6.2 | 50 | W | | | 1 | | 6 | W | | | | Rain & snow | Prof. Schoder. |
| Treves, (Trier) | 28.95 | 735.2 | 29.46 | 748.3 | 41.7 | 5.4 | 69 | W | | | 5 | | 10 | | | 0.020 | 0.52 | Foggy | Prof. Flesch. |
| Weissenburg, (Bavaria) | 27.97 | 710.5 | 29.50 | 749.4 | 39.0 | 3.9 | 64 | W | 22 | 10 | | | 8k | | W | 0 | 0 | Squally | Dr. Von Bobber. |
| Wustrow, Naval School | 29.12 | 739.6 | 29.17 | 740.9 | 36.7 | 2.6 | 87 | WNW | | | 4 | | 10 | | | 0.764 | 19.40 | Covered | E. F. Schütz. |
| GERMAN NAVAL SERIES. | | | | | | | | | | | | | | | | | | | |

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Königsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.41 | 746.9 | 29.80 | 756.8 | 67.6 | 19.8 | | SW | | | 4.5 | | | | | | | Dusty | Dr. J. F. J. Schmidt. |

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.68 | 753.8 | 29.73 | 755.1 | 83.4 | 28.6 | 57 | WSW | 25.0? | 11.2? | | | 7 | | WSW | 0 | 0 | D. clouds | |
| Deesa | 29.24 | 742.7 | 29.70 | 754.4 | 97.0 | 36.1 | 20 | S | | | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.71 | 754.7 | 29.75 | 755.7 | 83.6 | 28.7 | 72 | WNW | 20.0 | 8.9 | | | 3 | | NW | 0 | 0 | D. clouds | |
| Poona | 27.72 | 704.2 | 29.67 | 753.6 | 91.0 | 33.2 | 37 | NNE | | | | | 0 | | | 0 | 0 | Dust-whirl | |
| Lahore | 28.90 | 734.2 | 29.63 | 752.7 | 88.1 | 31.2 | 39 | Calm | 4.5 | 2.0 | | | 10 | | | 0 | 0 | Cloudy | |
| Belgaum | 27.25 | 692.1 | 29.74 | 755.3 | 84.7 | 29.3 | 64 | W | 8.0 | 3.6 | | | 2 | | | 0 | 0 | D. clouds | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.70 | 728.9 | 29.57 | 751.0 | 90.4 | 32.4 | 28 | NW | 4.5 | 2.0 | | | 5 | | | 0 | 0 | | |
| Agra | 29.08 | 738.6 | 29.62 | 752.4 | 98.6 | 37.0 | 25 | W | | | | | 5 | | SW | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.59 | 726.1 | 29.58 | 751.4 | 101.4 | 38.6 | 23 | Calm | 2.7 | 1.2 | | | 3 | | | 0 | 0 | D. clouds | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.28 | 743.6 | 29.64 | 752.7 | 97.1 | 36.2 | 60 | WNW | 3.8 | 1.7 | | | 7 | ESE | | 0 | 0 | D. clouds | |
| Allahabad | 29.30 | 744.2 | 29.60 | 751.8 | 96.7 | 35.9 | 24 | Calm | 3.0 | 1.3 | | | 3 | | W | 0 | 0 | D. clouds | |
| Patna | 29.41 | 746.9 | 29.58 | 751.4 | 98.0 | 36.7 | 14 | W | 1.2 | 0.5 | | | 4 | W | W | 0 | 0 | D. clouds | |
| Hazaribagh | 27.66 | 702.5 | 29.61 | 752.0 | 92.3 | 33.5 | 14 | NW | 10.8 | 4.8 | | | 0 | | | 0 | 0 | Misty | |
| Cuttack | 29.59 | 751.6 | 29.67 | 753.6 | 88.1 | 31.2 | 62 | S | 3.4 | 1.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.62 | 752.5 | 29.65 | 753.0 | 85.7 | 29.8 | 76 | SW | 13.0 | 5.8 | | | 2 | | SW | 0 | 0 | D. clouds | |
| Goalpara | 29.32 | 744.7 | 29.71 | 754.6 | 76.7 | 24.8 | 69 | NNE | 7.3 | 3.3 | | | 2 | | W | 0 | 0 | D. clouds | |
| Chittagong | 29.69 | 754.1 | 29.78 | 756.4 | 82.9 | 28.3 | 83 | WNW | 9.3 | 4.2 | | | 10 | | | 0 | 0 | Gloomy | |
| Sibsagar | 29.47 | 748.6 | 29.81 | 757.2 | 71.0 | 21.7 | 92 | ENE | 3.4 | 1.5 | | | 10 | W | W | 0.23 | 5.8 | Overcast | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.30 | 718.9 | 29.62 | 752.4 | 96.3 | 35.7 | 35 | NE | 3.1 | 1.4 | | | 1 | NW | | 0 | 0 | D. clouds | |

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

## ITALIAN SERIES.

**Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.**

| STATIONS. | Barometer. Corrected for instru-m'tal error and tem-perature. Inches. | Barometer. Corrected for instru-m'tal error and tem-perature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.00 | 736.7 | 29.42 | 747.3 | 53.2 | 11.8 | 53 | SW | 0.7 | 0.3 | ..... | ..... | 8 | ..... | ..... | 0.228 | 5.8 | ..... | Prof. Giovanni Codig. |
| Padua | 29.34 | 745.1 | 29.45 | 747.9 | 47.7 | 8.7 | 73 | S | 8.7 | 3.9 | ..... | ..... | 10 | ..... | ..... | 0.130 | 3.3 | ..... | Prof. Pott. Lorenzioni |
| Vicenza | 29.23 | 742.5 | 29.43 | 747.5 | 52.9 | 11.6 | 46 | SE | 1.3 | 0.6 | ..... | ..... | 9 | ..... | ..... | 0.138 | 3.5 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.10 | 713.7 | 29.43 | 747.6 | 48.6 | 9.2 | 51 | NNE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0.197 | 5.0 | ..... | Prof. Trionfini Carlo. |
| Milan | 28.91 | 734.3 | 29.43 | 747.6 | 49.3 | 9.6 | ..... | NW | ..... | ..... | 1 | ..... | 7 | N | ..... | 0.559 | 14.2 | ..... | Prof. Schiaparelli. |
| Moncalieri | 28.55 | 725.2 | 29.47 | 748.5 | 47.6 | 8.1 | 95 | WNW | 4.3 | 1.9 | ..... | ..... | 10 | SE | ..... | 0.094 | 2.4 | ..... | Prof. P. F. Denza. |
| Mondovi | 27.54 | 699.6 | 29.48 | 748.7 | 39.7 | 4.3 | 77 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.22 | 742.1 | 29.44 | 747.8 | 52.3 | 11.3 | 54 | SE | ..... | ..... | 2 | ..... | 4 | E | ..... | 0.224 | 5.7 | ..... | Prof. L. Vassallo. |
| Genoa | 29.28 | 743.8 | 29.46 | 748.2 | 51.4 | 10.8 | 49 | SE | 9.4 | 4.2 | ..... | ..... | 8 | S | ..... | 0.181 | 4.6 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.13 | 739.8 | 29.44 | 747.7 | 53.6 | 12.0 | 59 | SSW | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 0.079 | 2.0 | ..... | Prof. P. Pigorini. |
| Florence | 29.23 | 742.5 | 29.49 | 749.1 | 48.2 | 9.0 | 90 | S | ..... | ..... | 2 | ..... | 10 | SW | ..... | 0.322 | 8.2 | ..... | Cav. F. Meucci. |
| Leghorn | 29.42 | 747.2 | 29.50 | 749.4 | 46.9 | 8.3 | 49 | W | 10.5 | 4.7 | ..... | ..... | 10 | W | ..... | 0.039 | 1.0 | ..... | Prof. P. Monte. |
| Pesaro | 29.45 | 747.9 | 29.50 | 749.2 | 48.9 | 9.4 | 97 | W | 19.2 | 8.6 | ..... | ..... | 10 | NW | ..... | 0.020 | 0.5 | ..... | Prof. Luigi Guidi. |
| Urbino | 27.91 | 709.0 | 29.48 | 748.8 | 44.6 | 7.0 | 71 | SW | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0.209 | 5.3 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.40 | 746.8 | 29.52 | 749.7 | 45.5 | 7.5 | 91 | WNW | ..... | ..... | 4 | ..... | 8 | SE | ..... | 0.091 | 2.3 | ..... | Avv. P. Ponticelli. |
| Rome | 29.34 | 745.3 | 29.52 | 749.8 | 56.1 | 13.4 | 64 | WSW | 15.0 | 6.7 | ..... | ..... | 9 | ..... | ..... | 0.307 | 7.8 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U. | 29.40 | 746.7 | 29.60 | 751.8 | 57.2 | 14.0 | 69 | SSW | ..... | ..... | 4 | ..... | 10 | S | ..... | 0.287 | 7.3 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 60.6 | 15.9 | 79 | SE | 24.8 | 11.1 | ..... | ..... | 10 | S | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.40 | 746.7 | 29.59 | 751.6 | 51.1 | 10.6 | 63 | NW | ..... | ..... | 4 | ..... | 10 | W | ..... | 0.043 | 1.1 | ..... | Prof. A. Pacinotti. |
| Cosenza | 28.73 | 729.8 | 29.63 | 752.5 | 57.6 | 14.2 | 76 | WSW | 2.5 | 1.1 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.36 | 745.7 | 29.61 | 752.2 | 55.0 | 12.8 | 57 | W | 6.3 | 2.8 | ..... | ..... | 10 | W | ..... | 0.075 | 1.9 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.47 | 748.4 | 29.54 | 750.3 | 62.4 | 16.9 | 63 | SW | ..... | ..... | 1 | ..... | 8 | WSW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.04 | 737.7 | 29.60 | 751.8 | 48.9 | 9.4 | 74 | WSW | 6.3 | 2.8 | ..... | ..... | 10 | W | ..... | 0 | 0 | ..... | Prof. F. Brioschi |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

**Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.**

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 30.20 | 767.1 | 30.27 | 768.8 | 41.9 | 5.5 | 58 | N | 9.2 | 4.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| Tokei (Yeddo) University | 30.15 | 765.8 | 30.25 | 768.4 | 42.5 | 5.8 | 54 | NNW | 11 | 4.9 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear | Prof. P. V. Veeder. |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

**By authority of the Secretary of Public Works,**

**Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.**

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 62.07 | 19.0 | 32 | N | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Dry fog | L. Castillo, A. E. |
| Guadalajara | 25.02 | 635.5 | 30.06 | 763.5 | 47.3 | 8.5 | 54 | S | 0.9 | 0.4 | ..... | 0 | 5 | ..... | SW | 0 | 0 | ½ cloudy | Prof. L. Perez. |
| Guanajuato | 23.66 | 601.1 | 29.86 | 758.4 | 62.6 | 17.0 | 69 | Calm | 0 | 0 | ..... | 0 | 1 | ..... | ..... | 0 | 0 | Fair | Prof. V. Fernandez. |
| Leon | ..... | ..... | ..... | ..... | 59.9 | 15.5 | 70 | N | 0.9 | 0.4 | ..... | 10c | 0 | SW | ..... | 0 | 0 | Covered | Prof. M. Leal. |
| Mexico | 23.07 | 586.0 | 30.12 | 765.0 | 50.5 | 10.3 | 39 | NW | 3.6 | 1.6 | ..... | 3c | 0 | ..... | ..... | 0 | 0 | Hazy | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 60.27 | 15.1 | 48 | Calm | 0 | 0 | ..... | 1c | 0 | SW | ..... | 0 | 0 | Clear | M. V. de Leon, M. E. |
| Puebla | 23.31 | 592.0 | 30.01 | 762.2 | 49.3 | 9.6 | 68 | ENE | 5.1 | 2.3 | ..... | 0 | 2 | ..... | ..... | 0 | 0 | Dry mist | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 29.87 | 758.8 | 29.88 | 759.1 | 71.6 | 22.0 | 83 | SE | 1.8 | 0.8 | ..... | 7cs | 0 | S | ..... | 0 | 0 | Cloudy | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 29.88 | 758.9 | 29.91 | 759.6 | 77.0 | 25.0 | 80 | Calm | 0 | 0 | ..... | 0 | 10sk | ..... | ..... | 0 | 0 | Foggy | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 55.4 | 13.0 | 68 | SW | 1.8 | 0.8 | ..... | 2c | 0 | ..... | ..... | 0 | 0 | Clear | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | P. Spina. [M. M. D. D. |
| Morelia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Tena, F. L. Param. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,232.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

**Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.**

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.48 | 748.8 | 29.48 | 748.8 | 42.8 | 6.0 | ..... | W | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0.299 | 7.6 | ..... | |
| Groningen | 29.29 | 744.0 | 29.35 | 745.4 | 40.5 | 4.7 | ..... | NW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.024 | 0.6 | ..... | |
| Helder | 29.36 | 745.7 | 29.36 | 745.7 | 38.1 | 3.4 | ..... | WSW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.488 | 12.4 | ..... | |
| Hellevoetsluis | 29.45 | 748.0 | 29.45 | 748.0 | 41.7 | 5.4 | 69 | WSW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.38 | 746.3 | 29.43 | 747.5 | 45.5 | 7.5 | 68 | W | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0.315 | 8.0 | Cloudy | H. v d Brink. |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteoroiogical Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 28.94 | 735.1 | 29.00 | 736.5 | 34.9 | 1.6 | 50 | W | 2.7 | 1.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... |
| Brönö | 29.08 | 738.7 | 29.12 | 739.7 | 33.4 | 0.8 | 61 | NE | 9 | 4 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... |
| Christiania | 28.77 | 730.8 | 28.93 | 734.7 | 35.2 | 1.8 | 73 | NNE | 4 | 2 | ..... | ..... | 10 | ..... | ..... | 0.031 | 0.8 | Light snow.. | |
| Tromsö | 29.41 | 747.1 | 29.46 | 748.2 | 29.8 | — 1.2 | 65 | Calm | 0 | 0 | ..... | ..... | 5 | ..... | ..... | 0.008 | 0.2 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.10 | 764.4 | 30.29 | 769.3 | 59.2 | 15.1 | 71 | SE | 7.8 | 3.3 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.06 | 738.0 | 30.09 | 764.3 | 54.9 | 12.7 | 51 | W | 12.5 | 5.6 | ..... | ..... | 6 | NW | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.18 | 766.5 | 30.26 | 768.7 | 62.6 | 17.0 | 43 | ENE | 6.3 | 2.8 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.78 | 756.5 | 30.15 | 765.7 | 55.6 | 13.1 | 59 | NNW | 16.1 | 7.2 | ..... | ..... | 6 | ..... | ..... | 0.008 | 0.2 | Raining... .. | The Staff. |
| Ponta Delgada, (Azores) | 30.22 | 767.6 | 30.31 | 769.8 | 62.6 | 17.0 | 61 | ESE | 9.8 | 4.4 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sando, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.74 | 755.5 | 29.75 | 755.6 | 79.3 | 26.3 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | S | 1 | ..... | Raining..... | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Rio Douro, S. 25° 59′, E. 32° 37′ | ..... | ..... | 30.31 | 769.8 | 78.8 | 26.0 | ..... | SE | ..... | ..... | 2 | ..... | 10 | ..... | SE | 1 | ..... | Overcast..... | J. T. d'Oliveria, Com'd't. |
| Sado, Porto Praya, Cape Verde Islands | 30.02* | 762.5* | 30.03* | 762.8* | 84.2 | 29.0 | ..... | NE | ..... | ..... | 6 | ..... | 6 | ..... | NE | 3 | NE | D. clouds.. .. | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.73 | 755.1 | 29.74 | 755.3 | ..... | ..... | ..... | W | ..... | ..... | 1 | ..... | 5 | ..... | W | 3 | W | Blue sky..... | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreina, dos Amas, Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 28.93 | 734.7 | 29.34 | 745.3 | 46.6 | 8.2 | 87 | W | 18 | 8 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.00 | 736.7 | 29.43 | 747.4 | 45.0 | 7.2 | 72 | SSE | 4 | 2 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | Light clouds | Astronomical Obs. |
| Dorpat | 29.22 | 742.3 | 29.47 | 748.5 | 46.8 | 8.1 | 74 | ESE | 9 | 4 | ..... | ..... | 10k | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.60 | 751.9 | 29.62 | 752.3 | 40.5 | 4.7 | 82 | ESE | 16 | 7 | ..... | ..... | 4s | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.16 | 740.6 | 29.48 | 748.9 | 35.8 | 2.1 | 98 | SE | 18 | 8 | ..... | ..... | 10 [ks 2c;ck;k; | ..... | ..... | Blank | Blank | ..... | Ch. Forsten. |
| Kieff | 28.98 | 736.1 | 29.61 | 752.1 | 52.2 | 11.2 | 72 | SSE | 20 | 9 | ..... | ..... | 7cs | ..... | ..... | ..... | ..... | Light clouds | Physical Cabinet. |
| Nikolaiev | 29.68 | 753.9 | 29.75 | 755.7 | 57.6 | 14.2 | 53 | S | 45 | 20 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.98 | 761.5 | 30.00 | 762.0 | 47.1 | 8.4 | 92 | S | 9 | 4 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | Light clouds | Lagorio. |
| Moscow | 29.52 | 749.7 | 30.08 | 764.1 | 36.5 | 2.5 | 89 | S | 9 | 4 | ..... | ..... | 5ck | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.78 | 756.3 | 29.98 | 761.4 | 59.2 | 15.1 | 47 | SE | 9 | 4 | ..... | ..... | 8k | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.84 | 758.0 | 29.86 | 758.5 | 45.5 | 7.5 | 64 | SE | 9 | 4 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.53 | 724.7 | 29.93 | 760.1 | 63.0 | 17.2 | 28 | WNW | 31 | 14 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.10 | 764.4 | 30.01 | 762.3 | 53.4 | 11.9 | 55 | N | 7 | 3 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Kasan | 30.00 | 762.0 | 30.28 | 769.1 | 44.8 | 7.1 | 51 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 29.52 | 749.8 | 30.50 | 774.7 | 38.7 | 3.7 | 31 | SSE | 13 | 6 | ..... | ..... | 1cs | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.55 | 750.5 | 29.78 | 756.4 | 54.7 | 12.6 | 86 | SSE | 11 | 5 | ..... | ..... | 10k | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.24 | 717.2 | 29.93 | 760.2 | 55.0 | 12.8 | 90 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Barnaul | 29.93 | 760.3 | 30.50 | 774.6 | 21.6 | — 5.8 | 57 | N | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Yeniseisk | 30.01 | 762.2 | 30.36 | 771.2 | 6.4 | —14.2 | 77 | NW | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Marks. |
| Krotkowo* | 29.74 | 755.5 | 30.23 | 767.9 | 41.9 | 5.5 | 51 | ENE | 13 | 6 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Uskolzef. |
| Peking, (China) | 29.80 | 756.9 | 29.94 | 760.5 | 52.9 | 11.6 | 26 | S | 2 | 1 | ..... | ..... | 9n | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Nertchinsk | 27.68 | 701.7 | 29.72 | 754.9 | 33.1 | 0.6 | 49 | NW | 4 | 2 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Vladivostock | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 10.0 | —12.2 | 70 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.27 m., or 1,621.3? ft.; Irkutsk, 892 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | ..... | ..... | 29.58 | 751.3 | 53.6 | 12 | 26 | WNW | 5.4 | 2.42 | ..... | 0 | 4k | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.87 | 758.7 | 29.93 | 760.2 | 50.4 | 10.2 | 78 | NW | 5.4 | 2.42 | ..... | 2 | 5 | NW | ..... | 0.563 | 14.3 | Hailing..... | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.91 | 683.4 | ..... | ..... | 45.0 | 7.2 | 66 | W | 8.8 | 3.95 | ..... | 0 | 8 | ..... | ..... | 0 | 0 | Almost cov.. | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.70 | 703.6 | 29.96 | 761.0 | 48.6 | 9.2 | 47 | W | 14.2 | 6.33 | ..... | 0 | 9 | ..... | ..... | 0.008 | 0.2 | Almost cov. | The Staff. |
| Murcia, Met. Obs'y | 29.78 | 756.4 | 29.93 | 760.3 | 60.8 | 16.0 | 36 | NW | 4.1 | 1.83 | ..... | 4 | 5 | E | ..... | 0 | 0 | Cloudy..... | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.06 | 738.2 | 29.97 | 761.3 | 48.4 | 9.1 | 88 | W | 10.5 | 4.72 | ..... | ..... | 10 | ..... | ..... | 0.161 | 4.1 | Rainy ..... | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.96 | 760.9 | 30.02 | 762.6 | 76.6 | 24.8 | 84 | E | 6.7 | 3.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | Benito Vines, S. J. |
| San Fernando, Naval Obs'y | 30.07 | 763.7 | 30.17 | 766.3 | 56.1 | 13.4 | 60 | WNW | 19.0 | 8.5 | ..... | 0 | 5 | ..... | WNW | 0.015 | 0.4 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.95 | 761.4 | 30.07 | 763.7 | 81.7 | 27.6 | 70 | SE | 5.0 | 2.23 | ..... | 3cs | 2c | SE | SE | 0 | 0 | Clear..... | Leonardo de Tejeda, Chief of Engineers. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft. The barometer readings at Barcelona are published as given.

## SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.64 | 752.8 | 29.68 | 753.8 | 34.2 | 1.2 | ..... | E | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0.157 | 4.0 | ..... | |
| Umea | 29.23 | 742.5 | 29.21 | 741.8 | 34.2 | 1.2 | 100 | ESE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.05 | 737.9 | 29.10 | 739.2 | 34.5 | 1.4 | 98 | SE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.339 | 8.6 | ..... | |
| Stockholm | 28.85 | 732.7 | 28.98 | 736.2 | 39.6 | 4.2 | 90 | SSE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.087 | 2.2 | ..... | |
| Wisby | 28.98 | 736.2 | 29.04 | 737.7 | 47.5 | 8 6 | 81 | SE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.169 | 4.3 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 28.98 | 736.5 | 29.03 | 737.4 | 44.4 | 6.9 | 85 | ESE | 8.8 | 3.7 | ..... | ..... | 10 | SSW | SE | 0.236 | 5.99 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.21 | 716.5 | 29.68 | 753.8 | 40.1 | 4.5 | 68 | SSE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.028 | 0.7 | Covered | The Observatory. |
| Zurich | 27.97 | 710.4 | 29.66 | 753.3 | 39.2 | 4.0 | 60 | W | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | Cloudy | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —7.7 mm.; Thermometer, —5.3 cent.; Relative Humidity, 0 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.74 | 755.5 | 70.0 | 21.1 | 29 | SE | 3 | 1.5 | ..... | 4 | ..... | SW | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanides. |
| Valona | ..... | ..... | 29.56 | 750.8 | 68.4 | 20.2 | ..... | S | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | A. Bertrand. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.86 | 758.4 | 29.97 | 761.3 | 62.4 | 16.9 | 69 | NNE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.63 | 752.6 | 29.95 | 760.7 | 36 | 2.2 | ..... | E | 10 | 4.5 | ..... | ..... | 8s | ..... | E | 0 | 0 | Cloudy | W. R. Bigg. |
| *Chatham, N. B | 29.80 | 756.9 | 29.87 | 758.7 | 34 | 1.1 | 84 | NE | 17 | 7.6 | ..... | ..... | 10s | ..... | NE | 0.28 | 7.1 | Cloudy | G. A. Blair. |
| Charlottetown, P. E. Island | 29.64 | 752.8 | 29.68 | 753.9 | 35 | 1.7 | 96 | NW | 10 | 4.5 | ..... | ..... | 10n | ..... | Calm | 0.860 | 21.84 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.72 | 754.9 | 29.92 | 760.0 | 34.6 | 1.4 | 73 | NE | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | James Smith, M. A. |
| Dalhousie, N. B | 29.81 | 757.2 | ..... | ..... | 34 | 1.1 | 98 | E | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | Snowing | H. A. Johnson. |
| Esquimault, B. C | 30.18 | 766.6 | 30.23 | 767.8 | 46 3 | 7.9 | 100 | Calm | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Cloudy | W. H. Bevis. |
| *Father Point, Quebec | 30.01 | 762.2 | 30.03 | 762.7 | 32 | 0.0 | 86 | NE | 29 | 13.0 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | J. McWilliams. |
| Fredericton, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. Harrison. |
| *Fort Garry Manitoba | 29.17 | 740.9 | 30.02 | 762.5 | 36 | 2.2 | 90 | SE | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.040 | 1.02 | Light rain | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.63 | 727.2 | 29.76 | 755.9 | 33 | 0.6 | 89 | E | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0.15 | 3.8 | Cloudy | James Grant. |
| *Halifax, N. S | 29.46 | 748.3 | 29.60 | 751.8 | 37 | 2.8 | 97 | NW | 4 | 1.8 | ..... | ..... | Fog | ..... | ..... | 1.273 | 32.34 | Foggy | F. Allison, M. A. |
| Hamilton, Ontario | 29.61 | 749.5 | 29.90 | 759.4 | 39.7 | 4.3 | 86 | E | ..... | ..... | 1 | 10cs | ..... | ..... | ..... | 0 | 0 | Cloudy | Geo. Dickson, M. A. |
| Heart's Content, N. F | 30.05 | 763.3 | 30.08 | 764.0 | 37 | 2.8 | 100 | SW | ..... | ..... | ..... | 10 | ..... | ..... | ..... | 0.08 | 2.0 | Rain and fog | E. Weedon. |
| *Kingston, Ontario | 29.55 | 750.6 | 29.89 | 759.2 | 41 | 5.0 | 67 | E | 3 | 1.3 | ..... | 6c | 0 | Calm | ..... | 0 | 0 | Fair | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.66 | 753.4 | 29.70 | 754.4 | 33 | 0.6 | ..... | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0.70 | 17.8 | Raining | C. H. Rigby. |
| *Montreal, Quebec | 29.76 | 755.9 | 29.96 | 761.0 | 35 | 1.7 | 93 | N | 13 | 5.8 | ..... | 5cs | 2s | ..... | ..... | 0 | 0 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.16 | 740.7 | 29.86 | 758.4 | 41 | 5.0 | 93 | NE | 8 | 3.6 | ..... | 2k | 8ks | E | E | 0 | 0 | Cloudy | Rev. R. Mosley. |
| Peterboro, Ontario | 29.10 | 739.1 | 29.87 | 758.7 | 37.2 | 2.9 | 66 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.07 | 738.4 | 29.77 | 756.1 | 40 | 4.4 | 93 | NE | 7 | 3.1 | ..... | 10k | 0 | S | ..... | 0.16 | 4.1 | Fair | H. Morgan. |
| Port Hastings, N. S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Peter Grant. |
| Port Stanley, Ontario | 29.11 | 739.4 | 29.77 | 756.1 | 39 | 3.9 | 90 | NE | 10 | 4.5 | ..... | ..... | 10ks | ..... | SE | 0.17 | 4.3 | Cloudy | M. Payne. |
| *Quebec, Quebec | 29.65 | 753.1 | 29.98 | 761.5 | 33 | 0.6 | 80 | NE | ..... | ..... | 7 | ..... | 10n | ..... | NE | 0 | 0 | Cloudy | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.50 | 749.3 | 29.97 | 761.2 | 34 | 1.1 | 71 | Calm | 0 | 0 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 29.09 | 754.1 | 29 74 | 755.4 | 34 | 1.1 | 89 | N | 8 | 3.6 | ..... | ..... | 10n | ..... | ..... | 0.84 | 21.3 | Cloudy | Dr. Gove. |
| St. John, N. B | 29.62 | 752.3 | 29.79 | 756.7 | 32 | 0.0 | 100 | N | 8 | 3.6 | ..... | ..... | 10n | ..... | ..... | 0.535 | 13.59 | Drizzling | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.07 | 738.4 | 29.79 | 756.7 | 39 | 3.9 | 91 | E | 5 | 2.2 | ..... | ..... | 10ks | ..... | ..... | 0.02 | 0.5 | Cloudy | K. Stewart. |
| Stayner, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. J. Cole. |
| Stratford, Ontario | 28.47 | 723.1 | 29.77 | 756.1 | 37.7 | 3.2 | 93 | SE | 9 | 4.0 | ..... | ..... | 10s | ..... | ..... | 0.700 | 17.78 | Cloudy | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.71 | 754.6 | 29.74 | 755.4 | 35 | 1.7 | 98 | N | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 1.31 | 33.3 | Raining | T. C. Hill. |
| *Toronto, Ontario | 29.47 | 748.5 | 29.86 | 758.4 | 39 | 3.9 | 91 | E | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0.17 | 4.3 | Cloudy | Magnetic Observatory. |
| Windsor, N. S | 29.54 | 750.3 | 29.64 | 752.8 | 35.5 | 1.9 | 95 | NW | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | 0.95 | 24.1 | Fair | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 36.0 | 2.2 | 100 | E | ..... | ..... | ..... | 5 | 5n | ..... | ..... | 0.06 | 1.5 | Foggy | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,017 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.65 | 753.1 | 29.88 | 758.9 | 35 | 1.7 | 70 | N | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Alpena, Michigan | 29.15 | 740.4 | 29.80 | 756.9 | 36 | 2.2 | 100 | NE | 10 | 4.5 | ..... | ..... | Fog | ..... | Calm | 0.17 | 4.3 | Foggy | |
| Atlantic City, New Jersey | 29.90 | 759.4 | 29.92 | 760.0 | 42 | 5.6 | 91 | SE | 2 | 0.9 | ..... | 2k | 8ks | SW | Calm | 0.47 | 11.9 | Threatening | |
| Augusta, Georgia | 29.74 | 755.4 | 29.92 | 760.0 | 66 | 18.9 | 84 | Calm | 0 | 0 | ..... | 0 | 5ks | ..... | W | 0.19 | 4.8 | Fair | |
| Baltimore, Maryland | 29.84 | 757.9 | 29.89 | 759.2 | 45 | 7.2 | 84 | E | 5 | 2.2 | ..... | ..... | 10s | ..... | SW | 0.38 | 9.7 | Threatening | |
| Barnegat, New Jersey | 29.88 | 758.9 | 29.90 | 759.4 | 42 | 5.6 | 83 | S | 4 | 1.8 | ..... | 2c | 0 | S | ..... | 0.25 | 6.3 | Clear | |
| Bismarck, Dakota | 28.22 | 716.8 | 30.08 | 764.0 | 33 | 0.6 | 79 | W | 11 | 4.9 | ..... | 0 | 2s | ..... | Calm | Inap. | Inap. | Clear. | |
| Boise City, Idaho | 27.41 | 696.2 | 30.29 | 769.4 | 36 | 2 2 | 80 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | Calm | Inap. | Inap. | Fair | |
| Boston, Massachusetts | 29.73 | 755.1 | 29.89 | 759.2 | 42 | 5.6 | 42 | N | 5 | 2.2 | ..... | 4ck | 4s;hz | W | ..... | 0 | 0 | Fair | |
| Brackettville, Texas | 28.70 | 729.0 | 29.72 | 754.9 | 55 | 12.8 | 68 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 28.99 | 736.3 | 30.02 | 762.5 | 31 | — 0.6 | 89 | S | 7 | 3.1 | ..... | 10cs | 0 | W | ..... | 0 | 0 | Cloudy | |
| Brownsville, Texas | 29.79 | 756.7 | 29.86 | 758.4 | 66 | 18.9 | 90 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Buffalo, New York | 29.05 | 737.9 | 29.75 | 755.6 | 42 | 5.6 | 83 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.05 | 1.3 | Cloudy | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 53 | 11.7 | 67 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.68 | 753.9 | 29.94 | 760.5 | 34 | 1.1 | 69 | N | 6 | 2.7 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Cairo, Illinois | 29.65 | 753.9 | 30.08 | 764.0 | 48 | 8.9 | 56 | NW | 10 | 4.5 | ..... | 10k | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Camp Grant, Arizona | 25.05 | 636.3 | 29.85 | 758.2 | 38 | 3.3 | 81 | NW | ..... | ..... | 1 | ..... | 10n | ..... | W | 0.06 | 1.5 | Cloudy | |
| Camp Verde, Arizona | 26.65 | 676.9 | 30.14 | 765.5 | 39 | 3.9 | 91 | NW | ..... | ..... | 1 | 10c | 0 | W | ..... | 0.01 | 0.3 | Cloudy | |
| Campo, California | 27.36 | 694.9 | 29.93 | 760.2 | 44 | 6.7 | 92 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.08 | 2.0 | Cloudy | |
| Cape Hatteras, N. Carolina | 29.83 | 757.7 | 29.84 | 757.9 | 66 | 18.9 | 95 | SW | 24 | 10.7 | ..... | 8k | 2s | SW | SW | 0 | 0 | Threatening | |
| Cape Henry, Virginia | 29.84 | 757.9 | 29.86 | 758.4 | 47 | 8.3 | 92 | E | 12 | 5.4 | ..... | ..... | 10s | ..... | E | 0.42 | 10.7 | Cloudy | |
| Cape Lookout, N. Carolina | 29.83 | 757.7 | 29.85 | 758.2 | 64 | 17.8 | 94 | SW | 12 | 5.4 | ..... | ..... | 10n | ..... | SW | 0.41 | 10.4 | Light rain | |
| Cape May, New Jersey | 29.86 | 758.4 | 29.90 | 759.4 | 47 | 8.3 | 92 | E | 1 | 0.4 | ..... | ..... | 10s | ..... | ..... | 0.83 | 21.1 | Cloudy | |
| Charleston, South Carolina | 29.87 | 758.7 | 29.94 | 760.5 | 68 | 20.0 | 90 | SW | 6 | 2.7 | ..... | 0 | 8ks | ..... | SW | 0 01 | 0.3 | Fair | |
| Cheyenne, Wyoming | 24.10 | 612.1 | 30.04 | 763.0 | 33 | 0.6 | 79 | N | 4 | 1.8 | ..... | 0 | 8s | ..... | N | 0 | 0 | Cloudy | |
| Chicago, Illinois | 29.15 | 740.4 | 29.85 | 758.2 | 37 | 2.8 | 81 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | NW | 0.51 | 13.0 | Cloudy | |
| Cincinnati Ohio | 29.20 | 741.7 | 29.86 | 758.4 | 43 | 6.1 | 63 | W | 16 | 7.2 | ..... | ..... | 10ks | ..... | W | 0.54 | 13.7 | Cloudy | |
| Cleveland, Ohio | 28.97 | 735.8 | 29.68 | 753.9 | 45 | 7.2 | 100 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.23 | 5.8 | Heavy rain | |
| Concho, Texas | 27.99 | 710.9 | 29.68 | 753.9 | 47 | 8.3 | 54 | NE | ..... | ..... | 3 | 8k | 0 | NE | ..... | 0 | 0 | Cloudy | |
| Corsicana, Texas | 29.58 | 751.3 | 30.06 | 763.5 | 48 | 8.9 | 78 | NE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Davenport, Iowa | 29.35 | 745.5 | 30.01 | 762.2 | 35 | 1.7 | 80 | NW | 10 | 4.5 | ..... | 1c | 0 | NW | ..... | 0.20 | 5.1 | Clear | |
| Deadwood, Dakota | 25.51 | 647.9 | ..... | ..... | 35 | 1.7 | 80 | N | 1 | 0.4 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Denison, Texas | 29.28 | 743.7 | 30.09 | 764.3 | 46 | 7.8 | 77 | NE | 1 | 0.4 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Denver, Colorado | 24.85 | 631.2 | 30.07 | 763.8 | 36 | 2.2 | 90 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | E | 0.14 | 3.6 | Threatening | |
| Detroit, Michigan | 29.03 | 737.3 | 29.69 | 754.1 | 40 | 4.4 | 91 | W | 5 | 2.2 | ..... | ..... | 10n | ..... | Calm | 0.51 | 13.0 | Light rain | |
| Dodge City, Kansas | 27.48 | 698.0 | 29.86 | 758.4 | 34 | 1.1 | 90 | NW | 4 | 1.8 | ..... | 5c | 2s | W | Calm | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.25 | 742.9 | 29.96 | 761.0 | 37 | 2.8 | 63 | N | 7 | 3.1 | ..... | 0 | 5ks | ..... | Calm | 0.21 | 5.3 | Fair | |
| Duluth, Minnesota | 29.33 | 745.0 | 30.02 | 762.5 | 37 | 2.8 | 63 | N | 2 | 0.9 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Eagle Pass, Texas | 29.05 | 737.9 | 29.78 | 756.4 | 54 | 12.2 | 62 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 29.66 | 753.4 | 29.73 | 755.1 | 34 | 1.1 | 79 | N | 20 | 8.9 | ..... | ..... | 10s | ..... | N | 0.72 | 18.3 | Cloudy | |
| Erie, Pennsylvania | 28.90 | 734.0 | 29.70 | 754.4 | 46 | 7.8 | 77 | SE | 2 | 0.9 | ..... | ..... | 10n | ..... | ..... | 0.31 | 7.9 | Light rain | |
| Escanaba, Michigan | 29.24 | 742.7 | 29.91 | 759.7 | 36 | 2.2 | 70 | NE | 14 | 6.3 | ..... | 10cs | 0 | NE | ..... | 0 | 0 | Cloudy | |
| Florence, Arizona | 28.24 | 717.3 | 29.84 | 757.9 | 51 | 10.6 | 93 | Calm | 0 | 0 | ..... | 0 | 2s | ..... | E | 0.17 | 4.3 | Fair | |
| Fort Bayard, New Mexico | 23.98 | 609.1 | 29.98 | 761.5 | 34 | 1.1 | 90 | NW | 3 | 1.3 | ..... | ..... | 10s | ..... | ..... | 0.03 | 0.8 | Cloudy | |
| Fort Craig, New Mexico | 25.32 | 643.1 | ..... | ..... | 42 | 5.6 | 83 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.09 | 2.3 | Cloudy | |
| Fort Gibson, Indian Ter | 29.55 | 750 6 | 30.11 | 764.8 | 38 | 3.3 | 81 | NE | 1 | 0.4 | ..... | 2cs | Fog | N | Calm | 0 | 0 | Fair | |
| Fort Griffin, Texas | 28.74 | 730.0 | 30.03 | 762.7 | 46 | 7.8 | 69 | E | 8 | 3.6 | ..... | 8cs | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Fort St. Michael, Alaska | 29.45 | 748.0 | 29.48 | 748.8 | 8 | —13.3 | 89 | NE | 25 | 11.2 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Fort Sill, Indian Territory | 28.85 | 732.8 | 29.98 | 761.5 | 45 | 7.2 | 84 | N | 6 | 2.7 | ..... | 0 | 5s | ..... | W | 0 | 0 | Fair | |
| Galveston, Texas | 29.89 | 759.2 | 29.93 | 760.2 | 64 | 17.8 | 67 | NE | 10 | 4.5 | ..... | 2c | Haze | W | Calm | 0 | 0 | Fair | |
| Grand Haven, Michigan | 29.12 | 739.6 | 29.78 | 756.4 | 38 | 3.3 | 81 | W | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.39 | 9.9 | Cloudy | |
| Indianapolis, Indiana | 29.10 | 739.1 | 29.88 | 758.9 | 40 | 4.4 | 65 | W | 14 | 6.3 | ..... | ..... | 10s | ..... | W | 0.29 | 7.4 | Cloudy | |
| Indianola, Texas | 29.87 | 758.7 | 29.90 | 759.4 | 69 | 20.6 | 52 | NE | 20 | 8.9 | ..... | 5k | 0 | SW | ..... | 0 | 0 | Fair | |
| Jacksboro, Texas | 28.92 | 734.6 | 30.08 | 764.0 | 44 | 6.7 | 68 | E | 8 | 3.6 | ..... | 1c | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 29.94 | 760.5 | 29.97 | 761.2 | 75 | 23.9 | 77 | SW | 9 | 4.0 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Keokuk, Iowa | 29.42 | 747.3 | 30.05 | 763.3 | 38 | 3.3 | 72 | W | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0.15 | 3.8 | Clear | |
| Key West, Florida | 29.98 | 761.5 | 30.01 | 762.2 | 78 | 25.6 | 86 | SE | 7 | 3.1 | ..... | 0 | 1s;hz | ..... | SE | 0 | 0 | Clear | |
| Kittyhawk, North Carolina | 29.85 | 758.2 | 29.87 | 758.7 | 49 | 9.4 | 100 | E | 3 | 1.3 | ..... | 2k | 5ks | W | W | 0.42 | 10.7 | Fair | |
| Knoxville, Tennessee | 28.92 | 734.6 | 29.91 | 759.7 | 53 | 11.7 | 80 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| La Crosse, Wisconsin | 29.22 | 742.2 | 29.98 | 761.5 | 36 | 2.2 | 80 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | |
| La Mesilla, New Mexico | 25.93 | 658.6 | 30.08 | 764.0 | 48 | 8.9 | 85 | NW | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.16 | 4.1 | Light rain | |
| Laredo, Texas | 29.44 | 747.8 | 29.78 | 756.4 | 54 | 12.2 | 74 | Calm | 0 | 0 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 29.26 | 743.2 | 30.14 | 765.5 | 35 | 1.7 | 90 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.66 | 753.4 | 30.01 | 762.2 | 45 | 7.2 | 80 | N | 4 | 1.8 | ..... | 0 | 1s | ..... | Calm | 0.02 | 0.5 | Clear | |
| Louisville, Kentucky | 29.37 | 746.0 | 29.93 | 760.2 | 43 | 6.1 | 43 | W | 20 | 8.9 | ..... | ..... | 10s | ..... | N | 0.12 | 3.3 | Cloudy | |
| Lynchburg, Virginia | 29.18 | 741.2 | 29.87 | 758.7 | 45 | 7.2 | 60 | Calm | 0 | 0 | ..... | 0 | 8ks | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Marquette, Michigan | 29.21 | 741.9 | 29.93 | 760.2 | 38 | 3.3 | 54 | NW | 12 | 5.4 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Mason, Texas | 28.30 | 718.8 | 30.05 | 763.5 | 54 | 12.2 | 55 | SE | 3 | 1.3 | ..... | 2s | 0 | Calm | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.77 | 756.1 | 30.09 | 764.3 | 47 | 8.3 | 71 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.10 | 739.1 | 29.83 | 757.7 | 37 | 2.8 | 90 | N | 16 | 7.2 | ..... | ..... | 10ks | ..... | N | 0.63 | 16.0 | Cloudy | |
| Mobile, Alabama | 29.97 | 761.2 | 30.02 | 762.5 | 63 | 17.2 | 94 | S | 4 | 1.8 | ..... | 5k | 0 | W | ..... | 0.26 | 6.6 | Fair | |
| Montgomery, Alabama | 29.76 | 755.9 | 30.00 | 762.0 | 58 | 14.4 | 93 | NW | 1 | 0.4 | ..... | 0 | Fog | ..... | NW | 0.19 | 4.8 | Clear | |
| Morgantown, West Virginia | 28.66 | 728.0 | 29.69 | 754.1 | 48 | 8.9 | 78 | W | 3 | 1.3 | ..... | ..... | 10s | ..... | SW | 0.05 | 1.3 | Cloudy | |
| Mt. Washington, N. H. | 23.52 | 597.4 | 29.88 | 758.9 | 26 | — 3.3 | 100 | NW | 18 | 8.0 | ..... | ..... | Fog | ..... | NW | 0 | 0 | Foggy | |
| Nashville, Tennessee | 29.50 | 749.3 | 30.04 | 763.0 | 47 | 8.3 | 62 | W | 5 | 2.2 | ..... | 10k | 0 | W | ..... | 0 | 0 | Cloudy | |
| New Haven, Connecticut | 29.78 | 756.4 | 29.90 | 759.4 | 46 | 7.8 | 62 | NW | 2 | 0.9 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| New London, Connecticut | 29.86 | 758.4 | 29.91 | 759.7 | 45 | 7.2 | 53 | Calm | 0 | 0 | ..... | 2ck | 8cs;s | W | Calm | 0 | 0 | Cloudy | |
| New Orleans, Louisiana | 29.91 | 759.7 | 29.97 | 761.2 | 66 | 18.9 | 89 | NE | 4 | 1.8 | ..... | 2k | 5s | Calm | SW | 0.02 | 0.5 | Fair | |
| Newport, Rhode Island | 29.83 | 757.7 | 29.83 | 758.9 | 43 | 6.1 | 67 | N | 3 | 1.3 | ..... | ..... | 10ks | ..... | W | 0 | 0 | Cloudy | |
| New York, New York | 29.72 | 754.9 | 29.90 | 759.4 | 44 | 6.7 | 75 | SW | 3 | 1.3 | ..... | Haze | 2s | Calm | Calm | 0 | 0 | Fair | |
| Norfolk, Virginia | 29.82 | 757.4 | 29.88 | 758.9 | 47 | 8.3 | 92 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.24 | 6.1 | Cloudy | |
| North Platte, Nebraska | 27.18 | 690.4 | 29.83 | 757.7 | 34 | 1.1 | 99 | W | 10 | 4.5 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Olympia, Washington Ter. | 30.22 | 767.6 | 30.26 | 768.6 | 42 | 5.6 | 83 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Omaha, Nebraska | 28.98 | 736.1 | 30.10 | 764.5 | 35 | 1.7 | 90 | Calm | 0 | 0 | ..... | 0 | Fog | ..... | Calm | 0.01 | 0.3 | Clear | |
| Oswego, New York | 29.54 | 750.3 | 29.86 | 758.4 | 48 | 8.9 | 56 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Pembina, Dakota | 29.10 | 739.1 | 29.95 | 760.7 | 35 | 1.7 | 80 | SE | 1 | 0.4 | ..... | 10k | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Philadelphia, Pennsylvania | 29.86 | 758.4 | 29.91 | 759.7 | 42 | 5.6 | 83 | SW | 1 | 0.4 | ..... | ..... | 10s | ..... | SW | 0.18 | 4.6 | Cloudy | |
| Phœnix, Arizona | 28.76 | 730.5 | 30.58 | 776.7 | 47 | 8.3 | 62 | N | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0.24 | 6.1 | Clear | |
| Pike's Peak, Colorado | 17.63 | 447.8 | 29.84 | 757.9 | 11 | —11.7 | 100 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.40 | 10.2 | Light snow | |
| Pioche, Nevada | 23.99 | 609.3 | 29.76 | 755.9 | 34 | 1.1 | 89 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | N | Inap. | Inap. | Cloudy | |
| Pittsburg, Pennsylvania | 28.89 | 733.8 | 29.69 | 754.1 | 45 | 7.2 | 92 | SE | 3 | 1.3 | ..... | ..... | 10s | ..... | SW | 0.17 | 4.3 | Threatening | |
| Port Huron, Michigan | 29.03 | 737.3 | 29.69 | 754.1 | 39 | 3.9 | 100 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.46 | 11.7 | Light rain | |
| Portland, Maine | 29.82 | 757.4 | 29.87 | 758.7 | 42 | 5.6 | 66 | N | 11 | 4.9 | ..... | 10k | Haze | NW | ..... | 0 | 0 | Cloudy | |
| Portland, Oregon | 30.28 | 769.1 | 30.38 | 771.6 | 44 | 6.7 | 92 | SE | 4 | 1.8 | ..... | ..... | 8s | ..... | Calm | 0.25 | 6.3 | Cloudy | |
| Prescott, Arizona | 24.68 | 626.9 | 30.04 | 763.0 | 35 | 1.7 | 80 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Dense fog | |
| Punta Rassa, Florida | 30.02 | 762.5 | 30.03 | 762.7 | 76 | 24.4 | 86 | S | 14 | 6.3 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Red Bluff, California | 29.88 | 758.9 | 30.25 | 768.3 | 48 | 8.9 | 63 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Rochester, New York | 29.18 | 741.2 | 29.80 | 756.9 | 41 | 5.0 | 82 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roseburg, Oregon | 29.80 | 756.9 | 30.40 | 772.1 | 39 | 3.9 | 100 | NE | 1 | 0.4 | ..... | Haze | 8s | ..... | Calm | 0.15 | 3.8 | Cloudy | |
| Sacramento, California | 30.04 | 763.0 | 30.13 | 765.3 | 53 | 11.7 | 67 | N | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.48 | 748.8 | 30.07 | 763.8 | 43 | 6.1 | 67 | NW | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap | Cloudy | |
| St. Marks, Florida | 29.96 | 761.0 | 29.97 | 761.2 | 70 | 21.1 | 98 | W | 1 | 0.4 | ..... | ..... | Fog | ..... | ..... | 0.15 | 3.8 | Foggy | |
| St. Paul, Minnesota | 29.16 | 740.7 | 30.02 | 762.5 | 32 | 0.0 | 79 | NW | 2 | 0.9 | ..... | 5cs | 0 | Calm | ..... | Inap. | Inap. | Fair | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.65 | 651.5 | 29.98 | 761.5 | 39 | 3.9 | 64 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| San Antonio, Texas | 29.21 | 741.9 | 29.80 | 756.9 | 56 | 13.3 | 51 | W | ..... | ..... | 5 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Diego, California | 29.97 | 761.2 | 30.04 | 763.0 | 52 | 11.1 | 86 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.36 | 9.1 | Cloudy | |
| Sandusky, Ohio | 29.06 | 738.1 | 29.74 | 755.4 | 42 | 5.6 | 91 | W | 16 | 7.2 | ..... | ..... | 10n | ..... | W | 0.64 | 16.3 | Light rain | |
| Sandy Hook, New Jersey | 29.88 | 758.9 | 29.90 | 759.4 | 43 | 6.1 | 83 | NW | 4 | 1.8 | ..... | 2k | 0 | N | ..... | 0 | 0 | Fair | |
| San Francisco, California | 30.10 | 764.5 | 30.17 | 766.3 | 51 | 10.6 | 72 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Santa Fé, New Mexico | 23.15 | 588.0 | 29.69 | 754.1 | 37 | 2.8 | 53 | E | 8 | 3.6 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Savannah, Georgia | 29.84 | 757.9 | 29.94 | 760.5 | 69 | 20.6 | 95 | SW | 4 | 1.8 | ..... | ..... | 10s | ..... | W | 0.93 | 23.6 | Cloudy | |
| Shreveport, Louisiana | 29.86 | 758.4 | 30.08 | 764.0 | 53 | 11.7 | 61 | NE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 29.88 | 758.9 | 29.91 | 759.7 | 65 | 18.3 | 94 | SW | 18 | 8.0 | ..... | 0 | 5ks | ..... | SW | 0.02 | 0.5 | Fair | |
| Springfield, Massachusetts | 29.68 | 753.9 | 29.81 | 757.2 | 44 | 6.7 | 60 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Stockton, Texas | 26.72 | 678.7 | 29.72 | 754.9 | 55 | 12.8 | 38 | W | 22 | 9.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.82 | 757.4 | 29.87 | 758.7 | 39 | 3.9 | 73 | N | 8 | 3.6 | ..... | 2cs | 5s | W | SW | 0 | 0 | Fair | |
| Toledo, Ohio | 29.01 | 737.6 | 29.72 | 754.9 | 43 | 6.1 | 83 | W | 14 | 6.3 | ..... | ..... | 10n | ..... | W | 0.13 | 3.3 | Light rain | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 44 | 6.7 | 67 | NE | ..... | ..... | 1 | 2k | 2s | Calm | Calm | 0.18 | 4.6 | Fair | |
| Tybee Island, Georgia | 29.90 | 759.4 | 29.93 | 760.2 | 68 | 20.0 | 90 | S | 6 | 2.7 | ..... | 5k | 0 | SW | ..... | 1.25 | 31.7 | Fair | |
| Umatilla, Oregon | 29.99 | 761.7 | ..... | ..... | 37 | 2.8 | 90 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.82 | 757.4 | 30.08 | 764.0 | 55 | 12.8 | 74 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Virginia City, Montana | 24.40 | 619.8 | 29.88 | 758.9 | 30 | — 1.1 | 78 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | |
| Visalia, California | 29.76 | 755.9 | 30.15 | 765.8 | 45 | 7.2 | 92 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Washington, D. C. | 29.76 | 755.9 | 29.88 | 758.9 | 43 | 6.1 | 100 | E | 5 | 2.2 | ..... | ..... | Fog | ..... | E | 0.55 | 14.0 | Foggy | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 42 | 5.6 | 74 | S | ..... | ..... | 3 | 0 | 5ks | ..... | Calm | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 29.80 | 756.9 | 29.88 | 758.9 | 66 | 18.9 | 94 | SW | 12 | 5.4 | ..... | 0 | 8s | ..... | SW | 0.02 | 0.5 | Fair | |
| Winnemucca, Nevada | 25.81 | 655.6 | 30.17 | 766.3 | 33 | 0.6 | 79 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.15 | 3.8 | Clear | |
| Wood's Holl, Mass | 29.82 | 757.4 | 29.87 | 758.7 | 45 | 7.2 | 60 | N | 5 | 2.2 | ..... | 5k | Haze | NW | Calm | 0 | 0 | Fair | |
| Yankton, Dakota | 28.79 | 731.3 | 30.14 | 765.5 | 28 | — 2.2 | 82 | W | 1 | 0.4 | ..... | 1cs | 0 | W | ..... | 0.08 | 2.0 | Clear | |
| Yuma, Arizona | 29.76 | 755.9 | 29.93 | 760.2 | 53 | 11.7 | 60 | Calm | 0 | 0 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 30.01 | 762.2 | 30.06 | 763.5 | 15.5 | — 9.2 | 91 | S | 10 | 4.5 | ..... | 2c | 4s | W | ..... | 0.01 | 0.3 | Cloudy | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 29.98 | 761.5 | 30.00 | 762.0 | 79 | 26.1 | 78 | SE | 4.8 | 2.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.11 | 764.8 | 30.12 | 765.0 | 79 | 26.1 | 78 | Calm | 0 | 0 | ..... | 2k | 0 | Calm | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.93 | 760.2 | 30.01 | 762.2 | 82.5 | 28.1 | ..... | SE | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | ..... | ..... | 30.01 | 762.2 | 79 | 26.1 | 95 | N | ..... | ..... | 3 | ..... | 10n | ..... | ..... | 2.196 | 55.63 | Raining | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | 30.05 | 763.2 | 30.06 | 763.4 | 84.2 | 29 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.23 | 640.8 | ..... | ..... | 68.0 | 20.0 | 80 | Calm | ..... | ..... | 0 | 10cs | 0 | ..... | ..... | 0.24 | 6.1 | ..... | Thomas Herran. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m., Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,560 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,146.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft.,or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er —1—. | Clouds. Amount. Low'r —0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.09 | 764.3 | 47 | 8.3 | 45 | 7.2 | 76 | WNW | 11 | 4.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear. ..... | |
| Navy Yard, Pensacola, Fla. | 30.11 | 764.8 | 69 | 20.6 | 62 | 16.7 | ?? | NW | 6 | 2.7 | ..... | ..... | 8 | ..... | SW | ... | ... | ..... | ..... | Raining..... | |
| Navy Yard, Portsmouth, N.H | 29.92 | 760.0 | 60 | 15.6 | 41 | 5.0 | 65 | NE | 1 | 0.4 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Naval Hospital, Yokohama, Japan | 30.15* | 765.8* | 55 | 12.8 | 45 | 7.2 | 53 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear ..... | |
| Adams, Panama | 29.97 | 761.2 | 80 | 26.7 | 80 | 26.7 | 67 | NNW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | |
| Alliance, Messina, Sicily | 29.62‡ | 752.3‡ | ..... | ..... | 54 | 12.2 | 93 | NW | ..... | ..... | 5–6 | ..... | 10 | ..... | S&E | ..... | ..... | ..... | ..... | Rainy ..... | |
| Ashuelot, Shanghai, China | 30.15* | 765.8* | 52 | 11.1 | 50 | 10.0 | 86 | SSE | ..... | ..... | 4 | ..... | 10 | ..... | SSW | ..... | ..... | ..... | ..... | D. clouds..... | |
| Canonicus, New Orleans, La. | 29.96 | 761.0 | 49 | 9.4 | 66 | 18.9 | 100 | NNE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Colorado, New York, N. Y. | 29.86‡ | 758.4‡ | ..... | ..... | 47 | 8.3 | 70 | NE | 1 | 0.4 | ..... | ..... | 5 | ..... | N | 0 | 0 | ..... | ..... | Hazy..... | |
| Constitution, N. 49° 17′ W. 5° 59′ | 29.58‡ | 751.3‡ | ..... | ..... | 47 | 8.3 | 85 | WNW | ..... | ..... | 4 | ..... | 4 | ..... | NW | ..... | ..... | Smooth | NW | Fair..... | |
| Despatch, Constantinople, Turkey. | 29.94 | 760.5 | 75 | 23.9 | 61 | 16.1 | 61 | SW | ..... | ..... | 1 | ..... | 8 | ..... | SW | ..... | ..... | Smooth | ..... | Fair ..... | |
| Enterprise, N. 26° 27′, W. 85° 11′ | 30.00‡ | 762.0‡ | ..... | ..... | 78 | 25.6 | 86 | SE | ..... | ..... | 4 | ..... | 5 | ..... | SE | ..... | ..... | Mod'ate | SE | Fair..... | |
| Franklin, Norfolk, Va. | 29.95‡ | 760.7‡ | ..... | ..... | 52 | 11.1 | 79 | SE | 2 | 0.9 | ..... | ..... | ..... | ..... | ..... | 2. | 5. | ..... | ..... | Overcast..... | |
| Gettysburg Valetta, Malta | 29.77‡ | 756.1‡ | ..... | ..... | 57 | 13.9 | 100 | WNW | ..... | ..... | 6 | ..... | 2 | ..... | Calm | 0 | 0 | ..... | ..... | Clear..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.08 | 764.0 | 74 | 23.3 | 73 | 22.8 | 76 | NE | ..... | ..... | 4 | ..... | 5 | ..... | NE | ..... | ..... | ..... | ..... | Fair ..... | |
| Marion, Vourla Bay, Turkey | 29.85 | 758.2 | 66 | 18.9 | 70 | 21.1 | 36 | S | ..... | ..... | 4 | ..... | 10 | ..... | Calm | 0 | 0 | Smooth | S | Cloudy..... | |
| Michigan, Erie, Pa. | 29.26 | 743.2 | 85 | 29.4 | 45 | 7.2 | 76 | SSE | ..... | ..... | 1 | ..... | 10 | ..... | SSE | ..... | ..... | ..... | ..... | Raining..... | |
| Monongahela. N. 23° 18′, E. 116° 45′ | 30 07* | 763.8* | 61 | 16.1 | 61 | 16.1 | 77 | ENE | ..... | ..... | 8 | ..... | 10 | ..... | ..... | Light | Light | Rough | NE | Squally ..... | |
| New Hampshire, Port Royal, S. C. | 30.14 | 765.5 | 70 | 21.1 | 68 | 20.0 | 100 | W | 4 | 1.8 | ..... | ..... | 8 | ..... | W | 0.32 | 8.1 | ..... | ..... | Cloudy..... | |
| Omaha, N. 18° 17′, W. 64° 52′. | 30.12* | 765.0* | 82 | 27.8 | 82 | 27.8 | 67 | NE | 2 | 0.9 | ..... | ..... | 4 | ..... | E | 0 | 0 | Smooth | ..... | Bright ..... | |
| Onward, Callao, Peru | 30.00† | 762.0† | ..... | ..... | 75 | 23.9 | 86 | SE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, N. 29° 30′, W. 88° 10′ | 30.03‡ | 762.7‡ | ..... | ..... | 71 | 21.7 | 95 | NNE | ..... | ..... | 1 | ..... | 8 | ... | SE | ..... | ..... | Smooth | ESE | Rainy..... | |
| Palos, Shanghai, China | 30.18* | 766.6* | 57 | 13.9 | 51 | 10.6 | 86 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Pensacola, Honolulu, H. I. | 30.28 | 769.1 | 72 | 22.2 | 69 | 20.6 | 80 | NW | 2 | 0.9 | ..... | ..... | 1 | ..... | ..... | 0.005 | 0.13 | ..... | ..... | Clear..... | |
| Plymouth. Norfolk, Va. | 29.95‡ | 760.7‡ | ..... | ..... | 50 | 10.0 | 86 | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | |
| Powhatan, Norfolk, Va. | 29.95‡ | 760.7‡ | ..... | ..... | 50 | 10.0 | 100 | E | 4.8 | 2.1 | ..... | ..... | 10 | ..... | ..... | 0.40 | 10.2 | Smooth | ..... | Overcast..... | |
| Ranger. Amoy, China | 30.19* | 766.8* | ..... | ..... | 61 | 16.1 | 77 | E | ..... | ..... | 0–1 | ..... | 10 | .... | Calm | ..... | ..... | ..... | ..... | D. clouds..... | |
| Rio Bravo. Brownsville, Texas | ..... | ..... | ..... | ..... | 66 | 18.9 | 94 | NW | ..... | ..... | 1 | ..... | 10 | ..... | NW | ..... | ..... | ..... | ..... | Foggy ..... | |
| Santee. Annapolis, Md | 29.97* | 761.2* | 60 | 15.6 | 45 | 7.2 | 92 | SE | ..... | ..... | 3 | ..... | 10 | ..... | S&W | 0.58 | 14.7 | ..... | ..... | Cloudy..... | |
| Saratoga, Washington, D. C. | 29.85* | 758.2* | ..... | ..... | 45 | 7.2 | 100 | ESE | ..... | ..... | 1 | ..... | 10 | ..... | S&W | Heavy | Heavy | ..... | ..... | Overcast.. ... | |
| St. Louis, League Island, Pa | 29.88 | 758.9 | 58 | 14 4 | 42 | 5.6 | 91 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | NW | 0.29 | 7.4 | ..... | ..... | Cloudy..... | |
| Supply, Havre, France | 29.70 | 754.4 | 48 | 8.9 | 44 | 6.7 | 68 | NNW | ..... | ..... | 3 | ..... | 8 | ..... | NW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Swatara, Aspinwall | 30.01* | 762.2* | ..... | ..... | 83 | 28.3 | 79 | N | ..... | ..... | 3 | ..... | 2 | ..... | NE | ..... | ..... | ..... | ..... | D. clouds..... | |
| Tennessee, N. 7° 22′ E. 76° 50′ | 29.81* | 757.2* | 88 | 31.1 | 86 | 30.0 | 72 | WSW | 6 | 2.7 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Slight | WSW | D. clouds..... | |
| Trenton, Piraeus, Greece | 29.80‡ | 756.9‡ | ..... | ..... | 68 | 20.0 | 74 | SSE | ..... | ..... | 2 | ..... | 8 | ..... | SE | 0 | 0 | Smooth | ..... | Hazy..... | |
| Tuscarora, N. 24° 15′ 31″ W. 110° 20′ 47″ | 30.03 | 762.7 | 65 | 18.3 | 63 | 17.2 | 78 | S | ..... | ..... | 2 | ..... | 2 | ..... | SSW | ..... | ..... | Smooth | ..... | Fair ..... | |
| Vandalia, N. 41° 08′, E. 10° 55′ | 29.47‡ | 748.5‡ | ..... | ..... | 53 | 11.7 | 67 | WSW | ..... | ..... | 5 | ..... | 5 | ..... | E; W | ..... | ..... | Mod'ate | NW | Hazy..... | |
| Wabash. Boston, Mass. | 29 88‡ | 758.9‡ | ..... | ..... | 41 | 5.0 | 74 | WNW | 2 | 0.9 | ..... | ..... | 8 | ..... | Calm | 0 | 0 | ..... | ..... | Fair..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level: corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. The time of the Monongahela's observations apparently vary slightly from 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Panama, N. 47° 10′, W. 124° 50′ | | | 30.29* | 769.4* | | | | S | | | 3 | | 10 | | | Mod'ate | S | Drizzling | Capt. Seabury. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, N. 28° 40′, E. 126° 59′ | | | | | 57 | 13.9 | | ESE | | | 6 | | 10 | | NNE | Rough | NNE | Overcast | Capt. Maury. |
| S. S. Colima, N. 9° 16′, W. 84° 32′ | | | 29.96† | 761.0† | 84 | 28.9 | 83 | NNW | | | 2 | | 2 | | SE | Small | SW | D. clouds | Capt. Searle. |
| S. S. Costaltica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, N. 51° 14′, W. 13° 00′ | | | 29.59† | 751.6† | 49 | 9.4 | ?? | NW | | | 5 | | Sck | | NW | Low | NW | Fair | Capt. W. H. Thompson |
| S. S. Celtic, N. 41° 38′, W. 53° 58′ | | | 29.74† | 755.4† | 49 | 9.4 | 57 | WSW | | | 6 | | 10 | Calm | | Strong sea. | SSW | Raining | Capt. B. Gleadell. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Aneroid.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, N. 40° 11′, W. 168° 55′ | | | 30.08* | 764.0* | | | | SSE | | | 4 | | Heavy | | SE | Mod'ate | WNW | D. clouds | Capt. John Metcalf. |
| S. S. Gaelic, Hong-Kong, China | | | 29.97† | 761.2† | 71 | 21.7 | ?? | Var. | | | 2 | | kn | | Var. | | | Raining | Capt. W. H. Kidley |
| S. S. Oceanic, N. 37° 09′, W. 175° 50′ | | | 29.86 | 758.4 | 46 | 7.8 | 84 | WNW | | | 5 | | 4 | | | | WNW | Squally | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg, N. 37° 34′, W. 35° 04′ | | | 29.88 | 758.9 | 64.5 | 18.1 | 86 | ESE | | | 4 | | k | | S | Rough | ENE | Squally | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAME OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 1—10. | 0—10. | 0—10. | From— | From— | Character | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois, N. 48° 43′, W. 31° 52′ | | | 30.22* | 767.6* | 55 | 12.8 | 100 | NW | | | 4 | | 10 | | W | Mod'ate | WSW | D. clouds | Captain Shackelford. |
| S. S. Indiana, Liverpool | | | 29.60† | 751.8† | 40 | 4.4 | ?? | WNW | | | 7 | | 9 | | ESE | | | Cloudy | Captain Sargent. |
| S. S. Ohio, Philadelphia, Pa | | | 29.85 | 758.2 | 48 | 8.9 | 78 | SW | | | 1 | | 5? | | SW | | | Clear? | Captain Morrison. |
| S. S. Pennsylvania | | | | | | | | | | | | | | | | | | | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid. †Aneroid; unreliable, corrected for elevation, instrumental error not known.

## RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
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## ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| S. S. Scandinavian, N. 53° 40′, W. 19° 9′ | | | 29.27 | 743.4 | 47 | 8.3 | | W | | | 6 | | 7 | | NW | Short | W | Snow-sq'alls | Capt. W. Richardson. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

## MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Crisfield, Md. | | | 29.82 | 757.4 | 54 | 12.2 | 74 | Calm | 0 | 0 | | | 10k | | NE | | | Overcast | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.92 | 760.0 | 4 | —15.6 | 87 | W | 10 | 4.5 | | | 10ks | | NE | | | Cloudy | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg'd.) Chief Signal Officer. U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 1, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.10 | 766.9 | 60.6 | 15.9 | 66 | NE | ..... | ..... | 6 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Dr. Ollive. |
| Nemours | ..... | ..... | 30.13 | 765.4 | 64.4 | 18.0 | 71 | WNW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Michel. |
| Algiers | ..... | ..... | 29.95 | 760.8 | 63 7 | 17.6 | 65 | WNW | ..... | ..... | 6 | ..... | 6 | ..... | ..... | 0.205 | 5.2 | Cloudy | Towilliere. |
| La Calle | ..... | ..... | 29.93 | 760 2 | 60 8 | 16 0 | 69 | NW | ..... | ..... | 7 | ..... | 7 | ..... | ..... | 0.157 | 4.0 | Very cloudy | Boulangeot. |
| Tunis | ..... | ..... | 29.95 | 760.8 | 60 4 | 15.8 | 55 | W | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Jacques. |
| Sfax | ..... | ..... | 30.04 | 763.0 | 62 6 | 17.0 | ..... | ENE | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0 | 0 | Covered | Gau. |
| Saida | ..... | ..... | 30.14 | 765.5 | 49.8 | 9.9 | ..... | WNW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0.007 | 0.17 | Cloudy | Herbin. |
| Tebessa | ..... | ..... | 29.92 | 759.9 | ..... | ..... | ..... | W | ..... | ..... | 7 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Watrin. |
| Geriville | ..... | ..... | 29.93 | 760.3 | 56.5 | 13.6 | 86 | N | ..... | ..... | 5 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Lemaitot. |
| Laghouat | ..... | ..... | 30.14 | 765.5 | 55.4 | 13.0 | 45 | W | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Bertrand. |
| Biskra | ..... | ..... | 30.08 | 764.0 | 67.1 | 19.5 | 53 | NW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Chauvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,380 ? m.; or 4,461.7 ? ft.

### AUSTRIAN SERIES.

Furnished by the cooperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 28.96 | 735.5 | 29.51 | 749.5 | 48.2 | 9.0 | 63 | SW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0.012 | 0.3 | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 28.69 | 728.7 | 29.46 | 748.2 | 45.0 | 7.2 | 69 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.150 | 3.8 | ..... | Dr. Wierzbiski. |
| Eperies | 28.56 | 725.3 | 29.44 | 747.7 | 42.4 | 5.8 | 87 | Calm | ..... | ..... | 0 | ..... | 10n | ..... | ..... | 0.959 | 24.35 | ..... | Julius Mikolik. |
| Gratz | 28.22 | 716 9 | 29.47 | 748.4 | 48.6 | 9.2 | 55 | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.142 | 3.60 | ..... | Andreas Rospini. |
| Hermannstadt | 27.99 | 710.9 | 29.37 | 746.1 | 55.8 | 13.2 | 68 | NE | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0.146 | 3.70 | ..... | Prof. Reissenberg |
| Kremsmünster | 27.99 | 710.9 | 29.32 | 744.6 | 46.6 | 8.1 | 54 | NE | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner |
| Lemberg | 28.37 | 720.6 | 29.36 | 745.7 | 42.8 | 6.0 | 82 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.012 | 0.3 | ..... | Dr. T. Stanecki. |
| Pola | 29.44 | 747.8 | 29.55 | 750.6 | 50.7 | 10.4 | 70 | S | ..... | ..... | 2 | ..... | 10ks | ..... | ..... | 0.862 | 21.9 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.01 | 736.9 | 29.47 | 748.6 | 50.7 | 10 4 | 71 | W | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.17 | 741.0 | 29.45 | 748.1 | 48.6 | 9.2 | 84 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.762 | 19.10 | ..... | Karl Stancel. |
| Trieste | 29.48 | 748.8 | 29.58 | 751.4 | 46.4 | 8.0 | 90 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.417 | 10.6 | Raining | P. Busin. |
| Vienna | 28.70 | 728.9 | 29.41 | 746.9 | 49.5 | 9.7 | 86 | SE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 27.60 | 700.9 | 29.11 | 739.5 | 33.6 | 0.9 | 98 | SW | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 0.331 | 8.4 | Snowing | Prof. M. Passau. |
| Brussels | 28.80 | 733.7 | 29.09 | 738.8 | 36.0 | 2.2 | 91 | WNW | ..... | ..... | 4 | ..... | 10 | ..... | NW | 0.260 | 6.6 | ..... | Royal Observatory. |
| Furnes | 29.16 | 740.6 | 29.18 | 741.2 | 42.4 | 5.8 | 72 | WNW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0.055 | 1.4 | ..... | M. E. de Cae. |
| Maeseyck | 28.87 | 733.2 | 28.99 | 736.4 | 40.3 | 4.6 | 91 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.47 set. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Upper 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 28.70 | 729.0 | 28.72 | 731.3 | 33.6 | 0.9 | ..... | WNW | 19 | 8.5 | ..... | ..... | 9 | ..... | ..... | 0.075 | 1.91 | Snow-show's | W. B swell. |
| Ardrossan | 28.90 | 734.0 | 28.92 | 734.6 | 43 | 6.1 | ..... | WNW | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.15 | 740.4 | 42.2 | 5.7 | ..... | W | 23 | 10.3 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.08 | 738.6 | 42.2 | 5.7 | ..... | W | 34 | 15.2 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 29.27 | 743.4 | 43.0 | 6.1 | ..... | WNW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | J. L. E. Dreyer. |
| Bradford, Yorkshire | 28.62 | 726.9 | 29.01 | 736.8 | 41.5 | 5.3 | ..... | NW | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0.10 | 2.5 | D. clouds | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.96 | 761.0 | 29.99 | 761.7 | 83.0 | 28.3 | ..... | NE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.13 | 739.9 | 45.0 | 7.2 | ..... | WNW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | H. Todd. [H. C. |
| Cardington | ..... | ..... | 29.14 | 740.1 | 45.0 | 7.2 | ..... | NW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | John McLaren. |
| Chatham, School M. E. | 29.04 | 737.6 | 29.17 | 740.9 | 44.2 | 6.8 | ..... | W | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | Overcast | Lt. W. G. Morris, R. E. |
| Dartmoor | 27.83 | 706.9 | 29.31 | 744.5 | 39.0 | 3.9 | ..... | NW | ..... | ..... | 5 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | Alexander Watt. |
| Donaghadee | 29.04 | 737.6 | 29.07 | 738.4 | 43 | 6.1 | ..... | N | ..... | ..... | 5 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | J. Mac Gowan. |
| Dover | 29.15 | 740.4 | 29.18 | 741.2 | 40 | 4.4 | ..... | NNW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.08 | 738.6 | 42.1 | 5.6 | ..... | NW | 10.6 | 4.7 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Squally | Thomas Mackereth. |
| Falmouth, Observatory | 29.13 | 740.0 | 29.36 | 745.7 | 44.4 | 6.9 | ..... | WNW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds | The Staff. |
| Fort Napier, (Natal) | 27.81 | 706.1 | 30.01 | 762.2 | 78.0 | 25.6 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.69 | 754.1 | 29.92 | 760.0 | 88.0 | 31.1 | ..... | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's College | ..... | ..... | 29.48 | 748.8 | 43 | 6.1 | ..... | W | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.09 | 764.3 | 30.14 | 765.5 | 62.5 | 16.9 | ..... | W | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | Corpl. Wm. Allen, A. H. C. |
| Glasgow, Observatory | 28.70 | 729.0 | 28.90 | 734.0 | 41.0 | 5.0 | ..... | WNW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | D. G. Maclean. |
| Great Yarmouth | 29.08 | 738.6 | 29.08 | 738.6 | 43 | 6.1 | ..... | WNW | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | Misty | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.00 | 736.6 | 29.17 | 740.9 | 45.7 | 7.6 | ..... | W | ..... | ..... | 4 | ..... | 6 | ..... | ..... | Blank | Blank | D. clouds | The Staff, for G. B. Airy. |
| Guernsey | 29.09 | 738.9 | 29.32 | 744.7 | 45 | 7.2 | ..... | NW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Dr. S. E. Hoskins, F. R. S. |
| Helston | ..... | ..... | 29.36 | 745.7 | 48 | 8.9 | ..... | WNW | ..... | ..... | 2 | ..... | 2c | ..... | ..... | 0.17 | 4.3 | Fine | M. P. Moyle. |
| Holyhead | 29.11 | 739.4 | 29.16 | 740.7 | 45 | 7.2 | ..... | WNW | ..... | ..... | 6 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | John Tilston. |
| Jersey | 29.06 | 738.1 | 29.36 | 745.7 | 43.5 | 6.4 | ..... | WNW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | Blank | Blank | D. clouds | J. Fisher. |
| Kew, Observatory | ..... | ..... | 29.19 | 741.4 | 43.9 | 6.6 | ..... | W | 15 | 6.7 | ..... | ..... | 6k | ..... | ..... | ..... | ..... | D. clouds | The Staff. |
| Kingstown | 29.16 | 740.7 | 29.19 | 741.4 | 42 | 5.6 | ..... | NW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | Blank | Blank | D. clouds | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.11 | 739.4 | 43.8 | 6.6 | ..... | W | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | Wm. J. Harrison, F. G. S. |
| Malta, (Mediterranean) | 29.84 | 757.9 | 29.92 | 760.0 | 58.0 | 14.4 | ..... | SW | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | Sgt. Fred. Travis, A. H. |
| Nairn | 28.72 | 729.5 | 28.81 | 731.8 | 32 | 0.0 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | W. H. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 29.97 | 761.2 | 80.0 | 26.7 | ..... | SE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 28.91 | 734.3 | 29.09 | 738.9 | 43.3 | 6.3 | ..... | WNW | ..... | ..... | 6 | ..... | 6c;ck; ks;k;d] | ... | W | 0.017 | 0.43 | D. clouds | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 28.61 | 726.7 | 29.13 | 739.9 | 43.0 | 6.1 | ..... | W | ..... | ..... | 6 | ..... | 8 | ..... | ..... | Blank | Blank | Threatening | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.18 | 741.2 | 44 | 6 7 | ..... | W | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | Mr. Lucas. |
| Plymouth | 29.23 | 742.4 | 29.30 | 744.2 | 49.0 | 9.4 | ..... | NW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | Drizzling | John Merrifield. |
| Roche's Point | 29.28 | 743.7 | 29.32 | 744.7 | 46 | 7.8 | ..... | WNW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | Fine | W. Kennedy. |
| Saint Ann's Head | 29.11 | 739.4 | 29.27 | 743.4 | 43 | 6.1 | ..... | WNW | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 28.82 | 732.0 | 36 | 2.2 | ..... | NE | 5 | 2.2 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | Misty | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 29.53 | 750.0 | 75.2 | 24.0 | ..... | SW | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Sergt. W. H. Lyne. |
| Sheffield | 28.80 | 731.5 | 29.08 | 738.6 | 46.0 | 7.8 | ..... | SW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0.12 | 3.0 | D. clouds | W. F. Cooper. |
| Silloth Rectory | 29.03 | 760.2 | 29.95 | 761.0 | 45.4 | 7.4 | 70 | NW | ..... | ..... | 5 | ..... | 4 | ..... | ..... | 0 | 0 | D. clouds | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 28.65 | 727.7 | 29.05 | 737.9 | 40.9 | 4.9 | ..... | W | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Squally | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 29.84 | 757.9 | 39 | 3.9 | ..... | NNW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded | John Sutherland. |
| Stratfield Turgiss | 29.00 | 736.6 | 29.21 | 741.9 | 44.6 | 7.0 | ..... | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Rev. C. H. Grimm, F. M. |
| Thurso | ..... | ..... | 28.79 | 731.3 | 39 | 3.9 | ..... | NNE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 29.36 | 745.7 | 50 | 10.0 | ..... | NW | ..... | ..... | 6 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 29.34 | 745.2 | 42.5 | 5.8 | ..... | WSW | 9 | 4.0 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | The Staff. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.82 | 757.4 | 66.0 | 18.9 | 81 | NW | ..... | ..... | 5 | ..... | 7km | ..... | ..... | 0.60 | 15.2 | Fine | Francis Abbott, F. R. A. S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.69 | 754.1 | 29.88 | 759.0 | 82.4 | 28.0 | 73 | ESE | 11.0 | 4.9 | ..... | 8 | 2 | ..... | ..... | 0.53 | 13.5 | Overcast | C. Meldram. |
| Melbourne, Observatory | 30.12 | 765.0 | 30.21 | 767.3 | 56.0 | 13.3 | 93 | W | 7 | 3.1 | ..... | ..... | 10 | ..... | ..... | 0.02 | 0.5 | Dull | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m.

| MARINE SERIES. VESSELS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Upper 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Algeria, N. 51° 20′ W. 14° 0′ | ..... | ..... | 29.41 | 747 0 | 49.0 | 9.4 | ..... | NW | ..... | ..... | 7 | ..... | 5 | ..... | ..... | 20* | NW | Raining | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. C. Prehn. [R. |
| S. S. Peruvian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Alex. Simpson |
| S. S. Yorkshire, N. 43° 55′ W. 41° 40′ | ..... | ..... | 29.87 | 758.7 | 59 | 15.0 | ..... | ENE | ..... | ..... | 5 | ..... | 9 | ..... | ..... | 5 | ENE | Raining | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.22 | 666.0 | | | 68.0 | 20.0 | 91 | SE | | | 1 | p | | | | 0 | 0 | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.13 | 739.9 | 29.18 | 741.1 | 42.4 | 5.8 | 75 | S | | | 4 | | 2 | | | | | |
| Fanöe | 29.09 | 736.6 | 29.02 | 737.1 | 38.7 | 3.7 | 87 | S | | | 4 | | 10 | | | | | Snowing |
| Godthaab, (Greenland) | 29.96 | 761.0 | 30.00 | 762.1 | 24.1 | — 4.4 | 91 | NW | | | 4 | | 10 | | | | | |
| Stykkisholm, (Iceland) | 29.63 | 752.5 | 29.67 | 753.6 | 27.9 | — 2.3 | 96 | E | | | 6 | | 5 | | | | | |
| Thorshavn, (Faröe) | 28.93 | 734.9 | 28.97 | 735.8 | 37.0 | 2.8 | 86 | NNE | | | 5 | | 10 | | | | | |
| Vestervig | 28.86 | 733.0 | 29.03 | 737.3 | 37.8 | 3.2 | 80 | SE | | | 4 | | 8 | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 28.67 | 728.2 | 29.22 | 742.2 | 44.6 | 7 | 70 | N | | | 4 | | 8 | | | 0.650 | 16.50 | Very cloudy | Collignon, Director. |
| Amiens, Normal School | | | | | | | | | | | | | | | | | | | Bonvarne, Director. |
| Avignon, Normal School | 29.53 | 750.1 | 29.61 | 752.1 | 46.6 | 8.1 | 80 | SE | | | 2 | | 10 | | S | 0.12 | 3. | Covered | Mr. Giraud, Director |
| Bar-sur-Seine | 28.67 | 728.1 | 29.22 | 742.3 | 42.8 | 6.0 | 80 | NW | | | 6 | | 10 | | NW | 0.157 | 4.0 | Covered | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 40.5 | 4.7 | 44 | NW | | | 4 | | 2 | | WNW | 0.161 | 4.10 | Slightly cl'dy | Normal School. |
| Besançon | 28.39 | 721.1 | 29.28 | 743.6 | 44.6 | 7 | 77 | S | | | 8 | | 8 | | S | 0.035 | 0.9 | Very cloudy | Normal School. |
| Bourg-en-Bresse | 28.51 | 724.2 | 29.40 | 746.8 | 42.4 | 5.8 | 73 | S | | | 6 | | 10n | | S | 0.12 | 3. | Raining | Normal School. |
| Bourges, Normal School | 28.73 | 729.8 | 29.28 | 743.7 | 46.4 | 8 | 91 | W | | | 6 | | 8 | | W | 0 | 0 | Very cloudy | A. Wagner, Director. |
| Brest, Naval Observatory | 29.13 | 740.0 | 29.35 | 745.5 | 49.1 | 9.5 | 63 | NW | | | 3 | | 7n | | NW | 0.177 | 4.50 | | The Staff. |
| Carcassonne, Normal School | 29.15 | 740.5 | 29.56 | 750.8 | 59.0 | 15 | 64 | W | | | 6 | | 5 | | W | 0.322 | 8.2 | Cloudy | Vateau, Director. |
| Caen | 29.25 | 742.9 | 29.32 | 744.8 | 45.7 | 7.6 | 55 | W | | | 2 | | 1 | | W | 0.16 | 4. | Clear | Normal School. |
| Chartres, Normal School | 28.67 | 728.3 | 29.24 | 742.7 | 41.4 | 5.2 | 97 | NNW | | | 6 | | 9 | | NE | 0.47 | 12. | | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 28.85 | 732.9 | 29.17 | 741.0 | 40.6 | 4.8 | 62 | W | | | 3 | | 10kn | | W | 0.276 | 7.0 | Covered | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 27.98 | 710.8 | 29.31 | 744.4 | 52.9 | 11.6 | 46 | W | | | 4 | | 8 | | SW | 0.008 | 0.2 | Very cloudy | Alluard, Director. |
| Commercy, Normal School | 28.31 | 719.1 | 29.20 | 741.6 | 38.1 | 3.4 | 93 | WSW | | | 8 | | 10 | | WSW | 0 | 0 | Covered | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.58 | 726.0 | 29.72 | 755.0 | 48.4 | 9.1 | 52 | NW | | | 2 | | 10 | | W | 0 | 0 | Covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 29.21 | 741.8 | 29.41 | 747.1 | 53.6 | 12.0 | 69 | W | | | 6 | | 8 | | NW | 0.28 | 7. | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.02 | 737.2 | 29.33 | 745.0 | 45.7 | 7.6 | 64 | NNW | | | 4 | | 8 | | NW | 0.335 | 8.5 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.39 | 721.0 | 29.30 | 744.2 | 42.8 | 6 | 85 | S | | | 8 | | 5 | | | 0.04 | 1. | Snowing | Voudez, Director. |
| Lorient, Naval Observatory | 29.28 | 743.8 | 29.39 | 746.4 | 51.4 | 10.8 | 65 | NW | | | 3 | | 5 | | NW | 0.138 | 3.5 | ½ Covered | T. Carré, Director. |
| Mâcon, Normal School | 28.67 | 728.2 | 29.32 | 744.6 | 43.2 | 6.2 | 82 | W | | | 4 | | 10 | | N | 0 | 0 | Covered | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | 28.13 | 714.6 | 29.18 | 741.2 | 38.8 | 3.8 | 87 | NE | | | 2 | | 10 | | W | 0 | 0 | Covered | Normal School. |
| Nismes, Normal School | 29.37 | 745.9 | 29.57 | 751.0 | 51.8 | 11 | 86 | W | | | 2 | | 5 | | SW | 0.04 | 1. | Cloudy | Boyer, Director. |
| Orleans, Normal School | 28.97 | 735.8 | 29.34 | 745.3 | 60.8 | 16 | 91 | NW | | | 4 | | 8 | | NW | 0.20 | 5. | Very cloudy | Bernard, Director. |
| Paris, Observatory | 29.02 | 737.2 | 29.26 | 743.3 | 42.3 | 5.7 | 45 | WNW | | | 3 | | 9 | | NW | 0.327 | 8.31 | Almost cov'd | National Observatory. |
| Privas | 28.54 | 725.0 | 29.62 | 752.3 | 44.6 | 7 | 69 | N | | | 4 | | 10 | | N | 0 | 0 | Covered | Normal School |
| Puy de Dome (Summit) | | | | | | | | | | | | | | | | | | | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.43 | 747.6 | 29.47 | 748.4 | 54.5 | 12.5 | 78 | WSW | | | 5 | | 8 | | WSW | 0.16 | 4. | ¾ Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.20 | 741.7 | 29.29 | 743.9 | 46.6 | 8.1 | 40 | NNW | | | 6 | | 5 | | W | 0.118 | 3.0 | Cloudy | F. Lucard, Director. |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | M. H. Hercouet. |
| Tarbes, Normal School | 28.54 | 724.8 | 29.61 | 752.2 | 50.0 | 10 | 74 | W | | | 6 | | 10 | | | 0.35 | 9. | Raining | T. Hugues, Director. |
| Villefranche | 28.76 | 730.5 | 29.46 | 748.3 | 55.8 | 13.2 | 92 | W | | | 2 | | 5 | | NW | 0.047 | 1.2 | Cloudy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.82 | 757.5 | 29.85 | 758.2 | 77.7 | 25.4 | | | | | | | | | | 0 | 0 | | L'Abbé Marchési. |
| Lyons | | | 29.46 | 748.2 | 43.3 | 6.3 | | | | | | | 9 | | | | | Rainy | M. Jeys. |
| Marseilles, Observatory | | | 29.63 | 752.6 | 52.3 | 11.3 | 71 | SE | | | 1 | | 9 | | | 0.039 | 1.00 | Rainy | The Staff. |
| Mont-Louis | 24.50 | 622.2 | 29.81 | 757.2 | 38.7 | 3.7 | 56 | SW | 18.6 | 8.33 | | | 3 | | W | 0.020 | 0.5 | | Mr. Falguère. |
| Nice | | | 29.56 | 750.8 | 55.9 | 13.3 | 57 | NW | | | 8 | | 6 | | | 0 | 0 | Cloudy | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 28.97 | 735.9 | 29.25 | 742.9 | 41.7 | 5.4 | 56 | NW | | | 4 | | 10 | | WNW | 0.35 | 8.9 | | Marié Davy, Director. |
| Perpignan | | | 29.62 | 752.4 | 57.2 | 14.0 | 59 | S | 7.4 | 3.33 | | | 4 | | WNW | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.07 | 560.5 | | | 25.7 | — 3.5 | | NW | | | 8–10 | | 10 | | | 0.453 | 11.5 | Snowy | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.10 | 739.2 | 29.27 | 743.4 | 42.3 | 5.7 | 52 | NW | | | 2 | | 10 | | WNW | 0.362 | 9.2 | Covered | E. Renou. |
| Toulouse, Observatory | 28.89 | 733.9 | 29.61 | 752.0 | 53.6 | 12.0 | 78 | WSW | | | 6 | | 10 | | | 0.380 | 9.65 | Raining | The Staff. |
| Tours | 29.12 | 739.7 | 29.32 | 744.7 | 48.9 | 9.4 | 69 | W | | | 3 | | 7 | | WNW | 0.213 | 5.4 | | C. Marquet. |
| Versailles, (near Paris) | | | 29.30 | 744.3 | 43.2 | 6.2 | 51 | WNW | | | 3 | | 8 | | | 0.384 | 9.76 | Almost cov'd | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 29.91 | 759.8 | 29.94 | 760.4 | 57.0 | 13.9 | 95 | SE | 4.0 | 1.8 | | | 0 | | | 0.138 | 3.5 | Clear | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 1–10 | Clouds. Amount. Low'r 1–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | |
| Berlin | | | | | | | | | | | | | | | | | | | |
| Breslau | 29.09 | 738.8 | 29.26 | 743.1 | 49.6 | 9.8 | 40 | S | | | 1 | | 9 | | | 0.016 | 0.4 | | Prof. Dr. Hoh. |
| Carlsruhe | 28.88 | 733.6 | 29.40 | 746.8 | 49.8 | 9.9 | 44 | SSE | | | 2 | | 6 | | | 0 | 0 | | Prof. Arndt. |
| Cassel | 28.77 | 730.8 | 29.19 | 741.4 | 44.2 | 6.8 | 68 | SW | | | 2 | | 10 | | | 0.244 | 6.2 | | Royal University Obs'y |
| Crefeld | 28.54 | 725.0 | 29.13 | 740.0 | 47.8 | 8.8 | 61 | W | | | 4 | | 7 | SW | | 0.230 | 5.86 | | Albert Senz. |
| Emden | 28.84 | 732.5 | 29.00 | 736.5 | 40.1 | 4.5 | 88 | S | | | 5 | | 10 | | | 0.24 | 6. | Raining | Dr. H. Möll. |
| Frankfort on the Main | 29.07 | 738.3 | 29.10 | 739.2 | 34.5 | 1.4 | 98 | S | | | 1 | | 10 | | | 0.445 | 11.3 | Snowing | Director Lose. |
| Friedrichshafen | 28.86 | 733.1 | 29.23 | 742.5 | 39.9 | 4.4 | 74 | SSW | | | 2 | | 10 | | | Inap. | Inap. | Raining | Prof. Prestel. |
| Hamburg | 27.89 | 708.4 | 29.32 | 744.6 | 44.1 | 6.7 | 54 | S | | | 3 | | 9 | W | | 0.177 | 4.5 | Raining | Physical Society. |
| Kiel | 29.03 | 737.3 | 29.10 | 739.1 | 45.7 | 7.6 | 61 | S | | | 5 | | 8kçs | | | 0.016 | 0.4 | Fair | M. Wilhelm. |
| Königsberg, (Prussia) | 29.06 | 738.0 | 29.07 | 738.4 | 45.5 | 7.5 | 61 | SSE | | | 5 | | 10 | | | 0 | 0 | | Captain F. Hegemann. |
| Köslin | 29.34 | 745.2 | 29.42 | 747.3 | 46.8 | 8.2 | 49 | W | | | 3 | | 6 | | | 0.024 | 0.6 | | Prof. G. Karsten. |
| Leipsic, Observatory | | | 29.31 | 744.5 | 47.1 | 8.4 | | S | | | 4 | | 2 | | | 0 | 0 | | Prof. E. Luther |
| Memel, Naval School | 28.87 | 733 2 | 29.28 | 743.8 | 47.8 | 8.8 | 42 | S | | | 5 | | 5 | SW | | 0 | 0 | Stormy | H. Müller. |
| Neufahrwasser | 29.41 | 746.9 | 29.45 | 748.1 | 40.8 | 4.9 | 79 | NW | | | 1 | | 7ck | S | | | | | Prof. Bruhns. |
| Posen | 29.39 | 746.6 | 29.41 | 747.0 | 44.1 | 6.7 | 63 | ESE | | | 3 | | 7 | SW | | 0 | 0 | | Reinbrecht von Skalweit. |
| Strassburg Obs., (in Alsace | 29.20 | 741.6 | 29.48 | 748.9 | 48.4 | 9.1 | 53 | SE | | | 6 | | 10 | | | 0 | 0 | | A. Lothes. |
| Stuttgart | 28.66 | 727.9 | 29.21 | 741.9 | 44.6 | 7.0 | 70 | S | | | 6 | | 10 | SW | | 0.001 | 0.03 | Raining | Dr. Magener. |
| Treves, (Trier) | 28.32 | 719.3 | 29.25 | 743.0 | 44.1 | 6.7 | 54 | W | | | 5 | | 10 | | | 0.043 | 1.1 | Raining | Dr. Schur. |
| Weissenburg, (Bavaria) | 28.52 | 724.4 | 29.03 | 737.3 | 38.8 | 3.8 | 83 | SW | | | 7 | | 10 | | | 0.106 | 2.70 | | Prof. Schoder. |
| Wustrow, Naval School | 27.80 | 706.2 | 29.28 | 743.8 | 45.1 | 7 3 | 44 | SSW | 18 | 8 | | | 9ck | | SW | 0 | 0 | Squally | Prof. Flesch. |
| | 29.23 | 742.4 | 29.27 | 743 4 | 46.2 | 7.9 | 54 | SSE | | | 5 | | 8 | | | 0.020 | 0.5 | | Dr. Von Bebber. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | E. F. Schütz. |
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NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.24 | 742.8 | 29.63 | 752.6 | 66.9 | 19.4 | | SW | | | 4.0 | | | | | | | ½ clear | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.71 | 754.5 | 29.76 | 755.8 | 81.5 | 27.5 | 61 | SW | 23? | 10.3? | | 0 | | | | 0 | 0 | Blue sky | |
| Deesa | 29 32 | 744.8 | 29.79 | 756.7 | 90.8 | 32.7 | 35 | Calm | | | | 1 | WNW | | | 0 | 0 | D. clouds | |
| Bombay | 29.75 | 755.6 | 29.79 | 756.6 | 82.7 | 28.2 | 74 | WNW | 21 | 9.4 | | 2 | WSW | | | 0 | 0 | D. clouds | |
| Poona | 27.74 | 704.5 | 29.68 | 754.0 | 91.5 | 33.1 | 32 | NNE | | | | 3 | E | | | 0 | 0 | Dust-whirl | |
| Lahore | 28.94 | 735.2 | 29.68 | 753.9 | 82.7 | 28.2 | 51 | NE | 3.5 | 1.6 | | 10 | | | | 0 | 0 | Cloudy | |
| Belgaum | 27.27 | 692.7 | 29.77 | 756.1 | 83.7 | 28.7 | 67 | W | 5 | 2.2 | | 5 | | W | | 0 | 0 | Misty | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.93 | 734.8 | 29.82 | 757.3 | 87.4 | 30.8 | 45 | Calm | 2.8 | 1.2 | | 10 | | | | 0 | 0 | | |
| Agra | 29.16 | 740.8 | 29.71 | 754.6 | 97.6 | 36.4 | 26 | Calm | | | | 6 | W | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.66 | 728.0 | 29.66 | 753.4 | 99.4 | 37.4 | 24 | Calm | 4.4 | 2.0 | | 2 | | E | 0 | 0 | D. clouds | | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.34 | 745.2 | 29.70 | 754.3 | 99.1 | 37.3 | 40 | S | 2.3 | 1.0 | | 10 | | | | 0 | 0 | Overcast | |
| Allahabad | 29.39 | 746.5 | 29.69 | 754.1 | 98.4 | 36.9 | 26 | Calm | 0.7 | 0.3 | | 2 | W | | | 0 | 0 | D. clouds | |
| Patna | 29.53 | 750.1 | 29.71 | 754.5 | 96.6 | 35.9 | 27 | E | 1.4 | 0.6 | | 4 | E | E | | 0 | 0 | D. clouds | |
| Hazaribagh | 27.74 | 704.7 | 29.69 | 754.1 | 93.8 | 34.3 | 15 | WNW | 5.6 | 2.5 | | 0 | | | | 0 | 0 | Blue sky | |
| Cuttack | 29.70 | 754.3 | 29.78 | 756.4 | 86.3 | 30.2 | 63 | S | 7.7 | 3.4 | | 9 | | | | 0 | 0 | D. clouds | |
| Calcutta (Allpore) | 29.75 | 755.7 | 29.78 | 756.3 | 85.5 | 29.7 | 74 | S | 11 | 4.9 | | 3 | | SW | | 0 | 0 | D. clouds | |
| Goalpara | 29.44 | 747.8 | 29.83 | 757.8 | 77.1 | 25.1 | 68 | E | 7.4 | 3.3 | | 0 | | | | 0.77 | 19.6 | Blue sky | |
| Chittagong | 29.77 | 756.1 | 29.86 | 758.4 | 83.3 | 28.5 | 77 | SW | | | | 2 | | | | 0 | 0 | | |
| Sibsagar | 29.57 | 751.0 | 29.91 | 759.6 | 73.6 | 23.1 | 86 | SW | 2.8 | 1.2 | | 3 | | | | 0.45 | 11.4 | Blue sky | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.37 | 720.5 | 29.70 | 754.4 | 90.0 | 32.2 | 28 | NW | 3.4 | 1.5 | | 2 | NE | | | 0 | 0 | D. clouds | |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.12 | 739.7 | 29.54 | 750.2 | 45.9 | 7.7 | 78 | SW | 4.3 | 1.9 | ..... | ..... | 10 | ..... | ..... | 0.157 | 4.0 | ..... | Prof. Giovanni Codig. |
| Padua | 29.42 | 747.3 | 29.53 | 750.1 | 47.5 | 8.6 | 77 | N | 3.8 | 1.7 | ..... | ..... | 10 | W | ..... | 0.165 | 4.2 | ..... | Prof. Dott. Lorenzoni |
| Vicenza | 29.34 | 745.2 | 29.53 | 750.1 | 47.5 | 8.6 | 75 | SE | 1.3 | 0.6 | ..... | ..... | 9 | S | ..... | 0.055 | 1.4 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.19 | 715.9 | 29.51 | 749.5 | 52.2 | 11.2 | 33 | SW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0.059 | 1.5 | ..... | Prof. Trionfini Carlo. |
| Milan | 28.97 | 735.9 | 29.50 | 749.2 | 52.5 | 11.4 | ..... | SW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0.075 | 1.9 | ..... | Prof. Schiaparelli. |
| Moncalieri | 28.60 | 726.3 | 29.51 | 749.5 | 48.0 | 8.9 | 43 | ESE | 4.3 | 1.9 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 27.60 | 701.0 | 29.52 | 749.9 | 41.4 | 5.2 | 23 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.29 | 744.0 | 29.52 | 749.7 | 53.4 | 11.9 | 56 | SW | ..... | ..... | 8 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. L. Vassalio. |
| Genoa | 29.40 | 746.7 | 29.57 | 751.0 | 53.4 | 11.9 | 50 | S | 11.2 | 5.0 | ..... | ..... | 8 | S | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.24 | 742.6 | 29.56 | 750.7 | 53.6 | 12.0 | 47 | SSW | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0.268 | 6.8 | ..... | Prof. P. Pigorini. |
| Florence | 29.39 | 746.4 | 29.64 | 752.9 | 50.9 | 10.5 | 46 | W | ..... | ..... | 4 | ..... | 5 | W | ..... | 0.043 | 1.1 | ..... | Cav. F. Meucci. |
| Leghorn | 29.54 | 750.3 | 29.63 | 752.5 | 60.8 | 16.0 | 19 | WSW | 17.4 | 7.8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 29.55 | 750.5 | 29.60 | 751.8 | 48.4 | 9.1 | ..... | NE | 6 3 | 2.8 | ..... | ..... | 9 | N | ..... | 0.020 | 0.5 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.03 | 712.0 | 29.60 | 751.7 | 50.0 | 10.0 | 48 | SW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0.394 | 10.0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.57 | 751.6 | 29.68 | 753.8 | 54.1 | 12.3 | 64 | NNW | ..... | ..... | 6 | ..... | 3 | S | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.54 | 750.3 | 29.72 | 754.8 | 54.7 | 12.6 | 55 | SW | 11.9 | 5.3 | ..... | ..... | 5 | ..... | ..... | 0.224 | 5.7 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U. | 29.57 | 751.1 | 29.77 | 756.2 | 55.4 | 13.0 | 59 | W | ..... | ..... | 2 | ..... | 5 | NW | ..... | 0.307 | 7.8 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 56.7 | 13.7 | 58 | SSE | 13.7 | 6.1 | ..... | ..... | 2 | ..... | ..... | 0.039 | 1.0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.59 | 751.6 | 29.78 | 756.4 | 59.0 | 15.0 | 41 | NW | ..... | ..... | 4 | ..... | 2 | NW | ..... | 0.059 | 1.5 | ..... | Prof. A. Pacinotti. |
| Cosenza | 28.93 | 734.8 | 29.82 | 757.3 | 51.1 | 10.6 | 72 | SW | 5.6 | 2.5 | ..... | ..... | 9 | ..... | ..... | 0.039 | 1.0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.56 | 750 8 | 29.81 | 757.2 | 55.6 | 13.1 | 51 | WNW | 10.5 | 4.7 | ..... | ..... | 7 | WNW | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.73 | 755.1 | 29.80 | 757.0 | 60.8 | 16.0 | 41 | WNW | ..... | ..... | 6 | ..... | 6 | WNW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.22 | 742.3 | 29.78 | 756.4 | 52.0 | 11.1 | 55 | ESE | 4.9 | 2.2 | ..... | ..... | 5 | S | ..... | 0.295 | 7.5 | ..... | Prof. F. Brioschi |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 30.32 | 770 1 | 30.39 | 771.9 | 54.3 | 12 4 | 78 | S | 7.7 | 3.4 | ..... | 2ck;cs | 0 | ..... | ..... | 0.125 | 3.20 | ..... | The Observatory. |
| Tokei (Yeddo) University | 30.27 | 768.8 | 30.37 | 771.4 | 54.5? | 12.2? | 92 | SSW | 7 | 3.1 | ..... | ..... | 8s | ..... | ..... | 0 | 0 | Threatening | Prof. P. V. Veeder. |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 68.9 | 20.5 | 48 | Calm | 0 | 0 | ..... | 5c | 5c | ..... | ..... | 0 | 0 | Covered | L. Castillo, A. E. |
| Guadalajara | 24.98 | 634.6 | 29.99 | 761.8 | 51.8 | 11.0 | 55 | SW | 0.9 | 0.4 | ..... | 0 | 8 | ..... | SW | 0 | 0 | Cloudy | Prof. L. Perez. |
| Guanajuato | 23.63 | 600.4 | 29.82 | 757 5 | 63.5 | 17.5 | 68 | Calm | 0 | 0 | ..... | 0 | 5 | ..... | W | 0 | 0 | ½ cloudy | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 60.1 | 15.6 | 54 | N | 0.9 | 0.4 | ..... | 4cs | 0 | SW | ..... | 0 | 0 | Clear | Prof. M. Leal. |
| Mexico | 23.05 | 585.4 | 29.55 | 750.7 | 55.4 | 13.0 | 63 | Calm | 0 | 0 | ..... | 10ck | 0 | S | ..... | 0 | 0 | Covered | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 54.0 | 12.2 | 45 | SW | 0.9 | 0.4 | ..... | 1c | 2s | SW | SW | 0 | 0 | Clear | M. V. de Leon, M. E. |
| Puebla | 23.30 | 591.7 | 29.96 | 761.0 | 55.8 | 13.2 | 73 | E | 4.5 | 2.0 | ..... | 5ck | 5n | WSW | ..... | 0 | 0 | Cloudy | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 29.71 | 754.7 | 29.72 | 755.0 | 72.5 | 22.5 | 91 | SW | 1.8 | 0.8 | ..... | 10ck | 0 | SW | ..... | 0 | 0 | Covered | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 29.76 | 755.9 | 29.79 | 756.6 | 75.2 | 24.0 | 83 | Calm | 0 | 0 | ..... | 4ck | 6s | ..... | ..... | 0 | 0 | Covered | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 57.2 | 14.0 | 54 | SW | 15.6 | 7.0 | ..... | 8 | 1 | ..... | ..... | 0 | 0 | Dark | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.28 | 591.4 | 30.06 | 763.6 | 55.4 | 13.0 | 29 | E | ..... | ..... | ..... | 1c | 4ck | S | W | 0 | 0 | ½ cloudy | P. Spina. [M. M. D. D. |
| Morelia | 24.01 | 609.5 | ..... | ..... | 59.0 | 15.0 | 80 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Slightly hazy | M. Tena, F. L. Param. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.11 | 739.3 | 29.11 | 739.3 | 39.6 | 4.2 | ..... | WNW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.177 | 4.5 | ..... | |
| Groningen | 28.98 | 736.2 | 29.04 | 737.6 | 34.7 | 1.5 | ..... | SW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.709 | 18.0 | ..... | |
| Helder | 29.04 | 737.6 | 29.04 | 737.6 | 38.5 | 3.6 | ..... | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.020 | 0.5 | ..... | |
| Hellevoetsluis | 29.06 | 738.2 | 29.06 | 738.2 | 39.6 | 4.2 | 83 | WNW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.00 | 736.6 | 29.05 | 737.8 | 37.2 | 2.9 | 76 | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.378 | 9.6 | Dull | H. v d Bruk. |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 28.76 | 730.4 | 28.81 | 731.8 | 35 6 | 2.0 | 64 | SSE | 14.8 | 6.6 | ..... | ..... | 6 | ..... | ..... | 0.134 | 3.4 | Snowing..... | |
| Bröno | 28.94 | 735.1 | 28.98 | 736.1 | 42.8 | 6.0 | 34 | SSW | 29 | 13 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 28.95 | 735.2 | 29.09 | 738.9 | 36.1 | 2.3 | 80 | SSE | 9 | 4 | ..... | ..... | 10 | ..... | ..... | 0.169 | 4.3 | Snowing..... | |
| Tromsö | 29.08 | 738.7 | 29.13 | 739.8 | 42.4 | 5.8 | 64 | Calm | 0 | 0 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.89 | 759.1 | 30.08 | 764.0 | 59.0 | 15.0 | 89 | ESE | 4.2 | 1.9 | ..... | ..... | 8 | ..... | ..... | 0.197 | 5.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.05 | 737.8 | 30.08 | 764.1 | 57.7 | 14.3 | 67 | W | 13.0 | 5.8 | ..... | ..... | 10 | W | ..... | ..... | ..... | Light rain.. | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.17 | 766.2 | 30.25 | 768.4 | 62.2 | 16.8 | 55 | ESE | 7.4 | 3.3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.78 | 756.4 | 30.14 | 765.6 | 57.7 | 14.3 | 78 | W | 16.1 | 7.2 | ..... | ..... | 10 | ..... | ..... | 0.012 | 0.3 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.08 | 764.0 | 30.15 | 765.8 | 62.6 | 17.0 | 78 | S | 12.5 | 5.6 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.71 | 754.5 | 29.71 | 754.7 | 78.8 | 26.0 | ..... | S | ..... | ..... | 5 | ..... | 8 | ..... | S | 1 | ..... | Raining..... | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Rio Douro, S. 25° 58′, E. 33° 37′ | ..... | ..... | 30.20 | 767.0 | 78.8 | 26.0 | ..... | SE | ..... | ..... | 2 | ..... | 4 | ..... | SE | 1 | ..... | D. clouds..... | J. T. d'Oliveria, Com'd't. |
| Sado, Porto Praya, Cape Verde Islands | 30.00* | 762.0* | 30.01* | 762.3* | 80.6 | 27.0 | ..... | NE | ..... | ..... | 3 | ..... | 3 | ..... | NE | 3 | NE | D. clouds. .. | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.76 | 755.9 | 29.76 | 756.0 | ..... | ..... | ..... | W | ..... | ..... | 1 | ..... | 1 | ..... | NW | 1 | ..... | Blue sky..... | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreina,dos Amas,Com' |

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.01 | 736.8 | 29.43 | 747.6 | 42.3 | 5.7 | 68 | NNW | 2 | 1 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 28.94 | 735.1 | 29.36 | 745.8 | 39.0 | 3.9 | 98 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Astronomical Obs. |
| Dorpat | 29.24 | 742.6 | 29.48 | 748.8 | 37.2 | 2.9 | 94 | E | 7 | 3 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Rain & fog.. | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.57 | 751.0 | 29.58 | 751.4 | 41.4 | 5.2 | 84 | E | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Light fog..... | Central Physical Obs. |
| Kuopio | 29.21 | 741.9 | 29.53 | 750.1 | 39.2 | 4.0 | 92 | S | 13 | 6 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Ch. Forsten. |
| Kieff | 28.72 | 729.6 | 29.34 | 745.1 | 61.5 | 16.4 | 57 | SSE | 16 | 7 | ..... | ..... | 7c;k;ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.48 | 748.8 | 29.55 | 750.6 | 63.3 | 17.4 | 40 | S | 22 | 10 | ..... | ..... | 4c | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.79 | 756.7 | 29.81 | 757.2 | 55.8 | 13.2 | 62 | Calm | 0 | 0 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Light clouds | Lagorio. |
| Moscow | 29.42 | 747.3 | 29.98 | 761.6 | 38.7 | 3.7 | 83 | S | 9 | 4 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.66 | 753.3 | 29.86 | 758.4 | 56.5 | 13.6 | 48 | ESE | 22 | 10 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.82 | 757.3 | 29.84 | 757.8 | 46.2 | 7.9 | 61 | SE | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.49 | 723 7 | 29.87 | 758.8 | 65.7 | 18.7 | 33 | SE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.15 | 765.9 | 30.07 | 763.8 | 46.0 | 7.8 | 73 | ESE | 2 | 1 | ..... | ..... | 2k | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Krotkowo* | 29.79 | 756.6 | 30.27 | 768.9 | 43.9 | 6.6 | 50 | E | 16 | 7 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 30.05 | 763.3 | 30.33 | 770.4 | 41.9 | 5.5 | 49 | SE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 29.45 | 748.0 | 30.41 | 772.5 | 47.3 | 8.5 | 24 | SE | 4 | 2 | ..... | ..... | 4c | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Nukuss | 29.68 | 753.8 | 29.91 | 759.8 | 51.6 | 10.9 | 87 | NNE | 13 | 6 | ..... | ..... | 7ks | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.26 | 717.7 | 29.95 | 760.7 | 57.2 | 14.0 | 75 | SW | 4 | 2 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 30.05 | 763.2 | 30.61 | 777.5 | 25.7 | — 3.5 | 56 | SW | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 30.15 | 765.9 | 30.51 | 774.9 | 11.1 | —11.6 | 70 | WNW | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 29.73 | 755.1 | 29.87 | 758.7 | 55.4 | 13.0 | 50 | Calm | 0 | 0 | ..... | ..... | 7n | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.33 | 694.2 | 29.45 | 748.1 | 22.8 | — 5.1 | 90 | N | 18 | 8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | Meteorological Obs. |
| Vladivostock | 30.05 | 763.2 | 30.15 | 765.7 | 36.3 | 2.4 | 94 | SE | 7 | 3 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 9.5 | —12.5 | 62 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols: they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.60 | 751.7 | 29.70 | 754.4 | 62.6 | 17 | 49 | SW | 8.6 | 3.83 | ..... | 3c | 2k | W | ..... | 0 | 0 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.74 | 755.3 | 29.84 | 757.8 | 52.5 | 11.4 | 96 | NW | 2.5 | 1.13 | ..... | ..... | 10 | ..... | ..... | 0.165 | 4.2 | Rain & hail. | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.84 | 681.6 | ..... | ..... | 51.4 | 10.8 | 82 | SW | 14.2 | 6.35 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Cloudy..... | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.68 | 703.0 | 29.92 | 760.0 | 51.8 | 11.0 | 68 | SW | 23.9 | 10.67 | ..... | 0 | 10 | ..... | ..... | 0 | 0 | Covered..... | The Staff. |
| Murcia, Met. Obs'y | 29.78 | 756.5 | 29.93 | 760.3 | 70.5 | 21.4 | 37 | SW | 4.7 | 2.08 | ..... | 3 | 4 | E | ..... | 0 | 0 | Cloudy..... | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.96 | 735.5 | 29.86 | 758.4 | 52.0 | 11.1 | 95 | WNW | 10.6 | 4.72 | ..... | ..... | 10 | ..... | ..... | 0.441 | 11.2 | Rainy..... | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.90 | 759.5 | 29.97 | 761.1 | 77.1 | 25.1 | 85 | ESE | 5.8 | 2.6 | ..... | 1c | 1k | SSE | W | 0 | 0 | Clear..... | Benito Vines, S. J. |
| San Fernando, Naval Obs'y | 30.11 | 764.7 | 30.21 | 767.3 | 59.0 | 15.0 | 61 | W | 15.7 | 7.0 | ..... | 0 | 6 | ..... | WNW | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W.I. | 29.93 | 760.2 | 30.02 | 762 5 | 76.3 | 24.6 | 84 | SE | ..... | ..... | ..... | 2s | 1k | SE | SE | 0 | 0 | Clear ..... | Leonardo de Tejeda, Chief of Engineers. |

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'r 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.41 | 747.1 | 29.45 | 748.1 | 36.7 | 2.6 | ..... | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.157 | 4.0 | ..... | |
| Umea | 29.33 | 745.0 | 29.38 | 746.3 | 34.9 | 1.6 | 96 | S | ..... | ..... | 7 | ..... | 1 | ..... | ..... | 0.532 | 13.5 | ..... | |
| Hernosand | 29.24 | 742.8 | 29.30 | 744.1 | 37.0 | 2.8 | 89 | SSW | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0.575 | 14.6 | ..... | |
| Stockholm | 29.17 | 740.9 | 29.35 | 745.4 | 39.7 | 4.3 | 66 | SSW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0.087 | 2.2 | ..... | |
| Wisby | 29.29 | 743.9 | 29.35 | 745.4 | 44.6 | 7.0 | 61 | SW | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0.051 | 1.3 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.26 | 743.2 | 29.34 | 745.1 | 39.7 | 4.3 | 63 | S | 17.4 | 7.8 | ..... | ..... | 8 | SSW | SSW | 0.001 | 0.03 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 27.98 | 710.8 | 29.46 | 748.3 | 37.4 | 3.0 | 85 | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.012 | 0.3 | Raining | The Observatory. |
| Zurich | 27.72 | 704.2 | 29.40 | 746.7 | 43.9 | 6.6 | 55 | W | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.591 | 15.0 | Covered | The Observatory. |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —13.4 mm.; Thermometer, —6.9 cent.; Relative Humidity, +27 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.61 | 752.0 | 71.1 | 21.7 | 30 | SE | 2 | 1.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanides. |
| Valona | ..... | ..... | 29.81 | 757.2 | 64.0 | 17.8 | ..... | SW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0.71 | 18. | Raining | A. Bertrand. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.80 | 756.9 | 29.91 | 759.8 | 69 4 | 20.8 | 75 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0.025 | 0.63 | Blue sky | Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.46 | 748.3 | 29.53 | 750.0 | 30.2 | — 1.0 | 96 | NE | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing | Hon. J. Ferguson. |
| Brockville, Ontario | 29.51 | 749 5 | 29.82 | 757.4 | 41 | 5.0 | ..... | NW | 1 | 0.4 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | W. R. Bigg. |
| *Chatham, N B | 29.51 | 749.5 | 29.58 | 751.3 | 30 | — 1.1 | 96 | N | 17 | 7.6 | ..... | ..... | 10n | ..... | N | 0.76 | 19.3 | Light snow | G. A. Blair. |
| Charlottetown, P. E. Island | 29.37 | 746.0 | 29.42 | 747.3 | 34 | 1.1 | 98 | NE | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.565 | 14.35 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.56 | 750.8 | 29.76 | 755.9 | 36.2 | 2.3 | 85 | E | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | James Smith, M. A. |
| Dalhousie, N. B | 29.66 | 753.4 | 29.70 | 754.4 | 30 | — 1.1 | 94 | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.2 | 5. | Snowing | H. A. Johnson. |
| Esquimault, B. C | 30.21 | 767.3 | 30.26 | 768.6 | 49.3 | 9.6 | 100 | N | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | W. H. Bevis. |
| *Father Point, Quebec | 29.77 | 756.1 | 29.79 | 756.7 | 29 | — 1.7 | 95 | NE | 38 | 17.0 | ..... | ..... | 10n | ..... | ..... | 0.60 | 15.2 | Light snow | J. McWilliams. |
| Fredericton, N. B | 29.52 | 749.8 | 29.59 | 751.6 | 32.3 | 0.2 | 75 | NW | 7 | 3.1 | ..... | ..... | 10n | ..... | ..... | 0.13 | 3.3 | Light snow | Prof. Harrison. |
| *Fort Garry Manitoba | 29.32 | 744.7 | 30.19 | 766.8 | 29 | — 1.7 | 94 | N | 2 | 0.9 | ..... | 5ck | 5n | NW | ..... | 0 | 0 | Hazy | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.82 | 732.0 | 29.95 | 760.7 | 35 | 1.7 | 100 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Grant. |
| *Halifax, N. S | 29.25 | 742.9 | 29.38 | 746.2 | 36 | 2.2 | 95 | N | 8 | 3.6 | ..... | ..... | 10n | ..... | N | 0.153 | 3.89 | Cloudy | F. Allison, M. A. |
| Hamilton, Ontario | 29.54 | 750.3 | 29.92 | 760.0 | 39.2 | 4.0 | 76 | NE | ..... | ..... | 1 | 0 | ..... | ..... | ..... | 0 | 0 | Clear | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.63 | 752.6 | 29.66 | 753.4 | 42 | 5.6 | 91 | E | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.12 | 3.0 | Overcast | E. Weedon. |
| *Kingston, Ontario | 29.50 | 749.3 | 29.84 | 757.9 | 37 | 2.8 | 81 | W | 3 | 1.3 | ..... | 5ck | 0 | Calm | ..... | 0 | 0 | Fair | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.46 | 748.3 | 29.50 | 749.3 | 33 | 0.6 | ..... | SE | 3 | 1.3 | ..... | ..... | 10n | ..... | ..... | 0.22 | 5.6 | Foggy | C. H. Rigby. |
| *Montreal, Quebec | 29.58 | 751.3 | 29.78 | 756.4 | 35 | 1.7 | 77 | NE | 6 | 2.7 | ..... | 5k | 2s | NE | ..... | Inap. | Inap. | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.19 | 741.4 | 29.91 | 759.7 | 31 | — 0.6 | 84 | N | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Rev. R. Mosley. |
| Peterboro, Ontario | 29.10 | 739.1 | 29.86 | 758.4 | 39 2 | 4.0 | 59 | W | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Bright | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.22 | 742.2 | 29.94 | 760.5 | 34 | 1.1 | 89 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.16 | 4.1 | Clear | H. Morgan. |
| Port Hastings, N. S | 29.38 | 746.2 | 29.44 | 747.8 | 33.6 | 0.9 | ..... | E | 2 | 0.9 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Foggy | Peter Grant. |
| Port Stanley, Ontario | 29.30 | 744.2 | 29.97 | 761.2 | 36 | 2.2 | 89 | W | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0.57 | 14.5 | Clear | M. Payne. |
| *Quebec, Quebec | 29.47 | 748.5 | 29.80 | 756.9 | 31 | — 0.6 | 100 | NE | ..... | ..... | 3 | ..... | 10n | ..... | NE | 0.02 | 0.5 | Light snow | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.41 | 747.0 | 29.88 | 758.9 | 31 | — 0.6 | 48 | NW | 5 | 2.2 | ..... | 2ck | 0 | NW | ..... | 0 | 0 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 29.46 | 748.3 | 29.51 | 749.5 | 31 | — 0.6 | 89 | NE | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | 0.45 | 11.4 | Light snow | Dr. Gove. |
| St. John, N. B | 29.34 | 745.2 | 29.51 | 749.5 | 29 | — 1.7 | 100 | NW | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | 0.115 | 2.92 | Light snow | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.20 | 741.7 | 29.94 | 760.5 | 38 | 3.3 | 83 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | K. Stewart. |
| Stayner, Ontario | 29.11 | 739.4 | 29.91 | 759.7 | 37 | 2.8 | 53 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | R. J. Cole. |
| Stratford, Ontario | 28.63 | 727.2 | 29.96 | 761.0 | 32.0 | 0.0 | 99 | NW | 10 | 4.5 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.46 | 748.3 | 29.49 | 749.0 | 35 | 1.7 | 96 | E | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0.73 | 18.5 | Cloudy | T. C. Hill. |
| *Toronto, Ontario | 29.49 | 749.0 | 29.88 | 758.9 | 42 | 5.6 | 55 | N | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Magnetic Observatory. |
| Windsor, N. S | 29.32 | 744.7 | 29.42 | 747.3 | 33.0 | 0.6 | 94 | NW | 12 | 5.4 | ..... | 10k | 0 | ..... | ..... | 0.26 | 6.6 | Fair | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 37.5 | 3.1 | 100 | SE | ..... | ..... | ..... | 5 | 5n | ..... | ..... | 0.60 | 15.2 | Foggy | John Delany. |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.48 | 748.8 | 29.70 | 754.4 | 39 | 3.9 | 64 | N | 12 | 5.4 | ..... | 0 | 8ks | ..... | NW | 0 | 0 | Fair | |
| Alpena, Michigan | 29.26 | 743.2 | 29.91 | 759.7 | 36 | 2.2 | 62 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Atlantic City, New Jersey | 29.74 | 755.4 | 29.76 | 755.9 | 43 | 6.1 | 91 | W | 13 | 5.8 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Augusta, Georgia | 29.78 | 756.4 | 29.96 | 761.0 | 59 | 15.0 | 43 | NE | 1 | 0.4 | ..... | 2cs | 8ks;s | NW | W;NE | 0 | 0 | Cloudy | |
| Baltimore, Maryland | 29.77 | 756.1 | 29.82 | 757.4 | 47 | 8.3 | 62 | NW | 14 | 6.3 | ..... | 2cs | 0 | NW | ..... | 0.01 | 0.3 | Clear. | |
| Barnegat, New Jersey | 29.70 | 754.4 | 29.72 | 754.9 | 45 | 7.2 | 76 | NW | 16 | 7.2 | ..... | ..... | 10s | ..... | N | 0.02 | 0.5 | Cloudy | |
| Bismarck, Dakota | 28.26 | 717.8 | 30.12 | 765.0 | 28 | — 2.2 | 88 | SE | 4 | 1.8 | ..... | 5cs | Sm'e | Calm | ..... | 0 | 0 | Fair | |
| Boise City, Idaho | 27.49 | 698.2 | 30.37 | 771.4 | 38 | 3.3 | 80 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boston, Massachusetts | 29.47 | 748.5 | 29.62 | 752.3 | 40.5 | 4.7 | 70 | NE | 4 | 1.8 | ..... | 5ck | 5s;sm' | NW | ..... | 0 | 0 | Cloudy | |
| Brackettville, Texas | 28.90 | 734.0 | 29.93 | 760.2 | 57 | 13.9 | 52 | W | 1 | 0.4 | ..... | 10k | 0 | W | ..... | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 29.09 | 738.9 | 30.13 | 765.3 | 31 | — 0.6 | 100 | N | 6 | 2.7 | ..... | 0 | 2ks | ..... | Calm | 0 | 0 | Fair | |
| Brownsville, Texas | 29.84 | 757.9 | 29.91 | 759.7 | 66 | 18.9 | 94 | N | 14 | 6.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Buffalo, New York | 29.17 | 740.9 | 29.89 | 759.2 | 35 | 1.7 | 100 | SW | 9 | 4.0 | ..... | ..... | Fog | ..... | SW | 0.24 | 6.1 | Foggy | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 55 | 12.8 | 56 | NW | ..... | ..... | 1 | 2ck | 2s | Calm | NW | 0 | 0 | Fair | |
| Burlington, Vermont | 29.49 | 749.0 | 29.76 | 755.9 | 35 | 1.7 | 70 | N | 10 | 4.5 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Cairo, Illinois | 29.72 | 754.9 | 30.12 | 765.0 | 48 | 8.9 | 70 | SW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Camp Grant, Arizona | 25.18 | 639.6 | 29.98 | 761.5 | 39 | 3.9 | 38 | NW | ..... | ..... | 1 | 10k | 0 | Calm | ..... | 0.07 | 1.8 | Cloudy | |
| Camp Verde, Arizona | 26.87 | 682.5 | 30.36 | 771.1 | 46 | 7.8 | 84 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0.15 | 3.8 | Clear | |
| Campo, California | 27.44 | 697.0 | 30.01 | 762.2 | 37 | 2.8 | 90 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 29.88 | 758.9 | 29.88 | 758.9 | 51 | 10.6 | 72 | N | 15 | 6.7 | ..... | 5k | 0 | NW | ..... | 0.91 | 23.1 | Fair | |
| Cape Henry, Virginia | 29.82 | 757.4 | 29.84 | 757.9 | 56 | 10.0 | 58 | NW | 21 | 9.4 | ..... | 0 | 0 | ..... | ..... | 0.06 | 1.5 | Clear. | |
| Cape Lookout, N. Carolina | 29.88 | 758.9 | 29.89 | 759.2 | 51 | 10.6 | 59 | NW | 25 | 11.2 | ..... | 2k | 0 | NW | ..... | 0.23 | 5.8 | Fair | |
| Cape May, New Jersey | 29.77 | 756.1 | 29.80 | 756.9 | 44 | 6.7 | 83 | W | 28 | 12.5 | ..... | 8k | 0 | W | ..... | 0.01 | 0.3 | Cloudy | |
| Charleston, South Carolina | 29.90 | 759.4 | 29.97 | 761.2 | 62 | 16.7 | 51 | NE | 12 | 5.4 | ..... | 10c;cs | 0 | W | ..... | 0 | 0 | Cloudy | |
| Cheyenne, Wyoming | 24.14 | 613.1 | 30.08 | 764.0 | 28 | — 2.2 | 77 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.28 | 743.7 | 29.99 | 761.7 | 40 | 4.4 | 65 | NW | 3 | 1.3 | ..... | 0 | Fog | ..... | ..... | 0 | 0 | Clear. | |
| Cincinnati, Ohio | 29.36 | 745.7 | 30.02 | 762.5 | 44 | 6.7 | 68 | NW | 5 | 2.2 | ..... | 10cs;k | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Cleveland, Ohio | 29.28 | 743.7 | 30.02 | 762.5 | 40 | 4.4 | 91 | W | 5 | 2.2 | ..... | ..... | 10s | ..... | W | 0.53 | 13.5 | Cloudy | |
| Concho, Texas | 28.07 | 713.0 | 29.80 | 756.9 | 42 | 5.6 | 91 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.74 | 18.8 | Clear | |
| Corsicana, Texas | 29.60 | 751.8 | 30.08 | 764.0 | 48 | 8.9 | 78 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Davenport, Iowa | 29.42 | 747.3 | 30.06 | 763.5 | 43 | 6.1 | 75 | W | 2 | 0.9 | ..... | 9ck | 0 | W | ..... | 0 | 0 | Cloudy | |
| Deadwood, Dakota | 25.48 | 647.2 | ..... | ..... | 39 | 3.9 | 64 | S | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Denison, Texas | 29.31 | 744.5 | 30.12 | 765.0 | 50 | 10.0 | 79 | NW | 4 | 1.8 | ..... | 0 | 8s | ..... | NW | 0 | 0 | Fair | |
| Denver, Colorado | 24.91 | 632.7 | 30.13 | 765.3 | 35 | 1.7 | 80 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.11 | 2.8 | Clear | |
| Detroit, Michigan | 29.28 | 743.7 | 29.96 | 761.0 | 41 | 5.0 | 82 | W | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0.07 | 1.8 | Cloudy | |
| Dodge City, Kansas | 27.56 | 700.0 | 29.90 | 759.4 | 44 | 6.7 | 84 | N | 8 | 3.6 | ..... | ..... | 8ks | ..... | NW | 0 | 0 | Cloudy | |
| Dubuque, Iowa | 29.31 | 744.5 | 30.03 | 762.7 | 38 | 3.3 | 63 | Calm | 6 | 0 | ..... | 8k | Fog | NW | Calm | 0 | 0 | Cloudy | |
| Duluth, Minnesota | 29.29 | 744.0 | 29.98 | 761.5 | 42 | 5.6 | 58 | N | 20 | 8.9 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Eagle Pass, Texas | 29.29 | 744.0 | 30.03 | 762.7 | 56 | 13.3 | 63 | NE | 4 | 1.8 | ..... | 10k | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Eastport, Maine | 29.45 | 748.0 | 29.52 | 749.8 | 31 | — 0.6 | 100 | N | 14 | 6.3 | ..... | ..... | 10n | ..... | ..... | 0.30 | 7.6 | Light snow. | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 58 | 14.4 | 48 | NE | ..... | ..... | 1 | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Erie, Pennsylvania | 29.22 | 742.2 | 29.95 | 760.7 | 40 | 4.4 | 91 | W | 2 | 0.9 | ..... | ..... | 10s | ..... | SW | 0.78 | 19.8 | Cloudy | |
| Escanaba, Michigan | 29.30 | 744.2 | 29.97 | 761.2 | 37 | 2.8 | 62 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Florence, Arizona | 28.33 | 719.6 | 29.93 | 760.2 | 47 | 8.3 | 85 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Fort Bayard, New Mexico | 24.09 | 611.9 | 30.09 | 764.3 | 35 | 1.7 | 70 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | NW | 0.63 | 16.0 | Cloudy | |
| Fort Craig, New Mexico | 25.58 | 749.7 | ..... | ..... | 40 | 4.4 | 56 | NW | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0.13 | 3.3 | Cloudy | |
| Fort Davis, Texas | ..... | ..... | ..... | ..... | 53 | 11.7 | 53 | NE | 15 | 6.7 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Fort Gibson, Indian Ter | 29.56 | 750.8 | 30.11 | 764.8 | 49 | 9.4 | 64 | W | 3 | 1.3 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Fort Griffin, Texas | 28.85 | 732.8 | 30.15 | 765.8 | 45 | 7.2 | 76 | NW | 2 | 0.9 | ..... | 5k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Fort St. Michael, Alaska | 29.32 | 744.7 | 29.35 | 745.5 | 9 | —12.8 | 100 | NE | 11 | 4.9 | ..... | ..... | 10n | ..... | NE | 0.02 | 0.5 | Snowing | |
| Fort Sill, Indian Territory | 28.93 | 734.8 | 30.06 | 763.5 | 49 | 9.4 | 71 | N | 6 | 2.7 | ..... | 0 | 5s | ..... | W | 0 | 0 | Fair | |
| Galveston, Texas | 29.91 | 759.7 | 29.96 | 761.0 | 62 | 16.7 | 61 | NE | 10 | 4.5 | ..... | 8c;ck | 0 | W;NE | ..... | 0.05 | 1.3 | Cloudy | |
| Grand Haven, Michigan | 29.34 | 745.2 | 30.00 | 762.0 | 41 | 5.0 | 91 | W | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Indianapolis, Indiana | 29.23 | 742.4 | 30.03 | 762.7 | 40 | 4.4 | 82 | SW | 3 | 1.3 | ..... | 8cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Indianola, Texas | 29.95 | 760.7 | 29.97 | 761.2 | 62 | 16.7 | 77 | NE | 20 | 8.9 | ..... | 5c | 2s | W | Calm | 0 | 0 | Fair | |
| Jacksboro, Texas | 28.98 | 736.1 | 30.12 | 765.0 | 46 | 7.8 | 69 | NW | 4 | 1.8 | ..... | 0 | 1s | ..... | NW | Inap. | Inap. | Fair | |
| Jacksonville, Florida | 29.88 | 758.9 | 29.94 | 759.7 | 69 | 20.6 | 85 | W | 6 | 2.7 | ..... | ..... | 10n | ..... | W | 0.03 | 0.8 | Light rain | |
| Keokuk, Iowa | 29.41 | 747.0 | 30.04 | 763.0 | 46 | 7.8 | 69 | NW | 4 | 1.8 | ..... | 0 | 4s | ..... | Calm | 0 | 0 | Fair | |
| Key West, Florida | 29.92 | 760.0 | 29.95 | 760.7 | 78 | 25.6 | 86 | S | 5 | 2.2 | ..... | 2c | 1s;fg | ..... | Calm | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 29.86 | 758.4 | 29.88 | 758.9 | 48 | 8.9 | 70 | NW | 17 | 7.6 | ..... | 1cs | 0 | NW | ..... | 0.01 | 0.3 | Clear | |
| Knoxville, Tennessee | 29.05 | 737.9 | 30.08 | 764.0 | 41 | 5.0 | 65 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | W | 0 | 0 | Cloudy | |
| La Crosse, Wisconsin | 29.25 | 742.9 | 30.00 | 762.0 | 41 | 5.0 | 74 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| La Mesilla, New Mexico | 26.12 | 663.4 | 30.27 | 768.8 | 41 | 5.0 | 75 | Calm | 0 | 0 | ..... | 0 | 8s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Laredo, Texas | 29.55 | 750.6 | 29.89 | 759.2 | 60 | 15.6 | 71 | NE | 6 | 2.7 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 29.26 | 743.2 | 30.13 | 765.3 | 43 | 6.1 | 75 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.71 | 754.6 | 30.05 | 763.3 | 51 | 10.6 | 72 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.47 | 748.5 | 30.04 | 763.0 | 43 | 6.1 | 67 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Lynchburg, Virginia | 29.21 | 741.9 | 29.89 | 759.2 | 47 | 8.3 | 55 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Marquette, Michigan | 29.22 | 742.2 | 29.93 | 760.2 | 40 | 4.4 | 56 | W | 4 | 1.8 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Mason, Texas | 28.40 | 721.3 | 30.20 | 767.1 | 47 | 8.3 | 62 | N | 10 | 4.5 | ..... | 5cs | 0 | Calm | ..... | 0.02 | 0.5 | Clear | |
| Memphis, Tennessee | 29.78 | 756.4 | 30.10 | 764.5 | 48 | 8.9 | 71 | N | 8 | 3.6 | ..... | 0 | 5s | ..... | SW | 0 | 0 | Fair | |
| Milwaukee, Wisconsin | 29.24 | 742.7 | 29.97 | 761.2 | 42 | 5.6 | 74 | NW | 1 | 0.4 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear. | |
| Mobile, Alabama | 29.90 | 759.4 | 29.95 | 760.7 | 56 | 13.3 | 94 | N | 15 | 6.7 | ..... | ..... | 10s | ..... | NE | 0.17 | 4.3 | Cloudy | |
| Montgomery, Alabama | 29.72 | 754.9 | 29.96 | 761.0 | 56.5 | 13.6 | 71 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | W | 0.06 | 1.5 | Threatening | |
| Morgantown, West Virginia | 28.91 | 734.3 | 29.98 | 761.5 | 40 | 4.4 | 82 | W | 6 | 2.7 | ..... | ..... | 10s | ..... | W | 0.02 | 0.5 | Light rain | |
| Mt. Washington, N. H. | 23.29 | 591.6 | 29.65 | 753.1 | 21 | — 6.1 | 100 | N | 27 | 12.1 | ..... | ..... | 10n | ..... | N | 0.14 | 3.6 | Light snow | |
| Nashville, Tennessee | 29.52 | 749.8 | 30.07 | 763.8 | 48 | 8.9 | 56 | W | 2 | 0.9 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| New Haven, Connecticut | 29.53 | 750.0 | 29.65 | 753.1 | 44 | 6.7 | 76 | NW | 10 | 4.5 | ..... | 2k | 0 | NW | ..... | 0.11 | 2.8 | Fair | |
| New London, Connecticut | 29.58 | 751.3 | 29.63 | 752.6 | 44 | 6.7 | 68 | N | 6 | 2.7 | ..... | 2ck | 5s | W | N | 0.06 | 1.5 | Clearing | |
| New Orleans, Louisiana | 29.86 | 758.4 | 29.92 | 760.0 | 61 | 16.1 | 77 | N | 16 | 7.2 | ..... | ..... | 10s | ..... | N | 0.85 | 21.6 | Cloudy | |
| Newport, Rhode Island | 29.57 | 751.1 | 29.62 | 752.3 | 41 | 5.0 | 91 | N | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0.09 | 2.3 | Light rain | |
| New York, New York | 29.54 | 750.3 | 29.72 | 754.9 | 43 | 6.1 | 75 | NW | 8 | 3.6 | ..... | ..... | 10s | fg | ..... | 0.05 | 1.3 | Cloudy | |
| Norfolk, Virginia | 29.82 | 757.4 | 29.88 | 758.9 | 47 | 8.3 | 62 | NW | 11 | 4.9 | ..... | 2cs | 0 | NW | ..... | 0.05 | 1.3 | Fair | |
| North Platte, Nebraska | 27.28 | 692.9 | 29.98 | 761.5 | 29 | — 1.7 | 89 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 30.24 | 768.1 | 30.28 | 769.1 | 47 | 8.3 | 93 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.04 | 1.0 | Cloudy | |
| Omaha, Nebraska | 29.03 | 737.3 | 30.14 | 765.5 | 39 | 3.9 | 73 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Oswego, New York | 29.51 | 749.5 | 29.84 | 757.9 | 40 | 4.4 | 82 | N | 5 | 2.2 | ..... | 10c | 0 | NE | ..... | 0 | 0 | Cloudy | |
| Pembina, Dakota | 29.28 | 743.7 | 30.16 | 766.1 | 26 | — 3.3 | 88 | NW | 3 | 1.3 | ..... | 5ck | 0 | NW | ..... | 0 | 0 | Fair | |
| Philadelphia, Pennsylvania | 29.72 | 754.9 | 29.77 | 756.1 | 45 | 7.2 | 68 | NW | 12 | 5.4 | ..... | ..... | 8s | ..... | NW | 0.05 | 1.3 | Cloudy | |
| Phœnix, Arizona | 28.84 | 732.5 | 30.62 | 777.7 | 49 | 9.4 | 85 | N | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | |
| Pike's Peak, Colorado | 17.69 | 449.3 | 29.90 | 759.4 | 4 | —15.6 | 74 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.40 | 10.2 | Clear | |
| Pioche, Nevada | 24.21 | 614.9 | 29.98 | 761.5 | 36 | 2.2 | 61 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.14 | 740.1 | 29.95 | 761.0 | 43 | 6.1 | 75 | NW | 7 | 3.1 | ..... | 5k | 0 | NW | ..... | 0.06 | 1.5 | Fair | |
| Port Huron, Michigan | 29.26 | 743.2 | 29.93 | 760.2 | 42 | 5.6 | 83 | W | 8 | 3.6 | ..... | 0 | 2ks | ..... | W | 0.34 | 8.6 | Clear | |
| Portland, Maine | 29.58 | 751.3 | 29.63 | 752.6 | 39 | 3.9 | 82 | N | 9 | 4.0 | ..... | ..... | 10n | ..... | Calm | 0.01 | 0.3 | Light snow | |
| Portland, Oregon | 30.25 | 768.3 | 30.36 | 771.1 | 47 | 8.3 | 85 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Prescott, Arizona | 24.81 | 630.2 | 30.17 | 766.3 | 36 | 2.2 | 80 | N | ..... | ..... | ..... | 2cs | Haze | Calm | Calm | 0 | 0 | Fair | |
| Punta Rassa, Florida | 29.93 | 760.2 | 29.95 | 760.7 | 77 | 25.0 | 86 | S | 16 | 7.2 | ..... | 0 | 5s | ..... | S | 0 | 0 | Fair | |

## UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Red Bluff, California | 29.84 | 757.9 | 30.20 | 767.1 | 52 | 11.1 | 60 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Rochester, New York | 29.19 | 741.4 | 29.81 | 757.2 | 40 | 4.4 | 82 | W | 11 | 4.9 | ..... | 1ck | Haze | Calm | Calm | 0 | 0 | Fair | |
| Roseburg, Oregon | 29.72 | 754.9 | 30.32 | 770.1 | 40.5 | 4.7 | 100 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sacramento, California | 30.10 | 764.5 | 30.19 | 766.8 | 50 | 10.0 | 86 | SE. | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.51 | 749.5 | 30.10 | 764.5 | 45 | 7.2 | 61 | NW | 7 | 3.1 | ..... | 2c | 2s | Calm | Calm | 0 | 0 | Fair | |
| St. Marks, Florida | 29.89 | 759.2 | 29.90 | 759.4 | 66 | 18.9 | 94 | N | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.29 | 7.4 | Light rain | |
| St. Paul, Minnesota | 29.16 | 740.7 | 30.01 | 762.2 | 35 | 1.7 | 80 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.84 | 656.3 | 30.17 | 766.3 | 40 | 4.4 | 56 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Antonio, Texas | 29.32 | 744.7 | 29.90 | 759.4 | 54 | 12.2 | 61 | NW | 6 | 2.7 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| San Diego, California | 29.90 | 761.7 | 30.07 | 763.8 | 52 | 11.1 | 86 | NE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandusky, Ohio | 29.32 | 744.7 | 30.00 | 762.0 | 44 | 6.7 | 84 | W | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.07 | 1.8 | Cloudy | |
| Sandy Hook, New Jersey | 29.69 | 754.1 | 29.71 | 754.6 | 44 | 6.7 | 84 | NW | 12 | 5.4 | ..... | ..... | 10ks | ..... | NW | 0.10 | 2.5 | Cloudy | |
| San Francisco, California | 29.13 | 765.3 | 30.20 | 767.1 | 53 | 11.7 | 86 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Santa Fé, New Mexico | 23.35 | 593.1 | 29.89 | 759.2 | 27 | — 2.8 | 64 | NE | 1 | 0.4 | ..... | 2cs | 0 | Calm | ..... | 0.14 | 3.6 | Fair | |
| Savannah, Georgia | 29.82 | 757.4 | 29.92 | 760.0 | 64 | 17.8 | 58 | N | 8 | 3.6 | ..... | ..... | 10ks | ..... | W | 0 | 0 | Cloudy | |
| Shreveport, Louisiana | 29.84 | 757.9 | 30.07 | 763.8 | 54 | 12.2 | 61 | NE | 4 | 1.8 | ..... | 6 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Smithville, North Carolina | 29.91 | 759.7 | 29.95 | 760.7 | 51 | 10.6 | 53 | N | 12 | 5.4 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair | |
| Springfield, Massachusetts | 29.46 | 748.3 | 29.58 | 751.3 | 44 | 6.7 | 60 | N | 8 | 3.6 | ..... | 10k | 0 | N | ..... | 0 | 0 | Cloudy | |
| Stockton, Texas | 27.08 | 687.8 | 30.08 | 764.0 | 41 | 5.0 | 48 | NE | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Thatcher's Island, Mass | 29.58 | 751.3 | 29.64 | 752.8 | 38 | 3.3 | 81 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Toledo, Ohio | 29.29 | 744.0 | 29.98 | 761.5 | 44 | 6.7 | 84 | W | 4 | 1.8 | ..... | ..... | 10s | ..... | W | Inap. | Inap. | Cloudy | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 44 | 6.7 | 67 | NW | ..... | ..... | 1 | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| Tybee Island, Georgia | 29.88 | 758.9 | 29.91 | 759.7 | 65 | 18.3 | 48 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Umatilla, Oregon | 30.01 | 762.2 | ..... | ..... | 42 | 5.6 | 91 | SE | 8 | 3.6 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Vicksburg, Mississippi | 29.76 | 755.9 | 30.02 | 762.5 | 53 | 11.7 | 80 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.14 | 3.6 | Clear | |
| Virginia City, Montana | 24.47 | 621.5 | 29.95 | 760.7 | 37 | 2.8 | 53 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Visalia, California | 29.86 | 758.4 | 30.24 | 768.1 | 46 | 7.8 | 92 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C. | 29.74 | 755.4 | 29.86 | 758.4 | 47 | 8.3 | 70 | NW | 21 | 9.4 | ..... | 2ck | 0 | NW | ..... | 0.02 | 0.5 | Fair | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 48 | 8.9 | 49 | E | ..... | ..... | 3 | 2k | 0 | Calm | ..... | 0.02 | 0.5 | Fair | |
| Wilmington, N. Carolina | 29.85 | 758.2 | 29.93 | 760.2 | 50 | 10.0 | 51 | N | 12 | 5.4 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Winnemucca, Nevada | 25.93 | 658.6 | 30.29 | 769.4 | 33 | 0.6 | 79 | E | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wood's Holl, Mass | 29.55 | 750.6 | 29.60 | 751.8 | 41 | 5.0 | 91 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.06 | 1.5 | Light rain | |
| Yankton, Dakota | 28.88 | 733.5 | 30.23 | 767.8 | 30 | — 1.1 | 83 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Yuma, Arizona | 29.82 | 757.4 | 29.98 | 761.5 | 61 | 16.1 | 45 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 30.15 | 765.8 | 30.21 | 767.3 | 16.5 | — 8.6 | 92 | W | 5 | 2.2 | ..... | 2c | 2s | NE | ..... | 0 | 0 | Cloudy | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 29.93 | 760.2 | 29.95 | 760.7 | 79 | 26.1 | 82 | SE | 3.6 | 1.6 | ..... | 8k | 0 | S | ..... | 0 | 0 | Fair | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.07 | 763.8 | 30.08 | 764.0 | 77 | 25.0 | 72 | Calm | 0 | 0 | ..... | 5c | 2s | SE | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.90 | 759.4 | 29.98 | 761.5 | 82 | 27.8 | ..... | E | 6 | 2.7 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | 30.00 | 762.0 | 30.01 | 762.2 | 80 | 26.7 | 87 | N | ..... | ..... | 2 | ..... | 8ks | ..... | ..... | 0.580 | 14.73 | Cloudy | C. J. Hering. |
| Batavia, Dutch Guiana, S. A. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.23 | 640.8 | ..... | ..... | 68.5 | 20.3 | 85 | Calm | ..... | ..... | 0 | ..... | 10s;n | ..... | ..... | 0.12 | 3.0 | ..... | Thomas Herran. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,067.3 ft., or 1,846.2 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude; Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer: As read off. Inches. | Barometer: As read off. Millimeters. | Barometer: Attached Thermometer. Fahrenheit. | Barometer: Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er —10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.15 | 765.8 | 53 | 11.7 | 50 | 10.0 | 86 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear ..... | |
| Navy Yard, Pensacola, Fla. | 30.02 | 762.5 | 64 | 17.8 | 64 | 17.8 | 89 | NW | 12 | 5.4 | ..... | ..... | 2 | ..... | N | 0.34 | 8.6 | ..... | ..... | Cloudy..... | |
| Navy Yard, Portsmouth, N.H | 29.73 | 755.1 | 75 | 23.9 | 38 | 3.3 | 81 | NE | 1 | 0.4 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Threatening | |
| Naval Hospital, Yokohama, Japan..... | 30.36* | 771.1* | 59.2 | 15.1 | 56.2 | 13.4 | 81 | SW | ..... | ..... | 4 | ..... | 9ks;n | ..... | SW | Slight | Slight | ..... | ..... | Showery..... | |
| Adams. Panama..... | 29.93 | 760.2 | 81 | 27.2 | 80 | 26.7 | 87 | NW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | Smooth | ..... | Misty..... | |
| Alliance, Messina, Sicily..... | 29.88‡ | 758.9‡ | ..... | ..... | 56 | 13.3 | 63 | NW | ..... | ..... | 2–5 | ..... | 8 | ..... | NW | ..... | ..... | ..... | ..... | Squally..... | |
| Ashuelot. Shanghai, China ..... | 30.02 | 762.5 | 62 | 16.7 | 59 | 15.0 | 94 | SSE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Canonicus, New Orleans, La..... | 29.89 | 759.2 | 46 | 7.8 | 59 | 15.0 | 88 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Colorado, New York, N. Y..... | 29.69‡ | 754.1‡ | ..... | ..... | 43 | 6.1 | 75 | NNW | 6 | 2.7 | ..... | ..... | 10 | ..... | NNW | 0.06 | 1.5 | ..... | ..... | Hazy..... | |
| Constellation, N. 39° 04′ W. 70° 48′..... | 29.72‡ | 754.9‡ | ..... | ..... | 45 | 7.2 | 92 | NW | ..... | ..... | 2 | ..... | 10 | ..... | NW | ..... | ..... | Smooth | NW | Drizzling..... | |
| Constitution, Falmouth, England..... | 29.34‡ | 745.2‡ | ..... | ..... | 48 | 8.9 | 70 | NW | ..... | ..... | 2 | ..... | 2 | ..... | NW | ..... | ..... | ..... | ..... | Clear ..... | |
| Despatch, Constantinople, Turkey. | 29.63‡ | 752.6‡ | ..... | ..... | 65 | 18.3 | 54 | S | ..... | ..... | 2 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Fair ..... | |
| Enterprise, N. 24° 20′, W. 83° 04′..... | 29.96‡ | 761.0‡ | ..... | ..... | 78 | 25.6 | 91 | SSE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | Smooth | ..... | Fair..... | |
| Franklin, Norfolk, Va..... | 29.96 | 761.0 | 67 | 19.4 | 48 | 8.9 | 56 | NW | 8.4 | 3.8 | ..... | ..... | 2 | ..... | NW | 1. | 25. | ..... | ..... | D. clouds..... | |
| Gettysburg Valetta, Malta..... | 29.88‡ | 758.9‡ | ..... | ..... | 62 | 16.7 | 88 | W | ..... | ..... | 4 | ..... | 5 | ..... | W | 0 | 0 | ..... | ..... | Fair ..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.08 | 764.0 | 73 | 22.8 | 72 | 22.2 | 85 | NE | ..... | ..... | 4 | ..... | 10 | ..... | NE | ..... | ..... | Ground | NW | Cloudy..... | |
| Hartford, Montevideo, Uraguay.... | 30.03 | 762.7 | 70 | 21.1 | 68 | 20.0 | 90 | ENE | 4 | 1.8 | ..... | ..... | 10 | ..... | ENE | ..... | ..... | Smooth | ..... | Drizzling..... | |
| Marion, Vourla Bay, Turkey..... | 29.69 | 754.1 | 68 | 20.0 | 67 | 19.4 | 60 | S | ..... | ..... | 5 | ..... | 5 | ..... | S | 0 | 0 | Smooth | ..... | Fair ..... | |
| Michigan, Erie, Pa..... | 29.51 | 749.5 | 55 | 12.8 | 43 | 6.1 | 75 | W | ..... | ..... | 2 | ..... | 10 | ..... | W | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monocacy. Shanghai, China..... | 29.79‡ | 756.7‡ | ..... | ..... | 59 | 15.0 | 65 | ESE | ..... | ..... | 1–2 | ..... | 8 | ..... | E | ..... | ..... | ..... | ..... | D. clouds..... | |
| New Hampshire, Port Royal, S. C..... | 30.10 | 764.5 | 67 | 19.4 | 64 | 17.8 | 48 | NNE | 14 | 6.3 | ..... | ..... | 10 | ..... | W | ..... | ..... | ..... | ..... | Cloudy..... | |
| Omaha. St. Thomas, W I..... | 30.00* | 762.0* | 82 | 27.8 | 82 | 27.8 | 71 | S* | 2 | 0.9 | ..... | ..... | 4 | ..... | S | 0 | 0 | Smooth | ..... | Bright..... | |
| Onward. Callao, Peru..... | 29.98† | 761.5† | ..... | ..... | 72 | 22.2 | 90 | SE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, Pensacola, Fla..... | 29.91‡ | 759.7‡ | ..... | ..... | 64 | 17.8 | 100 | NNE | ..... | ..... | 5 | ..... | 10 | ..... | NNE | ..... | ..... | ..... | ..... | Threatening | |
| Palos, Shanghai, China..... | 30.03* | 762.7* | 64 | 17.8 | 58 | 14.4 | 94 | SE | ..... | ..... | 1–2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Pensacola, Honolulu, H. I..... | 30.28 | 769.1 | 74 | 23.3 | 71 | 21.7 | 80 | NE | 2 | 0.9 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Plymouth. Norfolk, Va..... | 29.86‡ | 758.4‡ | ..... | ..... | 48 | 8.9 | 63 | NW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Powhatan, Norfolk, Va..... | 29.93‡ | 760.2‡ | ..... | ..... | 47 | 8.3 | 100 | NW | 7.2 | 3.2 | ..... | ..... | 2 | ..... | ..... | 0.05 | 1.3 | ..... | ..... | Clear.. ..... | |
| Ranger. Amoy, China..... | 30.13* | 765.3* | ..... | ..... | 65 | 18.3 | 89 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Smooth | ..... | Drizzling..... | |
| Rio Bravo, Brownsville, Texas..... | 29.85 | 758.2 | 68 | 20.0 | 67 | 19.4 | 95 | N | ..... | ..... | 4 | ..... | 10 | ..... | N | ..... | ..... | ..... | ..... | Cloudy..... | |
| Santee, Annapolis, Md..... | 29.90‡ | 759.4‡ | ..... | ..... | 48 | 8.9 | 63 | NW | ..... | ..... | 5 | ..... | 1 | ..... | SE | 0.01 | 0.3 | ..... | ..... | Clear ..... | |
| Saratoga, Washington, D. C..... | 29.83* | 757.7* | ..... | ..... | 50 | 10.0 | 86 | NW | ..... | ..... | 2 | ..... | 2 | ..... | Calm | Slight | Slight | ..... | ..... | Clear..... | |
| St. Louis, League Island, Pa ..... | 29.72 | 754.9 | 62 | 16.7 | 43 | 6.1 | ?? | NW | 12 | 5.4 | ..... | ..... | 8 | ..... | NW | 0.05 | 1.3 | ..... | ..... | Cloudy..... | |
| Supply, Havre, France..... | 29.34 | 745.2 | 42 | 5.6 | 43 | 6.1 | 61 | NNW | ..... | ..... | 3 | ..... | 5? | ..... | NNW | ..... | ..... | ..... | ..... | Clear?..... | |
| Swatara, Aspinwall..... | 30.00 | 762.0 | 84 | 28.9 | 83 | 28.3 | 79 | NNW | ..... | ..... | 2 | ..... | 2 | ..... | N&E | ..... | ..... | ..... | ..... | Fair ..... | |
| Tennessee, N. 7° 41′ E 73° 55′..... | 29.87* | 758.7* | 88 | 31.1 | 88 | 31.1 | 50 | WSW | 1 | 0.4 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Slight | SSW | Hazy..... | |
| Trenton, Piraeus, Greece..... | 29.65‡ | 753.1‡ | ..... | ..... | 67 | 19.4 | 66 | WNW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Hazy..... | |
| Tuscarora, Pichilinque Bay, Mexico. | 29.99 | 761.7 | 65 | 18.3 | 65 | 18.3 | 89 | N | ..... | ..... | 1 | ..... | 2 | ..... | Calm | ..... | ..... | Smooth | ..... | Clear..... | |
| Vandalia, N. 43° 08′, E. 9° 22′..... | 29.74‡ | 755.4‡ | ..... | ..... | 53 | 11.7 | 80 | WSW | ..... | ..... | 7 | ..... | 10 | ..... | E | ..... | ..... | Rough | WNW | Stormy..... | |
| Wabash, Boston, Mass..... | 29.61‡ | 752.1‡ | ..... | ..... | 46 | 7.8 | 84 | NNE | 1 | 0.4 | ..... | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Cloudy..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | TRUE COURSE TOWARD— | HOURLY RATE IN KNOTS. | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | SEA-SWELL. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | CHARACTER. | DIRECTION FROM— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ——— ———, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Panama, N. 43° 44′, W. 124° 50′ | | | 30.34* | 770.6* | | | | SE | | | 2 | | 2 | | SE | Mod'ate | WSW | Fine | Capt. Seabury. |
| S. S. City of Peking | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U S N |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, N. 30° 51′, E. 131° 54′ | | | | | 65 | 18.3 | | SE | | | 7 | | 10 | | SE | Mod'ate | ESE | Overcast | Capt. Maury. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. *Corrected for temperature and elevation; instrumental error not known.

## WHITE STAR LINE MARINE SERIES.

Furnished by the cooperation of Ismay, Imrie & Co., Agents, Liverpool, and J. R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. W. H. Thompson |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, N. 40° 31′, W. 163° 51′ | | | 29.74* | 756.4* | | | | S | | | 8 | | Heavy | | SSW | Heavy | SSW | Drizzling | Capt. John Metcalf. |
| S. S. Gaelic, Hong-Kong, China | | | 30.08† | 764.0† | 73 | 22.8 | 81 | SW | | | 4 | | | | | | | Misty | Capt. W. H. Kidley |
| S. S. Oceanic, N. 36° 58′, W. 179° 54′ | | | 29.42 | 747.3 | 53 | 11.7 | ?? | SW | | | 4 | | 10 | | SW | High | NW; WSW | Raining | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg, N. 35° 20′, W. 41° 06′ | | | 29.83 | 757.7 | 70.5 | 21.4 | 73 | ENE | | | 4 | | c | | WNW | Smooth | WNW | Blue sky | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAME OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | Character | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois, N. 46° 53′, W. 39° 04′ | | | 29.96* | 761.0* | 60 | 15.6 | 82 | S | | | 3 | | 5 | | NE | Mod'ate | S | D. clouds | Captain Shackelford. |
| S. S. Indiana, Liverpool | | | 29.19* | 741.4* | 51 | 10.6 | 93 | NW | | | 7 | | 6 | | NW | | | Cloudy | Captain Sargent. |
| S. S. Ohio. Philadelphia, Pa | | | 29.80 | 756.9 | 47 | 8.3 | 92 | NNW | | | 2 | | 8 | | NNW | | | Clear? | Captain Morrison. |
| S. S. Pennsylvania | | | | | | | | | | | | | | | | | | | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Corrected for temperature and elevation, instrumental error not known.

## RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland, N. 49° 42′, W. 8° 12′ | | | 29.49* | 749.0* | | | | W | 25 | 11.2 | | | 10 | | WNW | Heavy | W | Squally | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

*Aneroid; regulated to standard at Antwerp.

## ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| S. S. Scandinavian, N. 52° 38′, W. 23° 40′ | | | 29.90 | 759.4 | 42 | 5.6 | | NW | | | 7 | | 8 | | NW | Short high | NW | Snowing | Capt. W. Richardson. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

## MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller Crisfield, Md. | | | 29.75 | 755.6 | 49 | 9.4 | 64 | NW | 19 | 8.5 | | | 0 | | | | | Clear | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 30.11 | 764.8 | 10 | —12.2 | 90 | W | 10 7 | 4.8 | | | 10s | | E | | | Cloudy | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg'd.) Chief Signal Officer, U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 2, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.12 | 765.0 | 61.9 | 16.6 | 77 | NE | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Dr. Ollive. |
| Nemours | ..... | ..... | 30.11 | 764.7 | 68.9 | 20.5 | 62 | NW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair. | Michel. |
| Algiers | ..... | ..... | 30.02 | 762.5 | 66.2 | 19.0 | 63 | W | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Towiliere. |
| La Calle | ..... | ..... | 30.03 | 762.8 | 61.2 | 16.2 | 77 | NW | ..... | ..... | 7 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Boulangeot. |
| Tunis | ..... | ..... | 30.00 | 762.0 | 66.4 | 19.1 | 49 | W | ..... | ..... | 6 | ..... | 9 | ..... | ..... | 0 | 0 | Covered | Jacques. |
| Sfax | ..... | ..... | 30.10 | 764.5 | 66.2 | 19.0 | ..... | SSE | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Gan. |
| Saida | ..... | ..... | 30.11 | 764.8 | 60.8 | 16.0 | ..... | W | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Herbin. |
| Tebessa | ..... | ..... | 30.00 | 762.0 | ..... | ..... | ..... | W | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Watrin. |
| Geriville | ..... | ..... | 29.98 | 761.5 | 60.4 | 15.8 | 83 | W | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Lemaillet. |
| Laghouat | ..... | ..... | 30.20 | 767.0 | 64.4 | 18.0 | 28 | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Bertrand. |
| Biskra | ..... | ..... | 30.15 | 765.7 | 74.5 | 23.6 | 58 | N | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the Amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet: Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,390? m.; or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 28.90 | 734.0 | 29.46 | 748.2 | 39.9 | 4.4 | 87 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.130 | 3.3 | Raining | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 28.74 | 730.0 | 29.50 | 749.4 | 48.9 | 9.4 | 56 | NE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0.091 | 2.3 | ..... | Dr. Wierzbiski. |
| Eperies | 28.62 | 727.0 | 29.50 | 749.2 | 48.2 | 9.0 | 73 | S | ..... | ..... | 1 | ..... | 10k;u | ..... | S | 0.006 | 0.15 | ..... | Julius Mikolik. |
| Gratz | 28.26 | 717.9 | 29.53 | 750.1 | 41.4 | 5.2 | 85 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.15 | 715.0 | 29.55 | 750.6 | 53.6 | 12.0 | 36 | NNW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.18 | 715.7 | 29.53 | 750.0 | 42.4 | 5.8 | 52 | W | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0.039 | 1.0 | ..... | Prof. C. Wagner |
| Lemberg | 28.45 | 722.7 | 29.43 | 747.4 | 51.8 | 11.0 | 52 | S | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Dr. T. Stanecki. |
| Pola | 29.34 | 745.1 | 29.84 | 758.0 | 49.3 | 9.6 | 84 | WNW | ..... | ..... | 3 | ..... | 10ks | ..... | ..... | 0.795 | 20.2 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.12 | 739.6 | 29.58 | 751.3 | 51.4 | 10.8 | 57 | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.20 | 741.7 | 29.48 | 748.8 | 51.4 | 10.8 | 72 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.329 | 8.35 | ..... | Karl Stancel. |
| Trieste | 29.38 | 746.2 | 29.48 | 748.8 | 49.6 | 9.8 | 80 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.520 | 13 2 | Raining | P. Busin. |
| Vienna | 28 82 | 731.9 | 29.53 | 750.1 | 44.6 | 7.0 | 67 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0.087 | 2.2 | ..... | I. R. Central Met.Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 27.95 | 710.0 | 29.47 | 748.6 | 40.3 | 4.6 | 65 | WSW | ..... | ..... | 6 | ..... | 9 | ..... | ..... | 0.126 | 3.2 | ..... | Prof. M. Passau. |
| Brussels | 29.15 | 740.4 | 29.35 | 745.5 | 46.6 | 8.1 | 59 | SW | ..... | ..... | 6 | ..... | 5 | ..... | WSW | 0 | 0 | ..... | Royal Observatory. |
| Furnes | 29.33 | 744.9 | 29.35 | 745.5 | 48.4 | 9.1 | 59 | SW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | M. E. de Cae. |
| Maeseyck | 29.27 | 743.4 | 29.39 | 746.6 | 47.5 | 8.6 | 65 | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.169 | 4.3 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

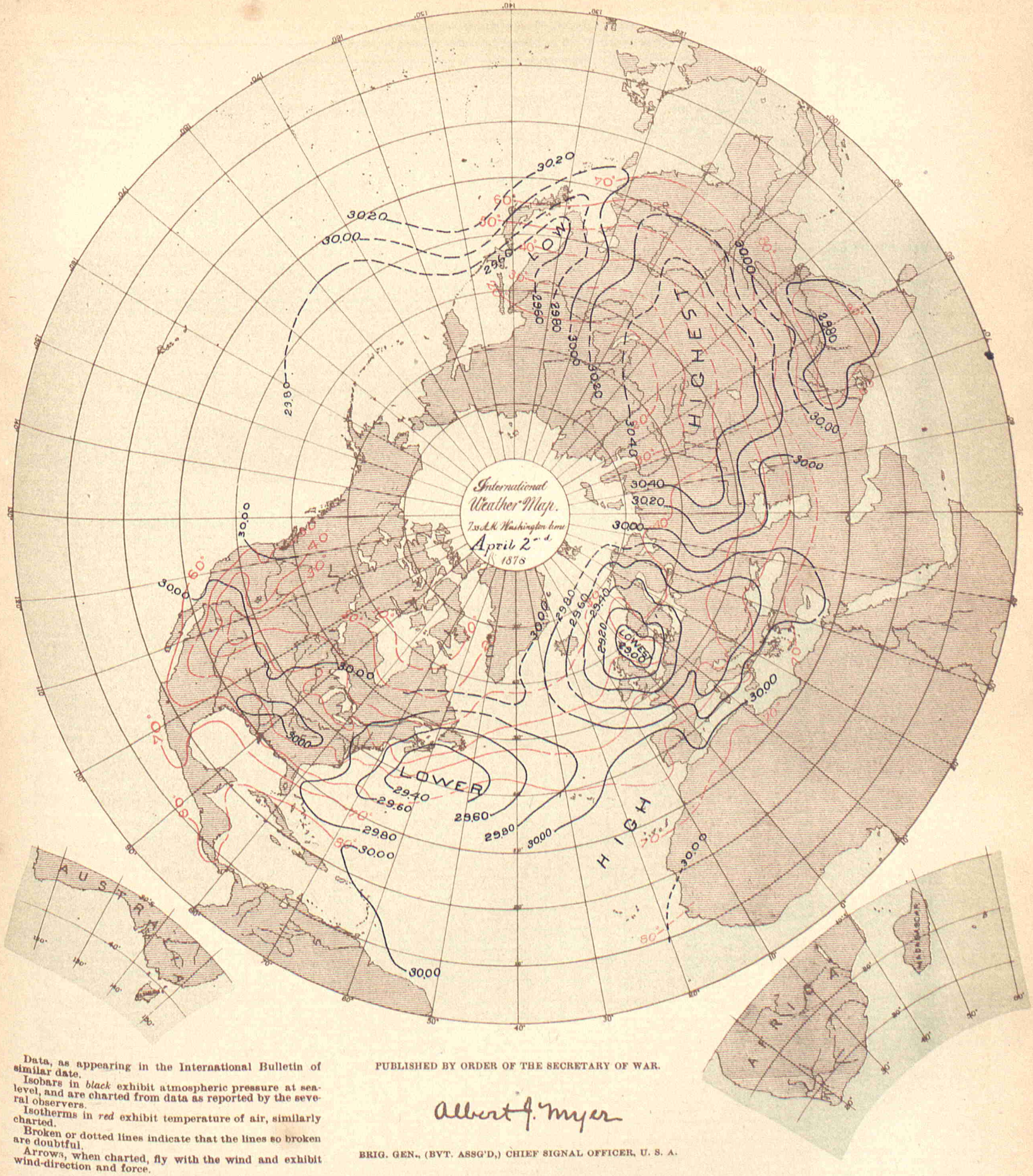
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E. Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity, Miles per hour. | Wind. Velocity, Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 28.92 | 734.6 | 29.02 | 737.1 | 40.0 | 4.4 | ..... | WNW | 29 | 13.0 | ..... | ..... | 4 | ..... | ..... | 0.12( | 3.05 | Blue sky..... | W. B swell. |
| Ardrossan | 29.08 | 738.6 | 29.10 | 739.1 | 47 | 8.3 | ..... | NW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.29 | 744.0 | 45.0 | 7.2 | ..... | WNW | 14 | 6.3 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.20 | 741.7 | 45.0 | 7.2 | ..... | W | 36 | 16.1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 29.42 | 747.3 | 47.3 | 8.5 | ..... | WNW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | J. L. E. Dreyer. |
| Bradford, Yorkshire | 28.73 | 729.7 | 29.12 | 739.6 | 45.1 | 7.3 | ..... | W | ..... | ..... | 5 | ..... | 7 | ..... | ..... | 0.22 | 5.6 | D. clouds.... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.92 | 760.0 | 29.95 | 760.7 | 82.5 | 28.1 | ..... | NE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.24 | 742.7 | 47.0 | 8.3 | ..... | SW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | H. Todd. [H. C. |
| Cardington | ..... | ..... | 29.37 | 746.0 | 48.0 | 8.5 | ..... | W | ..... | ..... | 5 | ..... | 7 | ..... | ..... | ..... | ..... | Overcast..... | John McLaren. |
| Chatham, School M. E. | 29.18 | 741.2 | 29.31 | 744.5 | 49.2 | 9.6 | ..... | W | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.02 | 711.7 | 29.50 | 749.3 | 40.0 | 4.4 | ..... | NW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | Snowing..... | Alexander Watt. |
| Donaghadee | 29.18 | 741.2 | 29.21 | 741.9 | 46 | 7.8 | ..... | W | ..... | ..... | 5 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | J. Mac Gowan. |
| Dover | 29.29 | 744.0 | 29.32 | 744.7 | 47 | 8.3 | ..... | W | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | ¾ clouded... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.19 | 741.4 | 43.0 | 6.1 | ..... | NW | 7.4 | 3.3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Thomas Mackereth. |
| Falmouth, Observatory | 29.28 | 743.7 | 29.52 | 749.8 | 48.0 | 8.9 | ..... | WNW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff. |
| Fort Napier, (Natal) | 27.90 | 708.6 | 30.10 | 764.5 | 79.0 | 26.1 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.68 | 753.9 | 29.91 | 759.7 | 88 | 31.1 | ..... | NW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | |
| Galway, Queen's College | ..... | ..... | 29.37 | 746.0 | 51 | 10.6 | ..... | W | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | |
| Gibraltar, (Mediterranean) | 30.05 | 763.5 | 30.12 | 765.0 | 66.0 | 18.9 | ..... | W | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | Corpl. Wm. Allen, A. H. C. |
| Glasgow, Observatory | 28.88 | 733.5 | 29.08 | 738.6 | 48.7 | 9.3 | ..... | WNW | ..... | ..... | 5 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | D. G. Maclean. |
| Great Yarmouth | 29.18 | 741.2 | 29.18 | 741.2 | 46 | 7.8 | ..... | W | ..... | ..... | 5 | ..... | 6 | ..... | ..... | ..... | ..... | Squally..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.14 | 740.1 | 29.31 | 744.5 | 48.9 | 9.4 | ..... | W | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff, for G. B. Airy. |
| Guernsey | 29.24 | 742.7 | 29.46 | 748.3 | 48 | 8.9 | ..... | WSW | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | Dr. S. E. Hoskins, F. R. S. |
| Helston | ..... | ..... | 29.50 | 749.3 | 49 | 9.4 | ..... | NW | ..... | ..... | 2 | ..... | 2c | ..... | ..... | 0.12 | 3.0 | Fine..... | M. P. Moyle. |
| Holyhead | 29.24 | 742.7 | 29.30 | 744.2 | 46 | 7.8 | ..... | W | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | Blue sky..... | John Tilston. |
| Jersey | 29.21 | 741.9 | 29.51 | 749.5 | 45.3 | 7.4 | ..... | W | ..... | ..... | 6 | ..... | 8 | ..... | ..... | Blank | Blank | Squally..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 29.32 | 744.7 | 48.1 | 8.9 | ..... | W | 28 | 12.5 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Threatening | The Staff. |
| Kingstown | 29.28 | 743.7 | 29.31 | 744.5 | 46 | 7.8 | ..... | WNW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | Blank | Blank | D. clouds.... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.24 | 742.7 | 48.0 | 8.9 | ..... | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Wm. J. Harrison, F. G. S. |
| Malta, (Mediterranean) | 29.91 | 759.7 | 29.99 | 761.7 | 64.0 | 17.8 | ..... | NW | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds.... | Sgt. Fred. Travis, A. H. |
| Nairn | 29.10 | 739.1 | 29.19 | 744.4 | 42 | 5.6 | ..... | NW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ¾ clouded... | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 29.93 | 760.2 | 81.5 | 27.5 | ..... | SW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | C. S. Duncombe. |
| Nottingham, Observatory | 29.04 | 737.6 | 29.23 | 742.4 | 48.5 | 9.2 | ..... | WNW | ..... | ..... | 4 | ..... | 7k,d | ..... | WNW | 0.01 | 0.28 | D. clouds.... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 28.73 | 729.7 | 29.25 | 742.9 | 45.0 | 7.2 | ..... | W | ..... | ..... | 6 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.27 | 743.4 | 47 | 8.3 | ..... | WSW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | Mr. Lucas. |
| Plymouth | 29.38 | 746.2 | 29.46 | 748.3 | 50.0 | 10.0 | ..... | WNW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | John Merrifield. |
| Roche's Point | 29.42 | 747.3 | 29.46 | 748.3 | 46 | 7.8 | ..... | NW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | Squally..... | W. Kennedy. |
| Sandwick Manse, (Orkneys | ..... | ..... | 29.09 | 738.9 | 40.9 | 4.9 | ..... | W | ..... | ..... | 6 | ..... | 3 | ..... | ..... | ..... | ..... | ..... | John C. Walker. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 29.74 | 755.4 | 60.8 | 16.0 | ..... | NE | 12 | 5.4 | ..... | ..... | 1 | ..... | ..... | Blank | Blank | Blue sky..... | Rev. C. Clouston, LL. D. |
| Sheffield | 28.92 | 734.6 | 29.20 | 741.7 | 44.1 | 6.7 | ..... | SW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. W. H. Lyne. |
| Silloth Rectory | 29.07 | 738.4 | 29.10 | 739.1 | 53.2 | 11.8 | 56 | SW | ..... | ..... | 6 | ..... | 9 | ..... | ..... | 0.04 | 1.0 | Overcast..... | W. F. Cooper. |
| Stonyhurst, Observatory | 28.78 | 731.0 | 29.19 | 741.4 | 42.2 | 5.7 | ..... | W | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0.340 | 8.4 | D. clouds.... | Rev. F. Redford, M. A. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 29.07 | 738.4 | 40 | 4.4 | ..... | W | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Squally..... | Rev. S. J. Perry. |
| Stratfield Turgiss | 29.10 | 739.1 | 29.32 | 744.7 | 47.8 | 8.8 | ..... | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | John Sutherland. |
| Thurso | ..... | ..... | 29.05 | 737.9 | 45 | 7.2 | ..... | W | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. C. H. Griffith, F. M. |
| Truro, Royal Institution | ..... | ..... | 29.51 | 749.5 | 52 | 11.1 | ..... | N | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy..... | John Trotter. |
| Valencia, Observatory | ..... | ..... | 29.52 | 749.8 | 47.2 | 8.4 | ..... | NW | ..... | ..... | 7 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | W. Newcombe. |
| Sub-Series. | | | | | | | | WNW | 15 | 6.7 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff. |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.14 | 765.5 | 64.0 | 17.8 | 82 | NW | ..... | ..... | 1 | ..... | 7k | ..... | ..... | 0.01 | 0.3 | Fine..... | Francis Abbott, F. R. A. S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.76 | 755.9 | 29.95 | 760.8 | 77.2 | 25.1 | 82 | ESE | 16.0 | 7.2 | ..... | 0 | 10 | ..... | ..... | 1.41 | 35.8 | Squally..... | C. Meldrum. |
| Melbourne, Observatory | 30.08 | 764.0 | 30.17 | 766.3 | 57.2 | 14.0 | 82 | W | 8 | 3.6 | ..... | ..... | 10 | ..... | ..... | 0.01 | 0.3 | Fine; dull... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m.

| Marine Series. Vessels. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather | Observer |
|---|---|---|---|---|
| S. S. Algeria, N. 50° 45′ W. 19° 40′ | 15* | NNW | Showery..... | Capt. W. Watson. |
| S. S. Batavia | | | | Capt. J. E. Mouland. |
| Ship Camperdown | | | | Capt. A. T. Miller. |
| Brig Catherine | | | | Capt. Adam Smith. |
| Barque Celeste | | | | Capt. D. F. McKechnie |
| S. S. Hibernia | | | | Capt. W. R. Cato |
| Barque Maroon | | | | Capt. A. T. Brown. |
| Ship Mikado | | | | Capt. C. C. Prehn. [R. |
| S. S. Peruvian | | | | Capt. W. H. Smith, R. N. |
| Royal Alice | | | | Capt. E. M. Hughes. |
| S. S. Seine | | | | Capt. H. Manning. |
| Barque Sorata | | | | Capt. Jas. J. Price. |
| Schooner Traveller | | | | Capt. Alex. Simpson. |
| S. S. Yorkshire, N. 45° 5′ W. 38° 0′ | 3 | ENE | Showery..... | Capt. H. Longley. |
| ..... | | | | |
| ..... | | | | |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.19 | 665.2 | ..... | ..... | 68.0 | 20.0 | 89 | NE | ..... | ..... | 1 | p | Haze | ..... | ..... | Inap. | Inap. | ..... | Federico Maison. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.17 | 741.0 | 29.22 | 742.2 | 40.6 | 4.8 | 78 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Fanöe | 29.01 | 736.9 | 29.03 | 737.4 | 38.1 | 3.4 | 93 | WSW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | |
| Godthaab, (Greenland) | 30.03 | 762.8 | 30.08 | 763.9 | 24.8 | — 4.0 | 80 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Stykkisholm, (Iceland) | 29.74 | 755.4 | 29.78 | 756.5 | 24.6 | — 4.1 | 96 | NE | ..... | ..... | 8 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | |
| Thorshavn, (Farõe) | 29.17 | 740.9 | 29.21 | 741.8 | 37.6 | 3.1 | 74 | N | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | Raining | |
| Vestervig | 28.82 | 732.0 | 28.99 | 736.3 | 38.1 | 3.4 | 97 | SSE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.01 | 737.7 | 29.60 | 751.7 | 44.6 | 7 | 80 | NW | ..... | ..... | 3 | ..... | 5 | ..... | NW | 0 | 0 | Cloudy | Collignon, Director. |
| Amiens, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bonvarne, Director. |
| Avignon, Normal School | 29.65 | 753.1 | 29.73 | 755.1 | 61.2 | 16.2 | 38 | NW | ..... | ..... | 3 | ..... | 2 | ..... | WNW | 0 | 0 | Partly cl'dy | Mr. Giraud, Director |
| Bar-sur-Seine | 28.97 | 735.8 | 29.52 | 749.9 | 45.5 | 7.5 | 74 | SW | ..... | ..... | 2 | ..... | Skn | ..... | SW | 0.299 | 7.6 | Very cloudy | C. Saillard. |
| Beaumette Obs'y (Angers) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Albert Cheux. |
| Beauvais | ..... | ..... | ..... | ..... | 50.5 | 10.3 | 50 | W | ..... | ..... | 3 | ..... | 8 | ..... | W | 0 | 0 | Very cloudy | Normal School. |
| Besançon | 28.70 | 729.0 | 29.61 | 752.0 | 41.7 | 5.4 | 90 | S | ..... | ..... | 3 | ..... | 10 | ..... | SW | 0.563 | 14.3 | Covered | Normal School. |
| Bourg-en-Bresse | 28.78 | 730.9 | 29.68 | 753.8 | 49.5 | 9.7 | 54 | W | ..... | ..... | 4 | ..... | 10n | ..... | W | 0.638 | 16.2 | Covered | Normal School. |
| Bourges, Normal School | 29.00 | 736.7 | 29.56 | 750.7 | 48.2 | 9 | 71 | SW | ..... | ..... | 4 | ..... | 8 | ..... | SW | 0.47 | 12. | Very cloudy | A. Wagner, Director. |
| Brest, Naval Observatory | 29.34 | 745.2 | 29.58 | 750.8 | 49.5 | 9.7 | 63 | WNW | ..... | ..... | 5 | ..... | 2n | ..... | WNW | 0.167 | 4.25 | ..... | The Staff. |
| Carcassonne, Normal School | 29.39 | 746.6 | 29.80 | 757 0 | 55.4 | 13 | 61 | W | ..... | ..... | 6 | ..... | 5 | ..... | NE | 0.110 | 2.8 | Cloudy | Vateau, Director. |
| Caen | 29.40 | 746.7 | 29.47 | 748.6 | 45.0 | 7.2 | 45 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.268 | 6.8 | Covered | Normal School. |
| Chartres, Normal School | 28.86 | 733.1 | 29.43 | 747.4 | 49.8 | 9.9 | 79 | NE | ..... | ..... | 4 | ..... | 9 | ..... | N | 0 | 0 | ..... | Lequin, Director. |
| Châlons-sur-Marne, N. Sch' | 29.16 | 740.7 | 29.48 | 748.8 | 46.0 | 7.8 | 72 | S | ..... | ..... | 3 | ..... | 10k | ..... | S | 0 | 0 | Covered | T. Leloup, Director. |
| Clermont-Fd., Puy de D.Obs | 28.28 | 718.3 | 29.63 | 752.7 | 48.6 | 9.2 | 63 | W | ..... | ..... | 4 | ..... | 8 | ..... | W | 0.630 | 16.0 | Very cloudy | Alluard, Director. |
| Commercy, Normal School | 28.65 | 727.8 | 29.54 | 750.4 | 43.9 | 6.6 | 77 | W | ..... | ..... | 2 | ..... | 5 | ..... | W | 0.126 | 3.2 | Cloudy | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.64 | 727.4 | 29.78 | 756.4 | 49.5 | 9.7 | 56 | SW | ..... | ..... | 4 | ..... | 10 | ..... | SE | 0.197 | 5.0 | Covered | M. Kina. |
| Grenoble | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| La Roche-sur-Yon, N. School | 29.44 | 747.8 | 29.65 | 753.2 | 51.8 | 11.0 | 69 | W | ..... | ..... | 6 | ..... | 8 | ..... | NW | 0.20 | 5. | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.24 | 742.6 | 29.54 | 750.4 | 47.1 | 8.4 | 78 | NW | ..... | ..... | 4 | ..... | 8 | ..... | NW | 0.16 | 4. | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 28.67 | 728.3 | 29.60 | 751.7 | 46.4 | 8 | 81 | S | ..... | ..... | 8 | ..... | 10 | ..... | ..... | 0.43 | 11. | Thunder-storm | Voudez, Director. |
| Lorient, Naval Observatory | 29.52 | 749.7 | 29.61 | 752.2 | 51.8 | 11.0 | 85 | WNW | ..... | ..... | 4 | ..... | 2 | ..... | W | 0.047 | 1.2 | ¼ covered | T. Carré, Director. |
| Mâcon, Normal School | 28.92 | 734.5 | 29.61 | 752.0 | 48.9 | 9.4 | 76 | W | ..... | ..... | 6 | ..... | 2 | ..... | E | 0.55 | 14. | Slightly cl'dy | M. Marchal, Director. |
| Metz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. A. Schuster, Dir. |
| Mirecourt | 28.49 | 723.7 | 29.55 | 750.5 | 43.0 | 6.1 | 75 | SW | ..... | ..... | 8 | ..... | 10 | ..... | NE | 0 | 0 | Covered | Normal School. |
| Nismes, Normal School | 29.52 | 749.9 | 29.72 | 755 0 | 60.1 | 15.6 | 71 | NW | ..... | ..... | 1 | ..... | 5 | ..... | NW | 0 | 0 | Fair | Boyer, Director. |
| Orleans, Normal School | 29.11 | 739.4 | 29.48 | 748 8 | 69.8 | 21 | 72 | W | ..... | ..... | 2 | ..... | 8 | ..... | W | 0.28 | 7. | Very cloudy | Bernard, Director. |
| Paris, Observatory | 29.24 | 742.6 | 29.48 | 748.7 | 46.9 | 8.3 | 94 | SW | ..... | ..... | 1 | ..... | 8 | ..... | W | Inap. | Inap. | Cloudy | National Observatory. |
| Privas | 28.65 | 727.8 | 29.72 | 755.0 | 48.2 | 9 | 40 | NW | ..... | ..... | 4 | ..... | 1 | ..... | N | 0 | 0 | Clear | Normal School |
| Puy de Dome (Summit) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.70 | 754.3 | 29.73 | 755.1 | 54.3 | 12.4 | 70 | WSW | ..... | ..... | 6 | ..... | 10 | ..... | WSW | 0.04 | 1. | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.36 | 745.8 | 29.45 | 748.0 | 53.2 | 11.8 | 40 | W | ..... | ..... | 3 | ..... | 8 | ..... | W | 0 | 0 | Very cloudy | F. Lucard, Director. |
| Saint Malo (Port) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. H. Hercouet. |
| Tarbes, Normal School | 28.80 | 731.6 | 29.88 | 759.0 | 53.6 | 12 | 54 | W | ..... | ..... | 8 | ..... | 5 | ..... | SW | 0 | 0 | Cloudy | T. Hugues, Director. |
| Villefranche | 28.94 | 735.1 | 29.65 | 753.2 | 50.2 | 10.1 | 92 | WSW | ..... | ..... | 2 | ..... | 10 | ..... | W | 0.20 | 5. | Covered | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.81 | 757.1 | 29.84 | 757.8 | 78.8 | 26 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchési. |
| Lyons | ..... | ..... | 29.76 | 755.9 | 47.3 | 8.5 | ..... | ..... | ..... | ..... | ..... | ..... | 9 | ..... | ..... | 0.24 | 6. | ..... | M. Jeys. |
| Marseilles, Observatory | ..... | ..... | 29.74 | 755.4 | 52.2 | 11.2 | 71 | WSW | ..... | ..... | 3–4 | ..... | 9 | ..... | ..... | 0 | 0 | Very cloudy | The Staff. |
| Mont-Louis | 24.64 | 625.9 | 29.96 | 760.9 | 45.9 | 7.7 | 30 | WSW | 11.2 | 5.00 | ..... | ..... | 1 | ..... | W | 0.012 | 0.3 | ..... | Mr. Falguère. |
| Nice | ..... | ..... | 29.59 | 751.6 | 60.4 | 15.8 | 35 | NW | ..... | ..... | 8 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.19 | 741.4 | 29.47 | 748.4 | 47.3 | 8.5 | 71 | W | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0.008 | 0.2 | ..... | Marié Davy, Director |
| Perpignan | ..... | ..... | 29.81 | 757.8 | 60 8 | 16.0 | 37 | NW | 22.4 | 10.00 | ..... | ..... | 1 | ..... | NW | 0.024 | 0.6 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.23 | 564.6 | ..... | ..... | 26 6 | — 3.0 | ..... | NW | ..... | ..... | 8-10 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.32 | 744.7 | 29.48 | 748.9 | 47.5 | 8.6 | 69 | W | ..... | ..... | 1 | ..... | 3 | ..... | WSW | 0 | 0 | Fair | E. Renou. |
| Toulouse, Observatory | 29.15 | 740.3 | 29.87 | 758.6 | 50.7 | 10.4 | 74 | WNW | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0.343 | 8.70 | Raining | The Staff. |
| Tours | 29.33 | 745.7 | 29.56 | 750.7 | 52.2 | 11.2 | 53 | W | ..... | ..... | 5 | ..... | 5 | ..... | W | 0.079 | 2.0 | ..... | C. Marquet. |
| Versailles, (near Paris) | ..... | ..... | 29.48 | 748.8 | 47 8 | 8.8 | 65 | W | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0.039 | 0.99 | Almost cov'd | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.00 | 761.9 | 30.02 | 762.5 | 59.2 | 15.1 | 94 | NE | 17.2 | 7.7 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Covered | Marc Dechevrens, S. J |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 1.35 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | |
| Berlin | 29.24 | 742.6 | 29.41 | 747.0 | 46.4 | 8.0 | 56 | SW | | | 2 | | 10 | | | | | | Prof. Dr. Hoh. |
| Breslau | 28.99 | 736.4 | 29.52 | 749.7 | 45.7 | 7.6 | 33 | W | | | 1 | | 2 | | | 0.098 | 2.5 | | Prof. Arndt. |
| Carlsruhe | 29.07 | 738.4 | 29.50 | 749.2 | 47.5 | 8.6 | 52 | SW | | | 4 | | 2 | | | Inap. | Inap. | | Royal University Obs'y |
| Cassel | 28.86 | 733.0 | 29.45 | 748.1 | 45.7 | 7.6 | 55 | WSW | | | 4 | | 8 | SW | | 0 | 0 | | Albert Senz. |
| Crefeld | 29.17 | 740.8 | 29.32 | 744.8 | 48.7 | 9.3 | 50 | SW | | | 6 | | 9к | | | 0.035 | 0.88 | | Dr. H. Möhl. |
| Emden | 29.26 | 743.1 | 29.29 | 744.0 | 38.7 | 3.7 | 96 | WSW | | | 5 | | 10 | | | 0.08 | 2. | | Director Lose. |
| Frankfort on the Main | 29.13 | 739.9 | 29.49 | 749.1 | 48.9 | 9.4 | 35 | SW | | | 2 | | 5 | | | 0.409 | 10.4 | | Prof. Prestel. |
| Friedrichshafen | 28.15 | 715.0 | 29.59 | 751.6 | 43.9 | 6.6 | 75 | SSW | | | 7 | | 8 | W | | 0.256 | 6.5 | Snowing | Physical Society. |
| Hamburg | 29.18 | 741.2 | 29.25 | 743.0 | 45.7 | 7.6 | 61 | SW | | | 6 | | 9km | | | 0.220 | 5.6 | Rain & snow | Prof. Prestel. |
| Kiel | 29.18 | 741.2 | 29.20 | 741.6 | 45.1 | 7.3 | 64 | SW | | | 6 | | 10 | | | 0.126 | 3.2 | Cloudy | M. Wilhelm. |
| Königsberg, (Prussia) | 29.38 | 746.3 | 29.47 | 748.4 | 47.3 | 8.5 | 57 | SW | | | 3 | | 4 | | | 0.159 | 4.06 | | Captain F. Hegemann. |
| Köslin | | | 29.34 | 745.1 | 42.1 | 5.6 | | SW | | | 5 | | 4 | | | 0 | 0 | | Prof. G. Karsten. |
| Leipsic, Observatory | 29.06 | 738.0 | 29.48 | 748.8 | 42.4 | 5.8 | 61 | SW | | | 2 | | 9 | WSW | | 0.039 | 1.0 | Rain & Hail | Prof. E. Luther |
| Memel, Naval School | 29.38 | 746.2 | 29.43 | 747.4 | 47.8 | 8.8 | 63 | SSE | | | 3 | | 10n | | | | | Graupelnd. | H. Müller. |
| Neufahrwasser | 29.40 | 746.8 | 29.42 | 747.2 | 43.7 | 6.5 | 61 | WSW | | | 4 | | 10 | | | 0.004 | 0.1 | | Prof. Bruhns. |
| Posen | 29.21 | 741.9 | 29.50 | 749.2 | 48.0 | 8.9 | 41 | SW | | | 8 | | 3 | | | 0.024 | 0.6 | | Reinbrecht von Skalweit. |
| Strassburg Obs., (in Alsace | 28.97 | 735.9 | 29.52 | 749.8 | 48.6 | 9.2 | 44 | WSW | | | 3 | | 9 | W | | 0.093 | 2.36 | | A. Lothes. |
| Stuttgart | 28.58 | 725.8 | 29.52 | 749.7 | 47.3 | 8.5 | 35 | NW | | | 2 | | 4 | W | | 0.051 | 1.3 | | Dr. Magener. |
| Treves, (Trier) | 28.87 | 733.2 | 29.38 | 746.2 | 46.4 | 8.0 | 46 | W | | | 7 | | 9 | | | 0.108 | 2.75 | Graupelnd. | Dr. Schur. |
| Weissenburg, (Bavaria) | 28.03 | 711.9 | 29.53 | 750.0 | 43.5 | 6.4 | 38 | W | 7 | 3 | | | 7ck | | W | 0.087 | 2.2 | | Prof. Schoder. |
| Wustrow, Naval School | 29.30 | 744.1 | 29.34 | 745.1 | 43.0 | 6.1 | 74 | SW | | | 3 | | 3 | | | 0.083 | 2.1 | | Prof. Flesch. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | Dr. Von Bebber. |
| | | | | | | | | | | | | | | | | | | | E. F. Schütz. |
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NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.50 | 749.3 | 29.89 | 759.2 | 63.1 | 17.3 | | W | | | 3.5 | | | | | | | Clear. | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.83 | 757.7 | 29.88 | 759.0 | 77.8 | 25.4 | 72 | WSW | 28? | 12.5? | | | 3 | | | 0 | 0 | D. clouds | |
| Deesa | 29.41 | 747.0 | 29.88 | 758.9 | 91.0 | 32.8 | 39 | SW | | | | | 2 | SSE | | 0 | 0 | D. clouds | |
| Bombay | 29.78 | 756.5 | 29.82 | 757.5 | 82.9 | 28.3 | 76 | NW | 25 | 11.2 | | | 3 | WNW | | 0 | 0 | D. clouds | |
| Poona | 27.78 | 705.7 | 29.72 | 755.0 | 93.7 | 34.3 | 38 | NW | | | | | 4 | | W | 0 | 0 | Dust-whirl | |
| Lahore | 29.05 | 737.9 | 29.78 | 756.4 | 88.6 | 31.4 | 34 | W | 4.2 | 1.9 | | | 3 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.33 | 694.2 | 29.85 | 758.1 | 81.0 | 27.2 | 83 | W | 9 | 4.0 | | | 9 | | | 0.37 | 9.4 | D. clouds | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.94 | 735.1 | 29.85 | 758.2 | 75.8 | 24.3 | 60 | N | 1.7 | 0.8 | | | 10 | | | 0.14 | 3.6 | Thunder-storm | |
| Agra | 29.29 | 743.8 | 29.83 | 757.8 | 96.6 | 35.9 | 26 | E | | | | | 10 | E | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.75 | 730.4 | 29.76 | 755.9 | 98.5 | 36.9 | 20 | Calm | 6.8 | 3.0 | | | 8 | NE | | 0 | 0 | D. clouds | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.47 | 748.5 | 29.83 | 757.8 | 91.7 | 33.2 | 54 | NNW | 2 | 0.9 | | | 10 | | | 0 | 0 | Overcast | |
| Allahabad | 29.50 | 749.4 | 29.81 | 757.1 | 93.7 | 34.3 | 36 | WNW | 2.7 | 1.2 | | | 5 | W | | 0 | 0 | D. clouds | |
| Patna | 29.56 | 750.8 | 29.73 | 755.2 | 97.4 | 36.3 | 30 | E | 1.0 | 0.4 | | | 8 | E | E | 0 | 0 | D. clouds | |
| Hazaribagh | 27.80 | 706.0 | 29.76 | 755.9 | 90.3 | 32.4 | 25 | NW | 6.1 | 2.7 | | | 10 | | | 0 | 0 | | |
| Cuttack | 29.71 | 754.6 | 29.79 | 756.7 | 87.1 | 30.6 | 64 | SW | 9.1 | 4.1 | | | 4 | | | 0 | 0 | D. clouds | |
| Calcutta (Alipore) | 29.78 | 756.3 | 29.80 | 756.9 | 84.7 | 29.3 | 77 | S | 10 | 4.5 | | | 9 | | SW;SE | 0 | 0 | Overcast | |
| Goalpara | 29.43 | 747.5 | 29.82 | 757.5 | 72.8 | 22.7 | 90 | SE | 5.9 | 2.6 | | | 2 | | W | 0.69 | 17.5 | Thunder | |
| Chittagong | 29.79 | 756.6 | 29.88 | 758.9 | 83.1 | 28.4 | 78 | W | 10.1 | 4.5 | | | 2 | | | 0 | 0 | D. clouds | |
| Sibsagar | 29.51 | 749.5 | 29.84 | 758.0 | 77.6 | 25.3 | 84 | ESE | 1.3 | 0.6 | | | 10 | W | W | 0 | 0 | D. clouds | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.36 | 720.3 | 29.68 | 753.8 | 95.5 | 35.3 | 25 | NE | 2.4 | 1.1 | | | 2 | W | | 0 | 0 | D. clouds | |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.04 | 737.5 | 29.45 | 748.0 | 52.7 | 11.5 | 56 | Calm | 0 | 0 | ..... | ..... | 9 | ..... | ..... | 0.122 | 3.1 | ..... | Prof. Giovanni Codig. |
| Padua | 29.34 | 745.2 | 29.45 | 748.0 | 51.4 | 10.8 | 67 | WSW | 14.3 | 6.4 | ..... | ..... | 9 | NW | ..... | 0.098 | 2.5 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.25 | 743.0 | 29.45 | 747.9 | 52.5 | 11.4 | 68 | SW | 8.7 | 3.9 | ..... | ..... | 3 | W | ..... | 0.181 | 4.6 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.17 | 715.4 | 29.49 | 749.0 | 52.2 | 11.2 | 29 | SW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | 28.99 | 736.3 | 29.51 | 749.5 | 55.0 | 12.8 | ..... | WNW | ..... | ..... | 1 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 28.61 | 726.6 | 29.52 | 749.8 | 54.5 | 12.5 | 44 | SSW | 3.8 | 1.7 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 27.63 | 701.8 | 29.56 | 750.7 | 49.3 | 9.6 | 21 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.30 | 744.3 | 29.53 | 750.0 | 57.2 | 14.0 | 45 | W | ..... | ..... | 8 | ..... | 1 | W | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.37 | 746.1 | 29.54 | 750.4 | 56.8 | 13.8 | 40 | SW | 8.1 | 3.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.24 | 742.7 | 29.56 | 750.7 | 56.7 | 13.7 | 47 | NW | ..... | ..... | 6 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.27 | 743.4 | 29.52 | 749.9 | 57.2 | 14.0 | 60 | W | ..... | ..... | 6 | ..... | 2 | W | ..... | 0.374 | 9.5 | ..... | Cav. F. Meucci. |
| Leghorn | 29.50 | 749.4 | 29.59 | 751.6 | 55.9 | 13.3 | 61 | W | 23.7 | 10.6 | ..... | ..... | 4 | W | ..... | 0.016 | 0.4 | ..... | Prof. P. Monte. |
| Pesaro | 29.47 | 748.5 | 29.52 | 749.8 | 51.1 | 10.6 | ..... | NW | 19.2 | 8.6 | ..... | ..... | 5 | SW | ..... | 0.059 | 1.5 | ..... | Prof. Luigi Guidi. |
| Urbino | 27.98 | 710.8 | 29.55 | 750.5 | 49.1 | 9.5 | 43 | WSW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.350 | 8.9 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.49 | 749.0 | 29.60 | 751.8 | 57.6 | 14.2 | 58 | NNW | ..... | ..... | 8 | ..... | 4 | NW | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.47 | 748.6 | 29.65 | 753.1 | 58.8 | 14.9 | 58 | SW | 20.6 | 9.2 | ..... | ..... | 3 | ..... | ..... | 0.087 | 2.2 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U | 29.53 | 750.1 | 29.73 | 755.1 | 62.6 | 17.0 | 53 | WSW | ..... | ..... | 6 | ..... | 4 | NW | ..... | 0.236 | 6.0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 60.3 | 15.7 | 57 | SSE | 21.7 | 9.7 | ..... | ..... | 8 | SW | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.66 | 753.3 | 29.85 | 758.1 | 63.1 | 17.3 | 44 | NW | ..... | ..... | 4 | ..... | 3 | NW | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.01 | 736.8 | 29.89 | 759.3 | 53.8 | 12.1 | 73 | WSW | 8.1 | 3.6 | ..... | ..... | 10 | ..... | ..... | 0.776 | 19.7 | ..... | Prof. F. D. Conti. |
| Palermo | 29.57 | 751.1 | 29.82 | 757.5 | 64.4 | 18.0 | 46 | WSW | 18.6 | 8.3 | ..... | ..... | 4 | WSW | ..... | 0.051 | 1.3 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.79 | 756.7 | 29.87 | 758.6 | 66.2 | 19.0 | 54 | WNW | ..... | ..... | 6 | ..... | 8 | W | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.18 | 741.1 | 29.73 | 755.2 | 57.0 | 13.9 | 62 | WSW | 17.4 | 7.8 | ..... | ..... | 4 | SW | ..... | 0.193 | 4.9 | ..... | Prof. F. Brioschi |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.7 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 30.11 | 764.8 | 30.18 | 766.6 | 57.7 | 14.3 | 94 | S | 8.2 | 3.7 | ..... | ..... | 10n | ..... | ..... | 0.285 | 7.20 | Light rain... | The Observatory. |
| Tokei (Yeddo) University.. | 30.04 | 763.0 | 30.14 | 765.7 | 58.2 | 14.6 | 92 | SSW | 9 | 4.0 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Light rain.... | Prof. P. V. Veeder. |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 64.4 | 18.0 | 46 | N | 0.9 | 0.4 | ..... | 4c | 0 | N | ..... | 0 | 0 | ⅛ cloudy..... | L. Castillo, A. E. |
| Guadalajara | 24.94 | 633.5 | 29.92 | 760.1 | 55.4 | 13.0 | 65 | NE | 1.8 | 0.8 | ..... | 0 | 9 | ..... | NE | 0 | 0 | Cloudy ..... | Prof. L. Perez. |
| Guanajuato | 23.68 | 600.1 | 29.81 | 757.2 | 62.6 | 17.0 | 67 | Calm | 0 | 0 | ..... | 0 | 5 | ..... | W | 0.02 | 0.5 | ⅛ cloudy..... | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 63.5 | 17.5 | 52 | NW | 1.8 | 0.8 | ..... | 10c | 0 | SW | ..... | 0 | 0 | Covered ..... | Prof. M. Leal. |
| Mexico | 22.99 | 584.0 | 29.44 | 747.8 | 57.2 | 14.0 | 55 | Calm | 0 | 0 | ..... | 1c | 0 | SW | ..... | 0 | 0 | Clear..... | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 61.3 | 16.3 | 54 | SW | 0.9 | 0.4 | ..... | 1c | 8k | SW | SW | 0 | 0 | Very cloudy | M. V. de Leon, M. E. |
| Puebla | 23.28 | 591.4 | 29.98 | 761.5 | 50.5 | 10.3 | 76 | E | 6.0 | 2.7 | ..... | 0 | 3s | ..... | ..... | 0 | 0 | Clear. ..... | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 29.83 | 757.0 | 29.84 | 757.9 | 74.3 | 23.5 | 91 | NNE | 0.9 | 0.4 | ..... | 0 | 10k | ..... | N | 0 | 0 | Dark..... | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 29.84 | 757.9 | 29.87 | 758.6 | 76.1 | 24.5 | 83 | NNE | 8.0 | 3.6 | ..... | 0 | 10sk | ..... | ..... | 0 | 0 | Covered ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 53.6 | 12.0 | 43 | S | 11.2 | 5.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear... ..... | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.27 | 591.1 | 30.04 | 763.0 | 50.4 | 10.2 | 64 | E | 3.4 | 1.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | P. Spina. [M. M. D. D. |
| Morelia | 23.90 | 607.0 | ..... | ..... | 59.0 | 15.0 | 64 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | M. Tena, F. L. Param. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,493 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.31 | 744.5 | 29.31 | 744.5 | 45.0 | 7.2 | ..... | W | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0.264 | 6.7 | ..... | |
| Groningen | 29.13 | 739.8 | 29.18 | 741.2 | 39.2 | 4.0 | ..... | WSW | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0.295 | 7.5 | ..... | |
| Helder | 29.17 | 740.8 | 29.17 | 740.8 | 41.7 | 5.4 | ..... | SW | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0.098 | 2.5 | ..... | |
| Hellevoetsluis | 29.26 | 743.2 | 29.26 | 743.2 | 45.3 | 7.4 | 55 | SW | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.22 | 742.1 | 29.26 | 743.3 | 45.5 | 7.5 | 60 | SSW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | H. v d Brink. |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give th humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 28.95 | 735.2 | 29.00 | 736.6 | 46.0 | 7.8 | 46 | ESE | 7.8 | 3.5 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | ..... |
| Bröno | 29.28 | 743.6 | 29.32 | 744.6 | 42.8 | 6.0 | 39 | SSE | 18 | 8 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | ..... |
| Christiania | 29.06 | 738.2 | 29.21 | 741.9 | 39.6 | 4.2 | 76 | ENE | 9 | 4 | ..... | ..... | 10 | ..... | ..... | 0.016 | 0.4 | ..... | ..... |
| Tromsö | 29.41 | 747.1 | 29.46 | 748.2 | 38.1 | 3.4 | 60 | Calm | 0 | 0 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... |
| ... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.69 | 754.1 | 29.88 | 759.0 | 61.9 | 16.6 | 83 | WNW | 7.4 | 3.3 | ..... | ..... | 5 | ..... | ..... | 0.433 | 11.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.12 | 739.7 | 30.16 | 766.0 | 57.6 | 14.2 | 67 | SW | 7.4 | 3.3 | ..... | ..... | 9 | WNW | ..... | 0.106 | 2.7 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.04 | 762.9 | 30.12 | 765.1 | 64.2 | 17.9 | 47 | ESE | 4.2 | 1.9 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.82 | 757.3 | 30.18 | 766.5 | 57.6 | 13.9 | 74 | SW | 16.1 | 7.2 | ..... | ..... | 10 | ..... | ..... | 0.012 | 0.3 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 29.88 | 758.9 | 29.95 | 760.7 | 61.2 | 16.2 | 91 | SSW | 14.3 | 6.4 | ..... | ..... | 10 | ..... | ..... | 2.441 | 62.0 | Light rain... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.76 | 755.8 | 29.76 | 756.0 | 81.5 | 27.5 | ..... | S | ..... | ..... | 5 | ..... | 6 | ..... | S | 1 | ..... | Raining | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Rio Douro, S. 25° 58′, E. 32° 37′ | ..... | ..... | 30.20 | 767.0 | 80.6 | 27.0 | ..... | ESE | ..... | ..... | 3 | ..... | 2 | ..... | SE | 2 | ESE | D. clouds | J. T. d'Oliveria, Com'd't. |
| Sado, Porto Praya, Cape Verde Islands | 30.01* | 762.2* | 30.02* | 762.5* | 81.0 | 27.2 | ..... | NE | ..... | ..... | 3 | ..... | 4 | ..... | NE | 2 | NE | D. clouds. | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.69 | 754.6 | 29.69 | 754.2 | ..... | ..... | ..... | W | ..... | ..... | 1 | ..... | 3 | ..... | NW | 1 | ..... | Blue sky | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreina, dos Amas, Com' |

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.06 | 738.0 | 29.48 | 748.7 | 48.4 | 9.1 | 63 | W | 11 | 5 | ..... | ..... | 7k | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.13 | 740.0 | 29.56 | 750.7 | 44.1 | 6.7 | 80 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy clouds... | Astronomical Obs. |
| Dorpat | 29.36 | 745.8 | 29.61 | 752.1 | 41.5 | 5.3 | 76 | SSE | 4 | 2 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.63 | 752.6 | 29.65 | 753.0 | 40.3 | 4.6 | 90 | SSE | 13 | 6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.15 | 740.4 | 29.48 | 748.7 | 36.3 | 2.4 | 100 | S | 18 | 8 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Ch. Forsten. |
| Kieff | 28.79 | 731.3 | 29.42 | 747.2 | 50.9 | 10.5 | 81 | ESE | 7 | 3 | ..... | ..... | 9c;ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.43 | 747.5 | 29.50 | 749.3 | 59.7 | 15.4 | 64 | SW | 4 | 2 | ..... | ..... | 5k | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.61 | 752.0 | 29.63 | 752.5 | 51.4 | 10.8 | 86 | S | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.45 | 748.0 | 30.01 | 762.3 | 39.9 | 4.4 | 71 | S | 13 | 6 | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.50 | 749.3 | 29.70 | 754.4 | 55.4 | 13.0 | 42 | ESE | 34 | 15 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Archangel | 29.85 | 758.3 | 29.87 | 758 8 | 46.6 | 8.1 | 62 | SSE | 13 | 6 | ..... | ..... | 8k | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.48 | 723.4 | 29.88 | 759.0 | 59.7 | 15.4 | 54 | S | 4 | 2 | ..... | ..... | 6k | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.12 | 765.1 | 30.04 | 763.0 | 49.3 | 9.6 | 47 | E | 11 | 5 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Krotkowo* | 29.80 | 756.8 | 30.27 | 768.9 | 48.2 | 9.0 | 40 | ENE | 13 | 6 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 30.08 | 764.1 | 30.36 | 771.2 | 47.1 | 8.4 | 49 | NE | 4 | 2 | ..... | ..... | 2k | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 29.51 | 749.5 | 30.47 | 774.0 | 48.9 | 9.4 | 21 | SSE | 4 | 2 | ..... | ..... | 1c | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.74 | 755.5 | 29.98 | 761.5 | 51.4 | 10.8 | 89 | NNE | 9 | 4 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.51 | 724.1 | 30.21 | 767.3 | 55.8 | 13.2 | 62 | Calm | 0 | 0 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 30.00 | 762.0 | 30.56 | 776.1 | 29.8 | — 1.2 | 65 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 30.13 | 765.2 | 30.48 | 774.1 | 14.7 | — 9.6 | 71 | NW | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 29.98 | 761.4 | 30.12 | 765.0 | 42.3 | 5.7 | 18 | NW | 2 | 1 | ..... | ..... | 3k | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.04 | 686.9 | 29.15 | 740.3 | 23.0 | — 5.0 | 90 | N | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Meteorological Obs. |
| Vladivostock | 29.48 | 748.7 | 29.58 | 751.2 | 35.6 | 2.0 | 87 | SE | 13 | 6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 20.3 | — 6.5 | 87 | E | 13 | 6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 5° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.72 | 775.0 | 29.83 | 757.7 | 63.5 | 17.5 | 36 | W | 6.0 | 2.69 | ..... | 1cs | 0 | W | ..... | 0 | 0 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.95 | 760 6 | 30.00 | 762.0 | 59.5 | 15.3 | 66 | NW | 7.3 | 3.28 | ..... | 2 | 7 | NW | ..... | 0.118 | 3.0 | Almost cov. | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.02 | 686.2 | ..... | ..... | 54.3 | 12.4 | 69 | SW | 16.4 | 7.32 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Light clouds | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.77 | 705.4 | 30.00 | 762.0 | 60.8 | 16.0 | 44 | W | 17.2 | 7.67 | ..... | 0 | 3 | ..... | ..... | 0.012 | 0.3 | Cloudy | The Staff. |
| Murcia, Met. Obs'y | 29.82 | 757.5 | 29.97 | 761.2 | 75.2 | 24.0 | 35 | N | 3.8 | 1.69 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.13 | 739.8 | 30.03 | 762.7 | 53.8 | 12.1 | 79 | SW | 6.8 | 3.06 | ..... | ..... | 10 | ..... | ..... | 0.083 | 2.1 | Covered | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.85 | 758.1 | 29.91 | 759.7 | 77.7 | 25.4 | 82 | SSE | 6.9 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 30.11 | 764.8 | 30.21 | 767.3 | 60.3 | 15.7 | 74 | WNW | 15.7 | 7.0 | ..... | 0 | 3 | ..... | W | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.87 | 758.6 | 29.96 | 760.9 | 81.7 | 27.6 | 78 | SE | ..... | ..... | ..... | 6cs | 2k | SE | SE | 0.089 | 2.25 | D. clouds | Leonardo de Tejeda, Chief of Engineers. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er (0–10. | Clouds. Amount. Low'r (0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.39 | 746.6 | 29.43 | 747.6 | 37.4 | 3.0 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.20 | 741.7 | 29.25 | 743.0 | 34.5 | 1.4 | 100 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | |
| Hernosand | 29.25 | 742.9 | 29.30 | 744.2 | 33.4 | 0.8 | 90 | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.20 | 741.6 | 29.37 | 746.1 | 40.6 | 4.8 | 55 | SSE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.28 | 743.7 | 29.34 | 745.2 | 45.0 | 7.2 | 69 | SE | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.30 | 744.1 | 29.37 | 746.0 | 40.8 | 4.9 | 64 | SSE | 8.1 | 3.6 | ..... | ..... | 7 | ..... | SW | 0.033 | 0.85 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.21 | 716.6 | 29.67 | 753.6 | 43.5 | 6.4 | 71 | SSW | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 0.327 | 8.3 | Raining | The Observatory. |
| Zurich | 27.95 | 709.9 | 29.64 | 752.8 | 39.3 | 4.0 | 88 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.303 | 7.7 | Rain & snow | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —7.6 mm.; Thermometer, —3.7 cent.; Relative Humidity, +13 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.77 | 756.2 | 62.4 | 16.9 | 38 | SW | 10 | 4.5 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanides. |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. Bertrand. |
| Valona | ..... | ..... | 29.84 | 757.8 | 58.5 | 14.7 | ..... | S | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Imperial Observatory. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.68 | 753.9 | 29.79 | 756.7 | 73.6 | 23.1 | 56 | E | ..... | ..... | 1 | ..... | 10cs | ..... | ..... | 0 | 0 | Overcast | Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.61 | 752.1 | 29.68 | 753.9 | 32.7 | 0.4 | 95 | NE | 13 | 5.8 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Cloudy | Hon. J. Ferguson. |
| Brockville, Ontario | 29.48 | 748.8 | 29.80 | 756.9 | 37 | 2.8 | ..... | W | 1 | 0.4 | ..... | ..... | 8s | ..... | W | 0 | 0 | Cloudy | W. R. Bigg. |
| *Chatham, N B | 29.53 | 750.9 | 29.60 | 751.8 | 31 | — 0.6 | 94 | N | 11 | 4.9 | ..... | ..... | 10n | ..... | NE | 0.15 | 3.8 | Light snow | G. A. Blair. |
| Charlottetown, P. E. Island | 29.38 | 746.9 | 29.43 | 747.5 | 34 | 1.1 | 96 | N | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.070 | 1.78 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.58 | 751.3 | 29.78 | 756.4 | 35.2 | 1.8 | 85 | E | ..... | ..... | 1 | ..... | 10n | ..... | ..... | ..... | ..... | Snowing | James Smith, M. A. |
| Dalhousie, N. B | 29.65 | 753.1 | 29.68 | 753.9 | 33.5 | 0.8 | 72 | NW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.3 | 7.6 | Gloomy | H. A. Johnson. |
| Esquimault, B. C | 29.86 | 758.4 | 29.90 | 759.4 | 50.3 | 10.2 | 100 | Calm | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Cloudy | W. H. Bevis. |
| *Father Point, Quebec | 29.75 | 755.6 | 29.78 | 756.4 | 31 | — 0.6 | 91 | NE | 32 | 14.3 | ..... | ..... | 10n | ..... | NE | 0.50 | 12.7 | Threatening | J. McWilliams. |
| Fredericton, N. B | 29.56 | 750.8 | 29.63 | 752.6 | 34.0 | 1.1 | 66 | NW | 9 | 4.0 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | Prof. Harrison. |
| *Fort Garry Manitoba | 29.27 | 743.4 | 30.11 | 764.8 | 30 | — 1.1 | 89 | NE | 4 | 1.8 | ..... | 2cs | 2ks | E | E | 0 | 0 | Fair | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.76 | 730.5 | 29.88 | 758.9 | 39 | 3.9 | 91 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Grant. |
| *Halifax, N. S | 29.21 | 741.9 | 29.34 | 745.2 | 35 | 1.7 | 94 | N | 11 | 4.9 | ..... | ..... | 10n | ..... | N | 0.127 | 3.23 | Cloudy | F. Allison, M. A. |
| Hamilton, Ontario | 29.50 | 749.3 | 29.88 | 758.9 | 42.2 | 5.7 | 74 | NE | ..... | ..... | 1 | 0 | ..... | ..... | ..... | 0 | 0 | Clear | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.43 | 747.5 | 29.46 | 748.3 | 39 | 3.9 | 82 | NE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.02 | 0.5 | Overcast | E. Weedon. |
| *Kingston, Ontario | 29.46 | 748.3 | 29.80 | 756.9 | 44 | 6.7 | 43 | N | 4 | 1.8 | ..... | 8c | 0 | Calm | ..... | 0 | 0 | Fair | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.30 | 744.2 | 29.34 | 745.2 | 33 | 0.6 | ..... | N | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0.26 | 6.6 | Raining | C. H. Rigby. |
| *Montreal, Quebec | 29.58 | 751.3 | 29.79 | 756.7 | 33 | 0.6 | 88 | N | 3 | 1.3 | ..... | ..... | 10n | ..... | ..... | Inap. | Inap. | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.15 | 740.4 | 29.87 | 758.7 | 31 | — 0.6 | 89 | N | 2 | 0.9 | ..... | 2cs | 0 | N | ..... | 0 | 0 | Fair | Rev. R. Mosley. |
| Peterboro, Ontario | 29.07 | 738.4 | 29.84 | 757.9 | 39.7 | 4.3 | 55 | W | ..... | ..... | ..... | 0 | 8ck | ..... | ..... | 0 | 0 | Bright | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.18 | 741.2 | 29.89 | 759.2 | 36 | 2.2 | 90 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | H. Morgan. |
| Port Hastings, N. S | 29.27 | 743.4 | 29.32 | 744.7 | 34.6 | 1.4 | ..... | W | 3 | 1.3 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Foggy | Peter Grant. |
| Port Stanley, Ontario | 29.25 | 742.9 | 29.92 | 760.0 | 31 | — 0.6 | 95 | W | 4 | 1.8 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | M. Payne. |
| *Quebec, Quebec | 29.45 | 748.0 | 29.78 | 756.4 | 32 | 0.0 | 90 | NE | ..... | ..... | 3 | ..... | 10n | ..... | NE | 0.07 | 1.8 | Cloudy | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.39 | 746.5 | 29.86 | 758.4 | 36 | 2.2 | 54 | NW | 4 | 1.8 | ..... | ..... | 8s | ..... | W | 0 | 0 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 29.50 | 749.3 | 29.55 | 750.6 | 33 | 0.6 | 84 | N | 4 | 1.8 | ..... | 5k | 2ks | NE | ..... | 0.02 | 0.5 | Clearing | Dr. Gove. |
| St. John, N B | 29.37 | 746.0 | 29.54 | 750.3 | 31 | — 0.6 | 89 | N | 11 | 4.9 | ..... | ..... | 10n | ..... | ..... | 0.100 | 2.54 | Light snow | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.14 | 740.1 | 29.87 | 758.7 | 38 | 3.3 | 91 | Calm | 0 | 0 | ..... | 8cs | 0 | ..... | ..... | 0 | 0 | Cloudy | K. Stewart. |
| Stayner, Ontario | 29.07 | 738.4 | 29.86 | 758.4 | 42 | 5.6 | 58 | Calm | 0 | 0 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | R. J. Cole. |
| Stratford, Ontario | 28.57 | 725.7 | 29.90 | 759.4 | 32.3 | 0.2 | 98 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.32 | 744.7 | 29.35 | 745.5 | 35 | 1.7 | 97 | N | 7 | 3.1 | ..... | ..... | 10n | ..... | ..... | 0.29 | 7.4 | Light rain | T. C. Hill. |
| *Toronto, Ontario | 29.46 | 748.3 | 29.86 | 758.4 | 37 | 2.8 | 64 | W | 2 | 0.9 | ..... | 5cs | 0 | N | ..... | 0 | 0 | Fair | Magnetic Observatory. |
| Windsor, N. S | 29.30 | 744.2 | 29.40 | 746.7 | 33.5 | 0.8 | 95 | N | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | 0.07 | 1.8 | Snowing | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 37.5 | 3.1 | 100 | E | ..... | ..... | ..... | 5 | 5n | ..... | ..... | 0.06 | 1.5 | Foggy | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Byt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer: Corrected for instrumental error and temperature. Inches. | Barometer: Corrected for instrumental error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.47 | 748.5 | 29.70 | 754.4 | 41 | 5.0 | 65 | N | 18 | 8.0 | ..... | 2c | 2s | NW | NW | 0 | 0 | Fair | |
| Alpena, Michigan | 29.20 | 741.7 | 29.86 | 758.4 | 37 | 2.8 | 62 | NW | 4 | 1.8 | ..... | 2ck | 0 | SE | ..... | 0 | 0 | Fair | |
| Atlantic City, New Jersey | 29.75 | 755.6 | 29.77 | 756.1 | 47 | 8.3 | 77 | W | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Augusta, Georgia | 29.76 | 755.9 | 29.94 | 760.5 | 53 | 11.7 | 48 | E | 9 | 4.0 | ..... | 2cs | 8s | Calm | SE | 0 | 0 | Cloudy | |
| Baltimore, Maryland | 29.79 | 756.7 | 29.84 | 757.9 | 49 | 9.4 | 64 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Barnegat, New Jersey | 29.71 | 754.6 | 29.74 | 754.4 | 49 | 9.4 | 57 | NW | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Bismarck, Dakota | 28.19 | 716.0 | 30.05 | 763.3 | 34 | 1.1 | 79 | NE | 2 | 0.9 | ..... | 0 | 5s | ..... | Calm | Inap. | Inap. | Fair | |
| Boise City, Idaho | 27.23 | 691.6 | 30.11 | 764.8 | 44 | 6.7 | 84 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boston, Massachusetts | 29.50 | 749.3 | 29.66 | 753.4 | 39 | 3.9 | 65 | NW | 6 | 2.7 | ..... | 1k | 5s | ..... | NW | Inap. | Inap. | Fair | |
| Brackettville, Texas | 28.83 | 732.3 | 29.86 | 758.4 | 58 | 14.4 | 53 | Calm | 0 | 0 | ..... | 10k | 0 | W | ..... | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 29.02 | 737.1 | 30.05 | 763.5 | 34 | 1.1 | 90 | N | 5 | 2.2 | ..... | 0 | 1ks | ..... | Calm | 0 | 0 | Clear | |
| Brownsville, Texas | 29.85 | 758.2 | 29.91 | 759.7 | 63 | 17.2 | 94 | N | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Buffalo, New York | 29.12 | 739.6 | 29.83 | 757.7 | 37 | 2.8 | 100 | SW | 12 | 5.4 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 50 | 10.0 | 65 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.50 | 749.3 | 29.77 | 756.1 | 35 | 1.7 | 70 | N | 9 | 4.0 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Cairo, Illinois | 29.60 | 751.8 | 30.00 | 762.0 | 48 | 8.9 | 85 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Grant, Arizona | 25.23 | 640.8 | 30.03 | 762.7 | 40 | 4.4 | 65 | E | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | 26.83 | 682.2 | 30.35 | 770.9 | 40 | 4.4 | 82 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.42 | 696.5 | 30.00 | 762.0 | 36 | 2.2 | 80 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 29.88 | 758.9 | 29.88 | 758.9 | 52 | 11.1 | 86 | NE | 15 | 6.7 | ..... | 0 | 5s | ..... | W | 0 | 0 | Fair | |
| Cape Henry, Virginia | 29.84 | 757.9 | 29.86 | 758.4 | 52 | 11.1 | 66 | NW | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 29.88 | 758.9 | 29.89 | 759.2 | 52 | 11.1 | 73 | NW | 12 | 5.4 | ..... | 8cs | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Cape May, New Jersey | 29.77 | 756.1 | 29.80 | 756.9 | 46 | 7.8 | 84 | NW | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 29.89 | 759.2 | 29.95 | 760.7 | 53 | 11.7 | 61 | NE | 14 | 6.3 | ..... | 5cs | 0 | W | ..... | Inap. | Inap. | Fair | |
| Cheyenne, Wyoming | 24.09 | 611.9 | 30.03 | 762.7 | 36 | 2.2 | 71 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Threatening | |
| Chicago, Illinois | 29.17 | 740.9 | 29.87 | 758.7 | 42 | 5.6 | 74 | SW | 7 | 3.1 | ..... | 10k | 0 | SE | ..... | 0 | 0 | Cloudy | |
| Cincinnati, Ohio | 29.28 | 743.7 | 29.94 | 760.5 | 44 | 6.7 | 76 | SE | 3 | 1.3 | ..... | 1k | Fog | W | Calm | 0 | 0 | Clear | |
| Cleveland, Ohio | 29.19 | 741.4 | 29.92 | 760.0 | 42 | 5.6 | 74 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Concho, Texas | 28.10 | 713.7 | 29.7 | 756.7 | 53 | 11.7 | 79 | SE | ..... | ..... | 3 | 8k | 0 | SE | ..... | 0.06 | 1.5 | Cloudy | |
| Corsicana, Texas | 29.53 | 750.0 | 30.00 | 762.0 | 53 | 11.7 | 67 | N | 6 | 2.7 | ..... | 2cs | 8s | Calm | Calm | 0 | 0 | Cloudy | |
| Davenport, Iowa | 29.30 | 744.2 | 29.95 | 760.7 | 39 | 3.9 | 82 | W | 2 | 0.9 | ..... | 4ck | 0 | NW | ..... | 0 | 0 | Fair | |
| Deadwood, Dakota | 25.47 | 646.9 | ..... | ..... | 30 | — 1.1 | 78 | S | 1 | 0.4 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Denison, Texas | 29.20 | 741.7 | 30.00 | 762.0 | 50 | 10.0 | 65 | N | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Denver, Colorado | 24.85 | 631.2 | 30.07 | 763.8 | 41 | 5.0 | 82 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | N | 0 | 0 | Threatening | |
| Detroit, Michigan | 29.21 | 741.9 | 29.88 | 758.9 | 39 | 3.9 | 73 | W | 4 | 1.8 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Dodge City, Kansas | 27.36 | 694.9 | 29.67 | 753.6 | 42 | 5.6 | 83 | NW | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0.06 | 1.5 | Clear | |
| Dubuque, Iowa | 29.23 | 742.4 | 29.94 | 760.5 | 41 | 5.0 | 49 | NW | 1 | 0.4 | ..... | 5k | 0 | NW | ..... | 0 | 0 | Fair | |
| Duluth, Minnesota | 29.28 | 743.7 | 29.97 | 761.2 | 40 | 4.4 | 48 | N | 6 | 2.7 | ..... | 8cs | 0 | N | ..... | 0 | 0 | Fair | |
| Eagle Pass, Texas | 29.20 | 741.7 | 29.93 | 760.2 | 59 | 15.0 | 65 | Calm | 0 | 0 | ..... | 10k | ..... | E | ..... | 0 | 0 | Cloudy | |
| Eastport, Maine | 29.17 | 748.5 | 29.54 | 759.3 | 33 | 0.6 | 89 | N | 16 | 7.2 | ..... | ..... | 10n | ..... | N | 0.23 | 5.8 | Light snow | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 57 | 13.9 | 57 | Calm | ..... | ..... | 0 | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Erie, Pennsylvania | 29.14 | 740.1 | 29.86 | 758.4 | 44 | 6.7 | 84 | SW | 4 | 1.8 | ..... | 5k | 0 | W | ..... | 0 | 0 | Fair | |
| Escanaba, Michigan | 29.24 | 742.7 | 29.91 | 759.7 | 34 | 1.1 | 62 | W | 4 | 1.8 | ..... | 5k | 0 | W | ..... | 0 | 0 | Fair | |
| Florence, Arizona | 28.37 | 720.6 | 29.97 | 761.2 | 50 | 10.0 | 65 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | 24.12 | 612.6 | 30.12 | 765.0 | 32 | 0.0 | 60 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.55 | 649.0 | ..... | ..... | 31 | — 0.6 | 68 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | ..... | ..... | ..... | ..... | 50 | 10.0 | 100 | NE | 3 | 1.3 | ..... | ..... | 10n | ..... | NE | 0.08 | 2.0 | Light rain | |
| Fort Gibson, Indian Ter | 29.40 | 746.7 | 29.95 | 760.7 | 43 | 6.1 | 75 | E | 3 | 1.3 | ..... | 2c | 0 | NE | ..... | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.63 | 727.2 | 29.91 | 759.7 | 48 | 8.9 | 63 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Fort St. Michael, Alaska | 29.40 | 746.7 | 29.43 | 747.5 | 17 | — 8.3 | 100 | S | 10 | 4.5 | ..... | ..... | 10n | ..... | S | 0.11 | 2.8 | Snowing | |
| Fort Sill, Indian Territory | 28.77 | 730.7 | 29.89 | 759.2 | 45 | 7.2 | 84 | Calm | 0 | 0 | ..... | 2cs | 5s | SW | SW | 0 | 0 | Fair | |
| Galveston, Texas | 29.88 | 758.9 | 29.92 | 760.0 | 61 | 16.1 | 66 | NE | 8 | 3.6 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair | |
| Grand Haven, Michigan | 29.24 | 742.7 | 29.99 | 759.4 | 40 | 4.4 | 73 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianapolis, Indiana | 29.13 | 739.9 | 29.91 | 759.7 | 48 | 8.9 | 63 | SW | 8 | 3.6 | ..... | 8ck | 0 | W | ..... | 0 | 0 | Fair | |
| Indianola, Texas | 29.92 | 760.0 | 29.94 | 760.5 | 63 | 17.2 | 62 | NE | 12 | 5.4 | ..... | 2k | 2ks | W | W | 0 | 0 | Fair | |
| Jacksboro, Texas | 28.85 | 732.8 | 29.99 | 761.7 | 50 | 10.0 | 79 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| Jacksonville, Florida | 29.86 | 758.4 | 29.88 | 758.9 | 66 | 18.9 | 79 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | NE | 0.96 | 24.4 | Cloudy | |
| Keokuk, Iowa | 29.31 | 744.5 | 29.93 | 760.2 | 43 | 6.1 | 59 | NW | 4 | 1.8 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Key West, Florida | 29.86 | 758.4 | 29.89 | 759.2 | 79 | 26.1 | 82 | S | 10 | 4.5 | ..... | 3c;k | 0 | SW;S | ..... | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 29.86 | 758.4 | 29.89 | 759.2 | 49 | 9.4 | 78 | N | 17 | 7.6 | ..... | 2cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Knoxville, Tennessee | 28.98 | 736.1 | 30.00 | 762.0 | 41 | 5.0 | 74 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Crosse, Wisconsin | 29.19 | 741.4 | 29.94 | 760.5 | 38 | 3.3 | 72 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 26.12 | 663.4 | 30.27 | 768.8 | 39 | 3.9 | 71 | S | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.51 | 749.5 | 29.85 | 758.2 | 63 | 17.2 | 57 | NE | 6 | 2.7 | ..... | 10ck | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 29.05 | 737.9 | 29.99 | 759.4 | 42 | 5.6 | 83 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Los Angeles, California | 29.65 | 753.1 | 29.98 | 761.5 | 56 | 13.3 | 61 | N | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.38 | 746.2 | 29.94 | 760.5 | 47 | 8.3 | 70 | W | 2 | 0.9 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Smoky | |
| Lynchburg, Virginia | 29.23 | 742.4 | 29.91 | 759.7 | 50 | 10.0 | 45 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.18 | 741.2 | 29.89 | 759.2 | 37 | 2.8 | 71 | NW | 12 | 5.4 | ..... | 5ck | 0 | Calm | ..... | 0 | 0 | Fair | |
| Mason, Texas | 28.37 | 720.6 | 30.12 | 765.0 | 55 | 12.8 | 50 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Memphis, Tennessee | 29.67 | 753.6 | 29.99 | 761.7 | 47 | 8.3 | 77 | Calm | 0 | 0 | ..... | 0 | Fg.sm' | ..... | ..... | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.13 | 739.9 | 29.86 | 758.4 | 40 | 4.4 | 73 | W | 6 | 2.7 | ..... | 0 | 5ks | ..... | NW | 0 | 0 | Fair | |
| Mobile, Alabama | 29.88 | 758.9 | 29.92 | 760.0 | 57 | 13.9 | 75 | N | 8 | 3.6 | ..... | 8c | 2s | W | Calm | Inap. | Inap. | Cloudy | |
| Montgomery, Alabama | 29.71 | 754.6 | 29.95 | 760.7 | 54 | 12.2 | 60 | N | 2 | 0.9 | ..... | 10c | Haze | SW | Calm | Inap. | Inap. | Cloudy | |
| Morgantown, West Virginia | 28.87 | 733.3 | 29.93 | 760.2 | 43 | 6.1 | 75 | SW | 3 | 1.3 | ..... | 0 | Haze | ..... | ..... | 0.01 | 0.3 | Clear | |
| Mt. Washington, N. H. | 23.29 | 591.6 | 29.65 | 753.1 | 21 | — 6.1 | 71 | NE | 18 | 8.0 | ..... | 8cs | 8s | W | NE | 0.39 | 9.9 | Cloudy | |
| Nashville, Tennessee | 29.46 | 748.3 | 30.00 | 762.0 | 44 | 6.7 | 84 | NW | 3 | 1.3 | ..... | ..... | Haze | ..... | Calm | 0 | 0 | Hazy | |
| New Haven, Connecticut | 29.59 | 751.6 | 29.71 | 754.6 | 46 | 7.8 | 62 | NW | 5 | 2.2 | ..... | 5ck | 2s | NW | ..... | 0 | 0 | Cloudy | |
| New London, Connecticut | 29.64 | 752.8 | 29.69 | 754.1 | 45 | 7.2 | 61 | W | 4 | 1.8 | ..... | 0 | 8s | ..... | NW | 0 | 0 | Fair | |
| New Orleans, Louisiana | 29.83 | 757.7 | 29.89 | 759.2 | 61 | 16.1 | 55 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Newport, Rhode Island | 29.61 | 752.1 | 29.66 | 753.4 | 42 | 5.6 | 66 | NW | 10 | 4.5 | ..... | 5k | 0 | NW | ..... | 0.01 | 0.3 | Fair | |
| New York, New York | 29.56 | 750.8 | 29.73 | 755.1 | 46 | 7.8 | 61 | W | 8 | 3.6 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| Norfolk, Virginia | 29.84 | 757.9 | 29.90 | 759.4 | 49 | 9.4 | 57 | N | 7 | 3.1 | ..... | 2cs | Sm'e | W | ..... | 0 | 0 | Fair | |
| North Platte, Nebraska | 27.12 | 688.8 | 29.78 | 756.4 | 32 | 0.0 | 89 | NW | 8 | 3.6 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Hazy | |
| Olympia, Washington Ter. | 29.86 | 758.4 | 29.90 | 759.4 | 47 | 8.3 | 93 | Calm | 0 | 0 | ..... | ..... | 8s | ..... | Calm | 0 | 0 | Cloudy | |
| Omaha, Nebraska | 28.85 | 732.8 | 29.94 | 760.5 | 43 | 6.1 | 83 | N | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Oswego, New York | 29.58 | 751.3 | 29.90 | 759.4 | 42 | 5.6 | 74 | W | 10 | 4.5 | ..... | 8c | 0 | NW | ..... | 0 | 0 | Fair | |
| Pembina, Dakota | 29.25 | 742.9 | 30.10 | 764.5 | 37 | 2.8 | 81 | NW | 2 | 0.9 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Philadelphia, Pennsylvania | 29.74 | 755.4 | 29.79 | 756.7 | 48 | 8.9 | 56 | NW | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Phœnix, Arizona | 28.85 | 732.8 | 30.70 | 779.8 | 50 | 10.0 | 65 | N | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.67 | 448.8 | 29.88 | 758.9 | 7 | —13.9 | 100 | NE | 16 | 7.2 | ..... | ..... | 10n | ..... | NE | 0.05 | 1.3 | Light snow | |
| Pioche, Nevada | 24.13 | 612.9 | 29.90 | 759.4 | 37 | 2.8 | 53 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.03 | 738.9 | 29.91 | 759.7 | 41 | 5.0 | 82 | W | 5 | 2.2 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Port Huron, Michigan | 29.19 | 741.4 | 29.86 | 758.4 | 43 | 6.1 | 75 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Portland, Maine | 29.60 | 751.8 | 29.65 | 753.1 | 41 | 5.0 | 65 | N | 9 | 4.0 | ..... | 10k | Haze | NW | ..... | 0.04 | 1.0 | Cloudy | |
| Portland, Oregon | 29.86 | 758.4 | 29.97 | 761.2 | 50 | 10.0 | 86 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Prescott, Arizona | 24.86 | 631.4 | 30.22 | 767.6 | 31 | — 0.6 | 79 | S | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Punta Rassa, Florida | 29.86 | 758.4 | 29.88 | 758.9 | 77 | 25.0 | 82 | SW | 12 | 5.4 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Red Bluff, California | 29.67 | 753.6 | 30.03 | 762.7 | 52 | 11.1 | 86 | NW | 2 | 0.9 | ..... | 2k | 0 | Calm | ..... | 0 | 0 | Clear. | |
| Rochester, New York | 29.17 | 740.9 | 29.79 | 756.7 | 42 | 5.6 | 74 | W | 10 | 4.5 | ..... | Sck;cs | 0 | W | ..... | 0 | 0 | Fair | |
| Roseburg, Oregon | 29.40 | 746.7 | 29.98 | 761.5 | 45 | 7.2 | 96 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Sacramento, California | 29.92 | 760.0 | 30.00 | 762.0 | 55 | 12.8 | 93 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| St. Louis, Missouri | 29.40 | 746.7 | 29.97 | 761.2 | 48 | 8.9 | 70 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| St. Marks, Florida | 29.83 | 757.7 | 29.85 | 758.2 | 64 | 17.8 | 73 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | N | 0.22 | 5.6 | Cloudy | |
| St. Paul, Minnesota | 29.08 | 738.6 | 29.92 | 760.0 | 40 | 4.4 | 76 | NW | 4 | 1.8 | ..... | 8k | 0 | N | ..... | 0 | 0 | Cloudy. | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.75 | 654.0 | 30.08 | 764.0 | 41 | 5.0 | 65 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| San Antonio, Texas | 29.28 | 743.7 | 29.86 | 758.4 | 59 | 15.0 | 54 | N | 3 | 1.3 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy. | |
| San Diego, California | 29.96 | 761.0 | 30.03 | 762.7 | 55 | 12.8 | 68 | NE | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Sandusky, Ohio | 29.26 | 743.2 | 29.93 | 760.2 | 43 | 6.1 | 83 | SW | 8 | 3.6 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear. | |
| Sandy Hook, New Jersey | 29.71 | 754.6 | 29.74 | 755.4 | 46 | 7.8 | 77 | W | 15 | 6.7 | ..... | 5ck | 0 | NW | ..... | 0 | 0 | Fair. | |
| San Francisco, California | 29.99 | 761.7 | 30.06 | 763.5 | 52 | 11.1 | 86 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Santa Fé, New Mexico | 23.30 | 591.8 | 29.84 | 757.9 | 28 | — 2.2 | 60 | NE | 6 | 2.7 | ..... | 1c | 0 | Calm | ..... | 0.07 | 1.8 | Clear. | |
| Savannah, Georgia | 29.82 | 757.4 | 29.92 | 760.0 | 57 | 13.9 | 87 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap | Cloudy. | |
| Shreveport, Louisiana | 29.78 | 756.4 | 30.00 | 762.0 | 53 | 11.7 | 80 | Calm | 0 | 0 | ..... | 1c | 0 | W | ..... | 0 | 0 | Clear. | |
| Smithville, North Carolina | 29.91 | 759.7 | 29.95 | 760.7 | 49 | 9.4 | 71 | N | 10 | 4.5 | ..... | 2c | 0 | W | ..... | 0 | 0 | Fair. | |
| Springfield, Massachusetts | 29.50 | 749.3 | 29.63 | 752.6 | 46 | 7.8 | 54 | N | 3 | 1.3 | ..... | 5ck | 0 | NW | ..... | 0 | 0 | Fair. | |
| Stockton, Texas | 27.02 | 686.3 | 30.02 | 762.5 | 46 | 7.8 | 92 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.20 | 5.1 | Light rain | |
| Thatcher's Island, Mass. | 29.61 | 752.1 | 29.66 | 753.4 | 39 | 3.9 | 73 | N | 12 | 5.4 | ..... | 2k | Ss | NW | NE | Inap | Inap. | Cloudy. | |
| Toledo, Ohio, | 29.22 | 742.2 | 29.90 | 759.4 | 45 | 7.2 | 76 | W | 3 | 1.3 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear. | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 49 | 9.4 | 64 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Tybee Island, Georgia | 29.88 | 758.9 | 29.91 | 759.7 | 60 | 15.6 | 88 | NE | 20 | 8.9 | ..... | 0 | 8ks | ..... | NE | 0 | 0 | Cloudy. | |
| Umatilla, Oregon | 29.70 | 754.4 | ..... | ..... | 46 | 7.8 | 92 | Calm | 0 | 0 | ..... | 2ck | 0 | W | ..... | 0 | 0 | Clear. | |
| Vicksburg, Mississippi | 29.73 | 755.1 | 29.99 | 761.7 | 54 | 12.2 | 67 | E | 1 | 0.4 | ..... | 2c | 0 | SW | ..... | 0 | 0 | Clear. | |
| Virginia City, Montana | 24.46 | 621.3 | 29.94 | 760.5 | 36 | 2.2 | 71 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Visalia, California | 29.67 | 753.6 | 30.05 | 763.3 | 51 | 10.6 | 86 | E | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Washington, D. C. | 29.76 | 755.9 | 29.87 | 758.7 | 47 | 8.3 | 62 | NW | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 45 | 7.2 | 61 | SW | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Wilmington, N. Carolina | 29.87 | 758.7 | 29.95 | 760.7 | 46 | 7.8 | 76 | NW | 8 | 3.6 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair. | |
| Winnemucca, Nevada | 25.70 | 652.8 | 30.06 | 763.5 | 40 | 4.4 | 73 | NE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Wood's Holl, Mass. | 29.61 | 752.1 | 29.67 | 753.6 | 46 | 7.8 | 47 | NW | 8 | 3.6 | ..... | Haze | 2s | Calm | Calm | 0.01 | 0.3 | Fair | |
| Yankton, Dakota | 28.74 | 730.0 | 30.08 | 764.0 | 32 | 0.0 | 84 | NW | 2 | 0.9 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair. | |
| Yuma, Arizona | 29.80 | 756.9 | 29.97 | 761.2 | 54 | 12.2 | 60 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 30.09 | 764.3 | 30.15 | 765.8 | 22.0 | — 5.6 | 93 | NE | 4 | 1.8 | ..... | 2cs | 0 | S | ..... | 0.05 | 1.3 | Fair | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 29.89 | 759.2 | 29.91 | 759.7 | 80 | 26.7 | 78 | SE | 3.6 | 1.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 29.94 | 760.5 | 29.95 | 760.7 | 77 | 25.0 | 82 | Calm | 0 | 0 | ..... | 8c | 2s | Calm | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.85 | 758.2 | 29.93 | 760.2 | 81 | 27.2 | ..... | SE | 4 | 1.8 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy. | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | 30.00 | 762.0 | 30.00 | 762.0 | 81 | 27.2 | 87 | N | ..... | ..... | 2 | 5k | 7ks | E | ..... | 0 | 0 | ½ cloudy | C. J. Hering. |
| Batavia, Dutch Guiana, S. A. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.22 | 640.6 | ..... | ..... | 67.8 | 19.9 | 83 | Calm | ..... | ..... | 0 | ..... | 10s;p | ..... | ..... | 0.53 | 13.5 | ..... | Thomas Herran. |

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,156.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 m.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NavyYard, Mare Island, Cal. | 29.99 | 761.7 | 55 | 12.8 | 53 | 11.7 | 86 | SW | 11 | 4.9 | ..... | ..... | 10k | ..... | S | 0 | 0 | ..... | ..... | Threatening | |
| Navy Yard, Pensacola, Fla. | 30.01 | 762.2 | 60 | 15.6 | 61 | 16.1 | 88 | NNE | 7 | 3.1 | ..... | ..... | 8 | ..... | N | 0 | 0 | ..... | ..... | Cloudy | |
| NavyYard, Portsmouth, N.H | 29.79 | 756.7 | 77 | 25.0 | 38 | 3.3 | 72 | NW | 1 | 0.4 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy | |
| Naval Hospital, Yokohama, Japan | 30.15* | 765.8* | 63 | 17.2 | 56.4 | 14.7 | 99 | SW | ..... | ..... | 2 | ..... | 10n | ..... | SW | 0.41 | 10.4 | ..... | ..... | Showery | |
| Adams, Panama | 29.96 | 761.0 | 82 | 27.8 | 81 | 27.2 | 87 | NNW | ..... | ..... | 0-1 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear | |
| Alliance, Naples, Italy | 29.72‡ | 754.9‡ | ..... | ..... | 59 | 15.0 | 76 | W | ..... | ..... | 5 | ..... | 5 | ..... | W | ..... | ..... | Heavy | W | Cloudy | |
| Ashuelot, Shanghai, China | 30.04 | 763.0 | 69 | 20.6 | 61 | 16.1 | 82 | NE | ..... | ..... | 6 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Cloudy | |
| Canonicus, New Orleans, La. | 29.88 | 758.9 | 47 | 8.3 | 61 | 16.1 | 71 | N | ..... | ..... | 2 | ..... | 10 | ..... | S | ..... | ..... | ..... | ..... | Cloudy | |
| Colorado, New York, N. Y. | 29.71‡ | 754.6‡ | ..... | ..... | 50 | 10.0 | 52 | W | 6 | 2.7 | ..... | ..... | 2 | ..... | WNW | 0 | 0 | ..... | ..... | Hazy | |
| Constellation, N. 39° 31′ W. 67° 12′ | 29.71‡ | 754.6‡ | ..... | ..... | 40 | 4.4 | 82 | N | ..... | ..... | 4 | ..... | 2 | ..... | N | ..... | ..... | Smooth | N | Fair | |
| Constitution, N. 50° 07′, W. 1° 40′ | 29.43‡ | 747.5‡ | ..... | ..... | 49 | 9.4 | 63 | WSW | ..... | ..... | 4 | ..... | 1 | ..... | W | ..... | ..... | Smooth | ..... | Clear | |
| Despatch, Constantinople, Turkey | 29.80‡ | 756.9‡ | ..... | ..... | 65 | 18.3 | 44 | WSW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Enterprise, N. 24° 06′, W. 80° 03′ | 29.92‡ | 760.0‡ | ..... | ..... | 78 | 25.6 | 91 | W | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | Smooth | ..... | Fair | |
| Franklin, Norfolk, Va. | 30.33 | 770.4 | 71 | 21.7 | 50 | 10.0 | 58 | NNW | 10 | 4.5 | ..... | ..... | 8 | ..... | NNW | 0 | 0 | ..... | ..... | Clear | |
| Gettysburg Valetta, Malta | 29.96‡ | 761.0‡ | ..... | ..... | 64 | 17.8 | 94 | SSW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Guard, Porto Grande, Cape Verde Islands | 30.06 | 763.5 | 73 | 22.8 | 73 | 22.8 | 76 | NE | ..... | ..... | 2 | ..... | 8 | ..... | NE | ..... | ..... | Ground | NW | Cloudy | |
| Hartford, Montevideo, Uraguay | 29.94 | 760.5 | 72 | 22.2 | 70 | 21.1 | 85 | E | 15 | 6.7 | ..... | ..... | 10 | ..... | E | ..... | ..... | Mod'ate | E | Misty | |
| Marion, Smyrna, Turkey | 29.88 | 758.9 | 65 | 18.3 | 63 | 17.2 | 62 | NNW | ..... | ..... | 1 | ..... | 2 | ..... | W | 0 | 0 | Smooth | ..... | Fair | |
| Michigan, Erie, Pa. | 29.40 | 746.7 | 79 | 26.1 | 44 | 6.7 | 76 | W | ..... | ..... | 1 | ..... | 2 | ..... | W | ..... | ..... | ..... | ..... | Fair | |
| Monocacy, Shanghai, China | 29.76‡ | 755.9‡ | ..... | ..... | 67 | 19.4 | 37 | NE | ..... | ..... | 2-6 | ..... | 8 | ..... | NW | ..... | ..... | ..... | ..... | D. clouds | |
| New Hampshire, Port Royal, S. C. | 30.08 | 764.0 | 59 | 15.0 | 55 | 12.8 | 74 | NE | 24 | 10.7 | ..... | ..... | 2 | ..... | N | ..... | ..... | ..... | ..... | Clear | |
| Omaha, St. Thomas, W. I. | 30.00* | 762.0* | 82 | 27.8 | 82 | 27.8 | 71 | S | 2 | 0.9 | ..... | ..... | 5 | ..... | S | 0 | 0 | Smooth | ..... | Bright | |
| Onward, Callao, Peru | 30.00† | 762.0† | ..... | ..... | 72 | 22.2 | 85 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty | |
| Ossipee, Pensacola, Fla. | 29.92‡ | 760.0‡ | ..... | ..... | 61 | 16.1 | 71 | NNE | ..... | ..... | 3 | ..... | 8 | ..... | W | ..... | ..... | ..... | ..... | Threatening | |
| Palos, Shanghai, China | 30.12* | 765.0* | 72 | 22.2 | 60 | 15.6 | 88 | NNE | ..... | ..... | 4-6 | ..... | 10 | ..... | N&E | ..... | ..... | ..... | ..... | Squally | |
| Pensacola, Honolulu, H. I. | 30.28 | 769.1 | 75 | 23.9 | 71 | 21.7 | 71 | NE | 2 | 0.9 | ..... | ..... | 3 | ..... | ..... | 0.005 | 0.13 | ..... | ..... | Pleasant | |
| Plymouth, Norfolk, Va. | 29.84‡ | 757.9‡ | ..... | ..... | 50 | 10.0 | 72 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Powhatan, Norfolk, Va. | 29.96‡ | 761.0‡ | ..... | ..... | 51 | 10.6 | 93 | NW | 6.0 | 2.7 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Ranger, Amoy, China | 30.01* | 762.2* | ..... | ..... | 72 | 22.2 | 90 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Blue sky | |
| Rio Bravo, Brownsville, Texas | 29.84 | 757.9 | 65 | 18.3 | 64 | 17.8 | 100 | NW | ..... | ..... | 2 | ..... | 10 | ..... | NW | ..... | ..... | ..... | ..... | Cloudy | |
| Santee, Annapolis, Md. | 29.93‡ | 760.2‡ | ..... | ..... | 50 | 10.0 | 58 | NW | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Saratoga, Washington, D. C. | 29.80* | 756.9* | ..... | ..... | 51 | 10.6 | 86 | NW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| St. Louis, League Island, Pa | 29.81 | 757.2 | 63 | 17.2 | 49 | 9.4 | 71 | SW | 17 | 7.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Supply, Havre, France | 29.57 | 751.1 | 50 | 10.0 | 49 | 9.4 | 85 | W | ..... | ..... | 2 | ..... | 5? | ..... | W | ..... | ..... | ..... | ..... | Clear? | |
| Swatara, Aspinwall | 30.00 | 762.0 | 82 | 27.8 | 82 | 27.8 | 87 | Calm | ..... | ..... | 0 | ..... | 5 | ..... | N&E | ..... | ..... | ..... | ..... | Fair | |
| Tennessee, N. 8° 12′ E 70° 55′ | 29.89* | 759.2* | 88 | 31.1 | 87 | 30.6 | 69 | WSW | 1 | 0.4 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Smooth | ..... | Hazy | |
| Trenton, Piræus, Greece | 29.88‡ | 758.9‡ | ..... | ..... | 65 | 18.3 | 73 | WNW | ..... | ..... | 2-3 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Hazy | |
| Tuscarora, Pichilinque Bay, Mexico. | 29.99 | 761.7 | 66 | 18.9 | 64 | 17.8 | 78 | S | ..... | ..... | 0-1 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear | |
| Vandalia, N. 43° 26′, E. 9° 05′ | 29.56‡ | 750.8‡ | ..... | ..... | 55 | 12.8 | 68 | W | ..... | ..... | 8 | ..... | 0 | ..... | ..... | ..... | ..... | Rough Irreg lar | W | Clear | |
| Wabash, Boston, Mass. | 29.65‡ | 753.1† | ..... | ..... | 39 | 3.9 | 80 | NW | 5 | 2.2 | ..... | ..... | 8 | ..... | Calm | 0 | 0 | ..... | ..... | Fair | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Panama, N. 40°, W. 124° 20′ | | | 30.05* | 763.3* | | | | SE | | | 2 | | 10 | | | Mod'ate | SW | Variable | Capt. Seabury. |
| S. S. City of Peking, N. 37° 26′, W. 125° 20′ | | | 30.10† | 764.5† | 54 | 12.2 | 100 | S | 10.0 | 4.5 | | | 10 | | Calm | Small | W | Raining | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, N. 33° 10′, E. 135° 15′ | | | | | 68 | 20.0 | | E | | | 2 | | 10 | | ESE | Mod'ate | NE | Overcast | Capt. Maury. |
| S. S. Colima, N. 10° 26′, W. 86° 20′ | | | 29.92† | 760.0† | 85 | 29.4 | 83 | Calm | | | 0 | | 4 | | Calm | Small | WSW | Misty | Capt. Searle. |
| S. S. Costalica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

**WHITE STAR LINE MARINE SERIES.**

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. W. H. Thompson |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4.

**OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.**

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, N. 40° 18′, W. 158° 16′ | | | 29.92* | 760.0* | | | | S | | | 4 | | Heavy | | S | Heavy | S | Misty | Capt. John Metcalf. |
| S. S. Gaelic, Hong-Kong, China | | | 30.01† | 762.2† | 71 | 21.7 | 90 | W | | | 5 | | | | | | | Overcast | Capt. W. H. Kidley |
| S. S. Oceanic, N. 36° 15′, E. 177° 18′ | | | 29.52 | 749.8 | 44 | 6.7 | 100 | W | | | 6 | | 4 | | SW | Heavy | WSW | Squally | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

**NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.**

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg, N. 38° 10′, W. 45° 48′ | | | 29.74 | 755.4 | 68.5 | 20.3 | 84 | SSW | | | 5 | | k | | WSW | Smooth | SSW | Overcast | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | Character | Direction From— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois, N. 44° 24', W. 45° 53' | | | 29.45* | 748.0* | 60 | 15.6 | 94 | SE | | | 8 | | 5 | | NNE | Mod'ate | SE | Misty | Captain Shackelford. |
| S. S. Indiana, Liverpool | | | 29.27* | 743.4* | 43 | 6.1 | 100 | WNW | | | 6 | | 9 | | WNW | | | Cloudy | Captain Sargent. |
| S. S. Ohio, Philadelphia, Pa | | | 29.78 | 756.4 | 50 | 10.0 | 93 | NNW | | | 3 | | 1 | | NNW | | | Clear | Captain Morrison. |
| S. S. Pennsylvania | | | | | | | | | | | | | | | | | | | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Corrected for temperature and elevation, instrumental error not known.

| **RED STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland, N. 49° 34', W. 12° 02' | | | 29.67* | 753.6* | | | | WNW | 60 | 26 8 | | | 5 | | WNW | Heavy | WNW | Squally | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
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*Aneroid; regulated to standa d at Antwerp.

| **ALLAN LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Furnished by the coöperation of A. Schumacher, & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| S. S. Scandinavian, N. 51° 12', W. 29° 10' | | | 29.88 | 758.9 | 47 | 8.3 | | NNW | | | 5 | | 6 | | NNW | Long | NW | D. clouds | Capt. W. Richardson. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

| **MARINE SERIES. (Miscellaneous.)** | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Furnished by the coöperation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller, Crisfield, Md. | | | 29.77 | 756.1 | 51 | 10.6 | 65 | NW | 11 | 4.9 | | | 0 | | | | | Clear | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13', W. 67° 19' | | | 29.96 | 761.0 | 6 | —14.4 | 96 | N | 8.2 | 3.7 | | 0 | 8ks | | NNE | | | Fair | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg'd.) Chief Signal Officer, U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 3, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
0:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.08 | 764.1 | 63.9 | 17.7 | 84 | NE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Dr. Ollive. |
| Nemours | ..... | ..... | 30.05 | 763 3 | 64.4 | 18.0 | 71 | Calm | ..... | ..... | 0 | ..... | 7 | ..... | ..... | 0 | 0 | Very cloudy | Michel. |
| Algiers | ..... | ..... | 30.01 | 762.2 | 66.9 | 19.4 | 66 | NNE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Towliere. |
| La Calle | ..... | ..... | 30.08 | 764.1 | 68.4 | 20.2 | 68 | E | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Boulangeot. |
| Tunis | ..... | ..... | 30.17 | 766.3 | 71.2 | 21.8 | 40 | W | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair | Jacques. |
| Sfax | ..... | ..... | 30.20 | 767.0 | 68.0 | 20.0 | ..... | ENE | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Gau. |
| Saida | ..... | ..... | 30.08 | 764 1 | 71.6 | 22.0 | ..... | NNW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Herbin. |
| Tebessa | ..... | ..... | 30.08 | 764.1 | ..... | ..... | ..... | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Watrin. |
| Geriville | ..... | ..... | 30.01 | 762.3 | 62.6 | 17.0 | 86 | WSW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Lemaillot. |
| Laghouat | ..... | ..... | 30.22 | 767.5 | 69.8 | 21.0 | 91 | Calm | ..... | ..... | 0 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair | Bertrand. |
| Biskra | ..... | ..... | 30.21 | 767.2 | 79.5 | 26.4 | 44 | NNW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Chauvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.33 | 744.9 | 29.87 | 758.8 | 55.8 | 13.2 | 51 | SW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.07 | 738.3 | 29.86 | 758.5 | 40.6 | 4.8 | 71 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.756 | 19.2 | ..... | Dr. Wierzbiski. |
| Eperies | 28.80 | 731.6 | 29.70 | 754 4 | 38.5 | 3.6 | 88 | N | ..... | ..... | 3 | ..... | 10n | ..... | ..... | 0.502 | 12.75 | ..... | Julius Mikolik. |
| Gratz | 28.63 | 727 3 | 29.88 | 759.0 | 50 9 | 10.5 | 41 | SW | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.27 | 718.1 | 29.70 | 754 3 | 47.3 | 8.5 | 88 | W | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.60 | 726.5 | 29.98 | 761.4 | 41.4 | 5.2 | 87 | WNW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner |
| Lemberg | 28.62 | 726.9 | 29.60 | 751.7 | 51.4 | 10.8 | 65 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.087 | 2.2 | ..... | Dr. T. Stanecki. |
| Pola | 29.82 | 757.3 | 29.93 | 760.2 | 57.4 | 14.1 | 63 | SE | ..... | ..... | 1 | ..... | 5ns | ..... | ..... | 0.142 | 3.6 | ..... | I.R.Hydrographic Office |
| Szathmar | 29 28 | 743.8 | 29.75 | 755.7 | 45.3 | 7.4 | 77 | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.476 | 12.1 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.47 | 748.5 | 29.75 | 755.6 | 51.8 | 11.0 | 45 | NW | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Karl Stancel. |
| Trieste | 29.84 | 757.8 | 29.94 | 760.4 | 52.6 | 11.4 | 84 | W | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Fair | P. Busin. |
| Vienna | 29.15 | 740.3 | 29.86 | 758.4 | 53.6 | 12 0 | 35 | WNW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.27 | 718.0 | 29.80 | 756.9 | 40.6 | 4.8 | 85 | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.720 | 18.3 | ..... | Prof. M. Passau. |
| Brussels | 29.45 | 748.0 | 29.65 | 753.1 | 46.4 | 8.0 | 70 | SSW | ..... | ..... | 5 | ..... | 10 | ..... | SSW | 0.339 | 8.6 | Raining | Royal Observatory. |
| Furnes | 29.57 | 751.1 | 29.60 | 751.7 | 42.8 | 6.0 | 87 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.303 | 7.7 | Raining | M. E. de Cae. |
| Maeseyck | 29.55 | 750.6 | 29.68 | 753.8 | 47.5 | 8.6 | 77 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

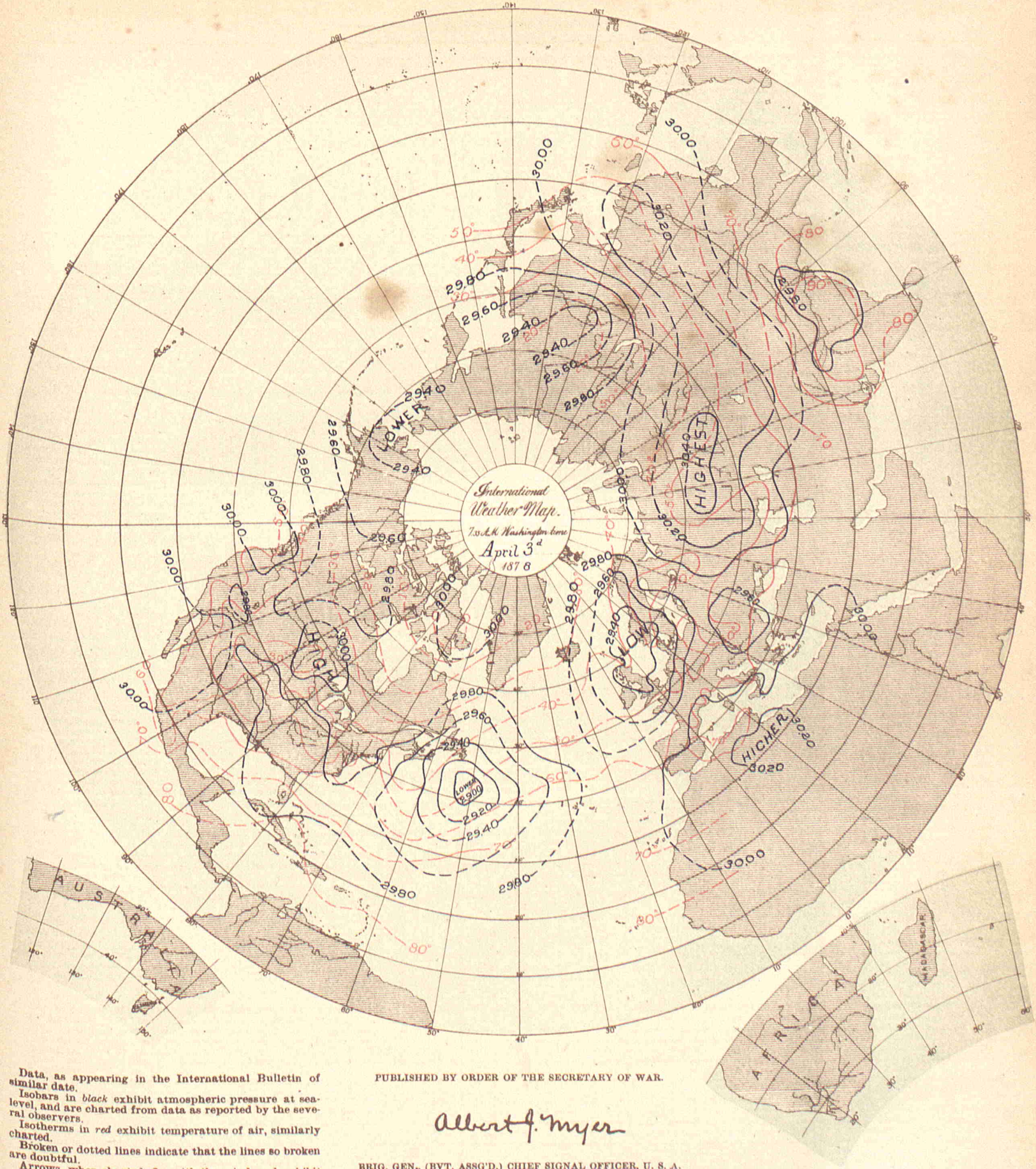
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E. Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.30 | 744.2 | 29.40 | 746.7 | 40.6 | 4.7 | ..... | E | 4 | 1.8 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | D. clouds..... | W. B swell. |
| Ardrossan | 29.33 | 745.0 | 29.34 | 745.2 | 46 | 7.8 | ..... | SW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.41 | 747.0 | 45.0 | 7.2 | ..... | W | 4 | 1.8 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds .... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.39 | 746.5 | 43.3 | 6.3 | ..... | NW | 6 | 2.7 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 29.46 | 748.3 | 40.9 | 4.9 | ..... | WNW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | J. L. E. Dreyer. |
| Bradford, Yorkshire | 29.00 | 736.6 | 29.40 | 746.7 | 40.1 | 4.5 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.04 | 1.0 | Overcast..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.92 | 760.0 | 29.95 | 760.7 | 82.5 | 28.1 | ..... | NE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.44 | 747.8 | 46.0 | 7.8 | ..... | SSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast ..... | H. Todd. [H.C. |
| Cardington | ..... | ..... | 29.44 | 747.8 | 46.0 | 7.8 | ..... | S | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | John McLaren. |
| Chatham, School M. E. | 29.36 | 745.7 | 29.50 | 749.3 | 41.2 | 5.1 | ..... | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.03 | 711.9 | 29.52 | 749.8 | 39.0 | 3.9 | ..... | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Rain and fog | Alexander Watt. |
| Donaghadee | 29.35 | 745.5 | 29.38 | 746.2 | 45 | 7.2 | ..... | W | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 29.48 | 748.8 | 29.50 | 749.3 | 41 | 5.0 | ..... | WSW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | Raining..... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.40 | 746.7 | 42.7 | 5.9 | ..... | SE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Thomas Mackereth. |
| Falmouth, Observatory | 29.30 | 744.2 | 29.53 | 750.0 | 47.8 | 8.8 | ..... | WSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | The Staff. |
| Fort Napier, (Natal) | 27.89 | 708.4 | 30.08 | 764.0 | 85.4 | 29.7 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.69 | 754.1 | 29.92 | 760.0 | 89 | 31.7 | ..... | W | ..... | ..... | 0 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's College | ..... | ..... | 29.42 | 747.3 | 45 | 7.2 | ..... | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Hailing..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.98 | 761.5 | 30.03 | 762.7 | 66.0 | 18.9 | ..... | E | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | Blue sky..... | Corpl. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.17 | 740.9 | 29.37 | 746.0 | 41.2 | 5.1 | ..... | WSW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | D. G. Maclean. |
| Great Yarmouth | 29.47 | 748.5 | 29.48 | 748.8 | 48 | 8.9 | ..... | SW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.30 | 744.2 | 29.48 | 748.8 | 43.1 | 6.2 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | The Staff, for G. B. Airy. |
| Guernsey | 29.30 | 744.2 | 29.52 | 749.8 | 52 | 11.1 | ..... | WSW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | Squally..... | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 29.53 | 750.0 | 47 | 8.3 | ..... | NW | ..... | ..... | 2 | ..... | 4n | ..... | ..... | 0.52 | 13.2 | Raining..... | M. P. Moyle. |
| Holyhead | 29.35 | 745.5 | 29.40 | 746.7 | 48 | 8.9 | ..... | WSW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | John Tilston. |
| Jersey | 29.28 | 743.7 | 29.57 | 751.1 | 51.0 | 10.6 | ..... | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | Blank | Blank | Squally..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 29.47 | 748.5 | 43.8 | 6.6 | ..... | SSW | 11 | 4.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | The Staff. |
| Kingstown | 29.40 | 746.7 | 29.42 | 747.3 | 43 | 6.1 | ..... | WNW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.42 | 747.3 | 46.0 | 7.8 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 30.08 | 764.0 | 30.16 | 766.1 | 63.0 | 17.2 | ..... | NW | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | Sgt. Fred. Travis, A. H. |
| Nairn | 29.28 | 743.7 | 29.38 | 746.2 | 46 | 7.8 | ..... | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | ..... | ..... | ¼ clouded.. | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 29.82 | 757.4 | 80.5 | 26.9 | ..... | S | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | C. S. Duncombe. |
| Nottingham, Observatory | 29.22 | 742.2 | 29.41 | 747.0 | 47.7 | 8.7 | ..... | SSW | ..... | ..... | 3 | ..... | 10k;d | ..... | W | 0.061 | 1.55 | Overcast..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 28.89 | 733.8 | 29.42 | 747.3 | 43.4 | 6.3 | ..... | SSW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.41 | 747.0 | 43 | 6.1 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Mr. Lucas. |
| Plymouth | 29.41 | 747.0 | 29.49 | 749.0 | 45.3 | 7.4 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling..... | John Merrifield. |
| Roche's Point | 29.43 | 747.5 | 29.48 | 748.8 | 47 | 8.3 | ..... | WNW | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | Showery..... | W. Kennedy. |
| Saint Ann's Head | 29.28 | 743.7 | 29.45 | 748.0 | 46 | 7.8 | ..... | W | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | John C. Walker. |
| Sandwick Manse, (Orkneys.) | ..... | ..... | 29.40 | 746.7 | 41 | 5.0 | ..... | NE | 8 | 3.6 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.78 | 756.4 | 61.0 | 16.1 | ..... | SW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Sergt. W. H. Lyne. |
| Sheffield | 29.12 | 739.6 | 29.41 | 747.0 | 48.0 | 8.9 | ..... | SSW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.11 | 2.8 | Overcast..... | W. F. Cooper. |
| Silloth Rectory | 29.34 | 745.2 | 29.37 | 746.0 | 49.6 | 9.8 | 67 | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | D. clouds..... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 28.99 | 736.3 | 29.40 | 746.7 | 42.0 | 5.6 | ..... | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 29.35 | 745.5 | 41 | 5.0 | ..... | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Sutherland. |
| Stratfield Turgiss | 29.27 | 743.4 | 29.48 | 748.8 | 43.4 | 6.3 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Rev. C. H. Griffith, F.M. |
| Thurso | ..... | ..... | 29.36 | 745.7 | 45 | 7.2 | ..... | NW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 29.54 | 750.3 | 48 | 8.9 | ..... | NW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 29.56 | 750.8 | 45.2 | 7.3 | ..... | NW | 15 | 6.7 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.62 | 752.3 | 65.0 | 18.3 | 86 | NW | ..... | ..... | 3 | ..... | 4k | ..... | ..... | 0 | 0 | Squally..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.78 | 756.4 | 29.97 | 761.2 | 79.8 | 26.6 | 75 | SE | 18.0 | 8.0 | ..... | 4 | 4 | ..... | SE | 1.27 | 32.2 | Squally..... | C. Meldrum. |
| Melbourne, Observatory | 30.11 | 764.8 | 30.20 | 767.1 | 68.9 | 14.9 | 71 | SW | 6 | 2.7 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Dull..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m.

| Marine Series. Vessels. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather | Observer |
|---|---|---|---|---|
| S. S. Algeria, N. 49° 55′ W. 27° 10′ | 10* | NNW | D. clouds..... | Capt. W. Watson. |
| S. S. Batavia | | | | Capt. J. E. Mouland. |
| Ship Camperdown | | | | Capt. A. T. Miller. |
| Brig Catherine | | | | Capt. Adam Smith. |
| Barque Celeste | | | | Capt. D. F. McKechnie |
| S. S. Hibernia | | | | Capt. W. R. Cato |
| Barque Maroon | | | | Capt. A. T. Brown. |
| Ship Mikado | | | | Capt. C. C. Prehn. |
| S. S. Peruvian, N. 42° 10′, W. 66° 30′ | | | | [R. |
| Royal Alice | 5 | WNW | D. clouds.... | Capt. W. H. Smith, R. N. |
| S. S. Seine | | | | Capt. E. M. Hughes. |
| Barque Sorata | | | | Capt. H. Manning. |
| Schooner Traveller | | | | Capt. Jas. J. Price. |
| S. S. Yorkshire, N. 46° 45′ W. 33° 40′ | 4 | ENE | Showery..... | Capt. H. Longley. |

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.18 | 665.0 | | | 66.6 | 19.2 | 90 | NE | | | 1 | p | 9cs;hz | | | 0 | 0 | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.51 | 749.6 | 29.56 | 750.8 | 45.0 | 7.2 | 72 | SW | | | 2 | | 7 | | | | | | |
| Fanöe | 29.47 | 748.6 | 29.49 | 749.1 | 44.2 | 6.2 | 84 | WSW | | | 4 | | 7 | | | | | | |
| Godthaab, (Greenland) | 29.89 | 759.2 | 29.93 | 760.3 | 26.1 | — 3.3 | 85 | S | | | 2 | | 10 | | | | | | |
| Stykkisholm, (Iceland) | 29.80 | 756.8 | 29.84 | 757.9 | 26.1 | — 3.3 | 96 | NE | | | 7 | | 8 | | | | | | |
| Thorshavn, (Faröe) | 29.40 | 746.7 | 29.43 | 747.6 | 39.9 | 4.4 | 59 | Calm | | | 0 | | 8 | | | | | | |
| Vestervig | 29.30 | 744.1 | 29.47 | 748.4 | 38.8 | 3.8 | 93 | SW | | | 4 | | 4 | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.20 | 741.6 | 29.75 | 755.6 | 46.4 | 8 | 87 | SW | | | 3 | | 8 | | SW | 0.12 | 3. | Very cloudy | Collignon, Director. |
| Amiens, Normal School | | | | | | | | | | | | | | | | | | | Ronvarne, Director. |
| Avignon, Normal School | 29.95 | 760.6 | 30.02 | 762.6 | 64.8 | 18.2 | 42 | NNW | | | 2 | | 0 | | | 0 | 0 | Very clear. | Mr. Giraud, Director |
| Bar-sur-Seine | 29.28 | 743.6 | 29.84 | 757.9 | 48.2 | 9.0 | 82 | S | | | 2 | | 10 | | SW | 0.083 | 2.1 | Light rain.. | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 48.2 | 9 | 85 | S | | | 2 | | 10 | | WSW | 0.020 | 0.5 | Covered | Normal School. |
| Besançon | 29.03 | 737.3 | 29.91 | 759.8 | 51.8 | 11 | 68 | S | | | 6 | | 5 | | SW | 0.71 | 18. | Cloudy | Normal School. |
| Bourg-en-Bresse | 29.13 | 740.0 | 30.04 | 763.1 | 54.5 | 12.5 | 52 | S | | | 4 | 5c | | SW | | 0.110 | 2.8 | Cloudy | Normal School. |
| Bourges, Normal School | 29.32 | 744.7 | 29.87 | 758.7 | 53.6 | 12 | 74 | SW | | | 6 | | 8 | | SW | 0.12 | 3. | Very cloudy | A. Wagner, Director. |
| Brest, Naval Observatory | 29.37 | 745.9 | 29.58 | 751.4 | 52.7 | 11.5 | 83 | SW | | | 5 | | 10 | | SW | 0.305 | 7.75 | Raining | The Staff. |
| Carcassonne, Normal Schoo | 29.54 | 750.3 | 29.98 | 761.6 | 63.3 | 17.4 | 56 | NW | | | 2 | | 0 | | | 0 | 0 | Clear | Vateau, Director. |
| Caen | 29.52 | 749.7 | 29.59 | 751.6 | 52.2 | 11.2 | 86 | SW | | | 4 | | 8 | | SW | 0.260 | 6.6 | Very cloudy | Normal School. |
| Chartres, Normal School | 29.09 | 738.8 | 29.65 | 753.1 | 52.0 | 11.1 | 95 | SW | | | 6 | | 10 | | SE | 0.12 | 3. | Covered | Lequin, Director. |
| Châlons-sur-Marne, N. Sch' | 29.45 | 748.0 | 29.77 | 756.2 | 45.1 | 7.3 | 85 | S | | | 4 | | 10kn | | S | 0 | 0 | Covered | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.59 | 726.1 | 29.95 | 760.6 | 51.6 | 10.9 | 30 | S | | | 2 | | 8 | | SW | 0.307 | 7.8 | Very cloudy | Alluard, Director. |
| Commercy, Normal School | 29.00 | 736.6 | 29.89 | 759.2 | 45.3 | 7.4 | 89 | WSW | | | 6 | | 8 | | WSW | 0 | 0 | Very cloudy | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.92 | 734.6 | 30.07 | 763.6 | 55.9 | 13.3 | 36 | NW | | | 2 | | 2 | | NW | 0 | 0 | ¾ covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. Schoo | 29.69 | 754.2 | 29.91 | 759.6 | 52.2 | 11.2 | 93 | SW | | | 4 | | 10 | | | 0.08 | 2. | Covered | Mouillot, Director. |
| Le Mans, Normal School | 29.43 | 747.4 | 29.73 | 755.2 | 51.6 | 10.9 | 82 | SW | | | 6 | | 8 | | SW | 0.04 | 1. | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.02 | 737.2 | 29.94 | 760.5 | 54.7 | 12.6 | 57 | SW | | | 2 | | 10 | | NE | 0.370 | 9.4 | Covered | Voudez, Director. |
| Lorient, Naval Observatory | 29.62 | 752.4 | 29.72 | 755.0 | 55.8 | 13.2 | 84 | SW | | | 5 | | 8 | | SW | 0.406 | 10.3 | ¾ covered | T. Carré, Director. |
| Mâcon, Normal School | 29.26 | 743.3 | 29.92 | 759.9 | 52.7 | 11.5 | 75 | SSE | | | 2 | | 5 | | E | 0.12 | 3. | Cloudy | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | 28.85 | 732.9 | 29.92 | 759.9 | 45.3 | 7.4 | 85 | SW | | | 4 | | 10 | | NE | 0.47 | 12. | Covered | Normal School. |
| Nismes, Normal School | 29.82 | 757.4 | 30.02 | 762.5 | 67.3 | 19.6 | 50 | N | | | 2 | | 2 | | N | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Orleans, Normal School | 29.37 | 746.0 | 29.75 | 755.7 | 53.6 | 12 | 85 | SW | | | 4 | | 8 | | S | 0 | 0 | Very cloudy | Bernard, Director. |
| Paris, Observatory | 29.46 | 748.3 | 29.70 | 754.4 | 51.1 | 10.6 | 88 | SW | | | 3 | | 10 | | | 0.014 | 0.36 | Rainy | National Observatory. |
| Privas | 28.97 | 735.8 | 30.05 | 763.2 | 50.0 | 10 | 38 | N | | | 2 | | 10 | | S | 0 | 0 | Covered | Normal School |
| Puy de Dome (Summit) | | | | | | | | | | | | | | | | | | | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.86 | 758 5 | 29.89 | 759.3 | 56.8 | 13.8 | 80 | SSW | | | 5 | | 10 | | SSW | 0.16 | 4. | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.54 | 750.2 | 29.62 | 752.4 | 51.3 | 10.7 | 82 | SSE | | | 3 | | 10 | | SW | 0.071 | 1 8 | Covered | F. Lucard, Director. |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | M. H. Hercouet. |
| Tarbes, Normal School | 28.92 | 734.6 | 29.99 | 761.8 | 60.8 | 16 | 59 | W | | | 1 | | 0 | | | 0 | 0 | Clear | T. Hugues, Director. |
| Villefranche | 29.23 | 742.4 | 29.94 | 760.4 | 55.2 | 12.9 | 81 | SE | | | 4 | | 8 | | SW | 0.126 | 3.2 | Very cloudy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.77 | 756.1 | 29.80 | 756.8 | 75.2 | 24 | | | | | | | | | | 0 | 0 | | L'Abbé Marchési. |
| Lyons | | | 29.83 | 757.6 | 57.6 | 14.2 | | | | | | | 3 | | | 0 | 0 | | M. Jeys. |
| Marseilles, Observatory | | | 30.02 | 762.4 | 59.9 | 15.5 | 49 | W | | | 3-4 | | 3 | | | 0 | 0 | Cloudy | The Staff. |
| Mont-Louis | 21.81 | 630.8 | 30.15 | 765.8 | 59.4 | 10.2 | 33 | SSW | 26.1 | 11.67 | | | 1 | | W | 0 | 0 | | Mr. Falgudre. |
| Nice | | | 29.93 | 760.1 | 61.5 | 16.4 | 53 | W | | | 1 | | 2 | | | 0 | 0 | Clear | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.41 | 747.1 | 29.69 | 754.1 | 51.4 | 10.8 | 86 | SW | | | 6 | | 10 | | SW | 0.161 | 4.1 | | Marié Davy, Director |
| Perpignan | | | 30.11 | 764.8 | 59.4 | 15.2 | 58 | SE | 13.0 | 5.83 | | | 0 | | | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.43 | 569.7 | | | 36.7 | 2.6 | | WNW | | | 6 | | 5 | | | 0 | 0 | Fair | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.54 | 750.4 | 29.71 | 754.6 | 50.4 | 10.2 | 89 | SW | | | 2 | | 10 | | SW | 0.189 | 4.8 | Covered | E. Renou. |
| Toulouse, Observatory | 29.30 | 744.1 | 30.02 | 762.5 | 58.3 | 14.6 | 56 | SSE | | | 2 | | 4 | | | 0 | 0 | | The Staff. |
| Tours | 29.57 | 751.0 | 29.76 | 756.0 | 54.0 | 12.2 | 76 | SW | | | 4 | | 10 | | SW | 0.091 | 2.3 | | C. Marquet. |
| Versailles, (near Paris) | | | 29.69 | 754.1 | 52.5 | 11.4 | 83 | SW | | | 3 | | 10 | | | 0.188 | 4.78 | Raining | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.34 | 770.6 | 30.36 | 771.2 | 43.2 | 6.2 | 96 | NE | 5.8 | 2.6 | | | 10 | | | 0.602 | 15.3 | Covered | Marc Dechevreus, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. | | Barometer. Reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. Direction. | Wind. Velocity. | | Wind. Force. | Clouds. Amount. | | Clouds. Direction. | | Rain-fall or melted snow in the past 24 hours. | | Weather. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inches. | Millimeters. | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0–10 | 0–10 | 0–10 | Upper From— | Lower From— | Inches. | Millimeters. | | |
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 29.61 | 752.0 | 29.78 | 756.4 | 48.4 | 9.1 | 72 | NW | | | 3 | | 9 | | | 0.071 | 1.8 | Raining | Prof. Arndt. |
| Breslau | 29.31 | 744.5 | 29.84 | 757.9 | 57.8 | 11.0 | 34 | W | | | 1 | | 6 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.44 | 747.8 | 29.87 | 758.7 | 50.7 | 10.4 | 51 | SW | | | 4 | | 10 | | | 0.374 | 9.5 | | Albert Senz. |
| Cassel | 29.18 | 741.2 | 29.78 | 756.5 | 50.7 | 10.4 | 47 | W | | | 6 | | 5 | SW | | 0.204 | 5.18 | | Dr. H. Möhl. |
| Crefeld | 29.52 | 749.8 | 29.68 | 753.9 | 50.0 | 10.0 | 54 | S | | | 7 | | 9 | | | 0 | 0 | | Director Lose. |
| Emden | 29.71 | 754.6 | 29.74 | 755.5 | 48.9 | 9.4 | 68 | W | | | 5 | | 1 | | | 0.197 | 5.0 | | Prof. Prestel. |
| Frankfort on the Main | 29.50 | 749.2 | 29.86 | 758.5 | 51.6 | 10.9 | 38 | SW | | | 4 | | 8 | | | 0.004 | 0.1 | | Physical Society. |
| Friedrichshafen | 28.54 | 724.8 | 29.98 | 761.6 | 48.2 | 9.0 | 64 | SW | | | 8 | | 5 | SW | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 29.57 | 751.1 | 29.64 | 752.9 | 42.8 | 6.0 | 85 | SW | | | 4 | | 10ks | | | 0.047 | 1.2 | Light rain | Captain F. Hegemann. |
| Kiel | 29.58 | 751.2 | 29.59 | 751.6 | 44.1 | 6.7 | 83 | WSW | | | 3 | | 10 | | | 0.541 | 13.74 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.72 | 754.9 | 29.80 | 757.0 | 53.4 | 11.9 | 33 | SW | | | 2 | | 2 | | | 0 | 0 | | Prof. E. Luther |
| Köslin | | | 29.69 | 754.2 | 50.7 | 10.4 | | SW | | | 4 | | 3 | | | 0.106 | 2.7 | | H. Müller. |
| Leipsic, Observatory | 29.41 | 747.1 | 29.84 | 757.9 | 48.6 | 9.2 | 47 | SW | | | 5 | | 8 | WSW | | Inap. | Inap. | Sprinkling | Prof. Bruhns. |
| Memel, Naval School | 29.76 | 755.8 | 29.80 | 757.0 | 46.4 | 8.0 | 55 | SSW | | | 1 | | 1k | | | | | Dust-haze | Reinbrecht von Skalweit. |
| Neufahrwasser | 29.76 | 755.9 | 29.78 | 756.3 | 53.6 | 12.0 | 40 | SSW | | | 3 | | 5 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.57 | 751.0 | 29.86 | 758.4 | 52.2 | 11.2 | 88 | WNW | | | 4 | | 3 | | | 0 | 0 | | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.35 | 745.5 | 29.90 | 759.5 | 51.4 | 10.8 | 51 | SW | | | 4 | | 9 | SW | | 0.102 | 2.60 | | Dr. Schur. |
| Stuttgart | 28.95 | 735.3 | 29.89 | 759.3 | 49.6 | 9.8 | 46 | W | | | 5 | | 8 | W | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | 29.19 | 741.5 | 29.71 | 754.6 | 46.9 | 8.3 | 68 | SW | | | 8 | | 10 | | | 0.467 | 11.84 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.40 | 721.4 | 29.91 | 759.6 | 46.6 | 8.1 | 50 | W | 7 | 3 | | | 6ck | W | W | 0.004 | 0.1 | | Dr. Von Bebber |
| Wustrow, Naval School | 29.41 | 752.1 | 29.65 | 753.1 | 44.8 | 7.1 | 71 | S | | | 4 | | 7 | | | 0 | 0 | | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.55 | 750.6 | 29.94 | 760.4 | 67.8 | 19.9 | | SW | | | 3.5 | | | | | | | Clear | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.83 | 757.6 | 29.88 | 758.9 | 78.6 | 25.9 | 69 | WSW | 22? | 9.8? | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.42 | 747.3 | 29.89 | 759.2 | 92.9 | 33.8 | 28 | Calm | | | | | 2 | S | | 0 | 0 | D. clouds | |
| Bombay | 29.79 | 756.6 | 29.83 | 757.6 | 83.0 | 28.3 | 71 | NW | 25 | 11.2 | | | 10 | SW | | 0 | 0 | Misty | |
| Poona | 27.83 | 706.8 | 29.82 | 757.3 | 81.2 | 27.3 | 56 | NNE | | | | | 10 | ENE | | 0 | 0 | D. clouds | |
| Lahore | 29.10 | 739.1 | 29.84 | 757.8 | 85 | 29.4 | 40 | N | 3.2 | 1.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.34 | 694.4 | 29.87 | 758.7 | 77.5 | 25.3 | 74 | W | 2 | 0.9 | | | 6 | W | | 0.12 | 3.0 | Thunder-storm | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.88 | 733.4 | 29.76 | 755.8 | 88.4 | 31.3 | 23 | NW | 1.5 | 0.7 | | | 2 | | | 0 | 0 | | |
| Agra | 29.25 | 743.0 | 29.80 | 757.0 | 93.6 | 34.2 | 21 | W | | | | | 2 | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.78 | 731.0 | 29.79 | 756.8 | 94.5 | 34.7 | 27 | Calm | 5.8 | 2.6 | | | 2 | | | 0 | 0 | Blue sky | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.42 | 747.3 | 29.79 | 756.6 | 89.2 | 31.8 | 47 | W | 1.8 | 0.8 | | | 10 | | | 0 | 0 | Overcast | |
| Allahabad | 29.46 | 748.3 | 29.76 | 755.9 | 96.7 | 35.9 | 28 | WNW | 5.1 | 2.3 | | | 10 | W | | 0 | 0 | Overcast | |
| Patna | 29.53 | 750.0 | 29.70 | 754.4 | 98.0 | 36.7 | 18 | W | 1.2 | 0.5 | | | 8 | SW | SW | 0 | 0 | D. clouds | |
| Hazaribagh | 27.79 | 705.8 | 29.75 | 755.7 | 89.6 | 32.0 | 19 | NW | 10.4 | 4.6 | | | 8 | | | 0 | 0 | | |
| Cuttack | 29.71 | 754.5 | 29.78 | 756.5 | 95.1 | 35.1 | 42 | S | 3.9 | 1.7 | | | 3 | | | 0 | 0 | D. clouds | |
| Calcutta (Alipore) | 29.72 | 755.0 | 29.74 | 755.5 | 91.0 | 32.8 | 39 | W | 5 | 2.2 | | | 5 | | SW | 0 | 0 | D. clouds | |
| Goalpara | 29.35 | 745.4 | 29.74 | 755.3 | 79.7 | 26.5 | 79 | Calm | 3.1 | 1.4 | | | 2 | | S | 1.55 | 39.4 | D. clouds | |
| Chittagong | 29.78 | 756.3 | 29.87 | 758.6 | 83.7 | 28.7 | 79 | S | 9.3 | 4.2 | | | 4 | | | 0 | 0 | D. clouds | |
| Sibsagar | 29.43 | 747.6 | 29.77 | 756.1 | 77.9 | 25.5 | 78 | Calm | 1.7 | 0.8 | | | 10 | W | W | 0.52 | 13.2 | Gloomy | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.39 | 721.1 | 29.72 | 755.0 | 91.0 | 32.8 | 24 | NE | 4.4 | 2.0 | | | 3 | SW | | 0 | 0 | D. clouds | |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.52 | 749.9 | 29.94 | 760.4 | 55.2 | 12.9 | 53 | SW | 2.5 | 1.1 | ..... | ..... | 3 | ..... | ..... | 0.118 | 3.0 | ..... | Prof. Giovanni Codig. |
| Padua | 29.82 | 757.5 | 29.93 | 760.3 | 53.8 | 12.1 | 58 | NNW | 2.5 | 1.1 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzoni |
| Vicenza | 29.73 | 755.1 | 29.92 | 760.0 | 54.9 | 12.7 | 51 | S | 3.1 | 1.4 | ..... | ..... | 2 | W | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.62 | 727.0 | 29.95 | 760.6 | 56.8 | 13.8 | 53 | SSW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.42 | 747.3 | 29.95 | 760 7 | 54.1 | 12.3 | ..... | W | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.04 | 737.5 | 29.95 | 760.7 | 56.5 | 13.6 | 18 | ESE | 1.8 | 0.8 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 28.02 | 711.6 | 29.94 | 760.5 | 52.7 | 11.5 | 23 | NNW | ..... | ..... | 2 | ..... | 2 | NW | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.75 | 755.7 | 29.98 | 761.4 | 59.2 | 15 1 | 49 | SE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.78 | 756.5 | 29.95 | 760.8 | 60.8 | 16.0 | 43 | SW | 5.6 | 2.5 | ..... | ..... | 2 | S | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.66 | 753.4 | 29.98 | 761.5 | 58.6 | 14.8 | 45 | WNW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.68 | 753.8 | 29.93 | 760.3 | 61.7 | 16.5 | 42 | SW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0.157 | 4.0 | ..... | Cav. F Meucci. |
| Leghorn | 29.86 | 758.4 | 29.95 | 760.6 | 58.3 | 14.6 | 65 | W | 8.1 | 3.6 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 29.02 | 759.9 | 29.97 | 761.2 | 50.2 | 10.1 | ..... | NW | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.41 | 721.5 | 29.97 | 761.2 | 51.8 | 11.0 | 69 | NE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.87 | 758.8 | 29.98 | 761.6 | 60.8 | 16.0 | 54 | ENE | ..... | ..... | 4 | ..... | 3 | NW | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.80 | 757.0 | 29.98 | 761.5 | 63.7 | 17.6 | 44 | WNW | 7.4 | 3.3 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U. | 29.80 | 756.9 | 30.00 | 762.0 | 61.5 | 16.4 | 60 | WNW | ..... | ..... | 4 | ..... | 5 | W | ..... | 0.051 | 1.3 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 57.9 | 14.4 | 53 | SSW | 9.4 | 4.2 | ..... | ..... | 9 | W | ..... | 0.043 | 1.1 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.84 | 758.0 | 30.03 | 762.8 | 64.9 | 18.3 | 42 | NW | ..... | ..... | 4 | ..... | 2 | NW | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.17 | 741.0 | 30.06 | 763.5 | 57.0 | 13.9 | 74 | SW | 6.3 | 2.8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.77 | 756.1 | 30.02 | 762.5 | 64.2 | 17.9 | 42 | WSW | 11.2 | 5.0 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.90 | 759.5 | 29.98 | 761.4 | 66.6 | 19.2 | 48 | NW | ..... | ..... | 4 | ..... | 7 | W | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.46 | 748.3 | 30.02 | 762.4 | 57.2 | 14.0 | 70 | WSW | 13.0 | 5.8 | ..... | ..... | 6 | W | ..... | 0.067 | 1.7 | ..... | Prof. F. Brioschi |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
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| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 29.81 | 757.9 | 29.91 | 759.7 | 55.9 | 13.3 | 96 | W | 4.0 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| Tokei (Yeddo) University | 29.79 | 756.7 | 29.89 | 759.3 | 57 | 13.9 | 92 | NW | 3.5 | 1.6 | ..... | ..... | 1ks | ..... | ..... | 0.24 | 6.1 | Fair | Prof. P. V. Veeder. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 68.0 | 20.0 | 66 | N | 0.9 | 0.4 | ..... | 8ck | 0 | N | ..... | 0 | 0 | Cloudy | L. Castillo, A. E. |
| Guadalajara | 24.96 | 634.1 | 30.03 | 762.8 | 41 9 | 5.5 | 58 | SW | 0.9 | 0.4 | ..... | 0 | 2 | ..... | SW | 0 | 0 | Clear | Prof. L. Perez. |
| Guanajuato | 23.62 | 600.1 | 29.84 | 758 0 | 59.9 | 15.5 | 71 | W | ..... | ..... | ..... | 0 | 2 | ..... | ..... | 0 | 0 | Clear | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 59.0 | 15.0 | 55 | NW | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. M. Leal. |
| Mexico | 22.97 | 583.5 | 29.42 | 747.2 | 59.4 | 15.2 | 57 | SE | 11.2 | 5.0 | ..... | 1c | 6k | W | W | 0 | 0 | Windy | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 50.5 | 10.3 | 37 | N | 1.8 | 0.8 | ..... | 1c | 0 | SW | ..... | 0 | 0 | Clear | M. Y. de Leon, M. E. |
| Puebla | 23.23 | 590.0 | 29.88 | 758.9 | 56.7 | 13.7 | 66 | SE | 5.8 | 2.6 | ..... | 5c | 5kn | SW | ..... | 0 | 0 | Covered | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 29.86 | 758.5 | 29.87 | 758.8 | 70.7 | 21.5 | 90 | N | 15.1 | 6.9 | ..... | 0 | 10n | ..... | N | 0.13 | 3.3 | Threatening | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 29.88 | 758.9 | 29.91 | 759.6 | 74.3 | 23.5 | 73 | N | 20.6 | 9.2 | ..... | 0 | 1sk | ..... | ..... | Inap. | Inap | Threatening | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 60.6 | 10.0 | 49 | S | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.25 | 590 9 | 30.04 | 762.9 | 56.3 | 13.5 | 47 | S | 2.2 | 1.0 | ..... | 2cs | 6sk | NW | W | 0 | 0 | Cloudy | P. Spina. [M. M. D. D. |
| Morelia | 23.92 | 607.5 | ..... | ..... | 64.4 | 18.0 | 52 | SW | 1.8 | 0.8 | ..... | 0 | 2 | ..... | SW | 0 | 0 | Slightly hazy | M. Tena. F. L. Param. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Y. de Leon, C. E. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,635 m., or 8,641.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.61 | 752.1 | 29.61 | 752.1 | 45.0 | 7.2 | ..... | SSW | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 29.54 | 751.2 | 29.59 | 751.6 | 47.1 | 8.4 | ..... | SW | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0.059 | 1.5 | ..... | |
| Helder | 29.56 | 750.9 | 29.56 | 750.9 | 46.2 | 7.9 | ..... | SSW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.272 | 6.9 | ..... | |
| Hellevoetsluis | 29.59 | 751.5 | 29.59 | 751 5 | 46.2 | 7.9 | 89 | SSW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.58 | 751.3 | 29.63 | 752.5 | 49.8 | 9.9 | 61 | SSW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0.185 | 4.7 | Very cloudy | H. v d Brink. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give th humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.27 | 743.4 | 29.32 | 744.8 | 47.6 | 8.8 | 50 | WSW | 12.1 | 5.4 | ..... | ..... | 1 | ..... | ..... | 0.016 | 0.4 | ..... | |
| Bröno | 29.35 | 745.4 | 29.39 | 746.4 | 42.1 | 5.6 | 49 | SSE | 20 | 13 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.21 | 741.8 | 29.35 | 745.6 | 37.9 | 3.3 | 88 | SSE | 11 | 5 | ..... | ..... | 10 | ..... | ..... | 0.035 | 0.9 | Raining | |
| Tromsö | 29.49 | 749.0 | 29.53 | 750.1 | 40.3 | 4.6 | 50 | S | 11 | 5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.63 | 752.6 | 29.82 | 757.5 | 62.1 | 16.7 | 90 | W | 5.6 | 2.5 | ..... | ..... | 3 | ..... | ..... | 0.197 | 5.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.02 | 737.1 | 30.04 | 763.1 | 62.6 | 17.0 | 56 | SE | 3.8 | 1.7 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 29.85 | 758.2 | 29.94 | 760.4 | 66.0 | 18.9 | 82 | SW | 6.9 | 3.1 | ..... | ..... | 9 | ..... | ..... | 0.020 | 0.5 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.66 | 753.4 | 30.02 | 762.5 | 60.3 | 15.7 | 68 | SE | 7.4 | 3.3 | ..... | ..... | 10 | SW | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 29.78 | 756.5 | 29.85 | 758.3 | 63.7 | 17.6 | 82 | WSW | 6.3 | 2.8 | ..... | ..... | 4 | ..... | ..... | 0.512 | 13.0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.75 | 755.7 | 29.76 | 755.9 | 84.2 | 29.0 | ..... | S | ..... | ..... | 5 | ..... | 4 | ..... | S | 1 | ..... | Blue sky | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Rio Douro, S. 25° 58', E. 32° 37' | ..... | ..... | 30.25 | 768.4 | 80.6 | 27.0 | ..... | SE | ..... | ..... | 3 | ..... | 2 | ..... | SE | 1 | ..... | D. clouds | J. T. d'Oliveria, Com'd't. |
| Sado, Porto Praya, Cape Verde Islands | 30.00* | 762.0* | 30.01* | 762.3* | 81.5 | 27.5 | ..... | NE | ..... | ..... | 6 | ..... | 6 | ..... | NE | 3 | NE | D. clouds | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.71 | 754.5 | 29.71 | 754.7 | ..... | ..... | ..... | W | ..... | ..... | 3 | ..... | 3 | ..... | NW | 1 | ..... | Blue sky | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreira,dos Ainas,Com' |

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.39 | 746.4 | 29.81 | 757.2 | 49.3 | 9.6 | 44 | N | 4 | 2 | ..... | ..... | 7k | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.40 | 746.8 | 29.83 | 757.6 | 43.2 | 6.2 | 87 | Calm | 0 | 0 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 29.61 | 752.0 | 29.85 | 758.3 | 41.7 | 5.4 | 85 | NNW | 4 | 2 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.86 | 758.5 | 29.88 | 758.9 | 37.2 | 2.9 | 96 | ESE | 13 | 6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Light fog | Central Physical Obs. |
| Kuopio | 29.49 | 749.1 | 29.82 | 757.5 | 37.8 | 3.2 | 100 | SE | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Ch. Forsten. |
| Kieff | 29.10 | 739.2 | 29.73 | 755.1 | 55.4 | 13.0 | 59 | SE | 9 | 4 | ..... | ..... | 7k;ks;c | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.72 | 755.0 | 29.80 | 756.8 | 58.3 | 14.6 | 39 | S | 13 | 6 | ..... | ..... | 6c | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.91 | 759.7 | 29.93 | 760.2 | 54.5 | 12.5 | 87 | S | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.56 | 750.9 | 30.13 | 765.2 | 39.9 | 4.4 | 68 | S | 9 | 4 | ..... | ..... | 7ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.69 | 754.1 | 29.89 | 759.3 | 52.0 | 11.1 | 67 | ESE | 9 | 4 | ..... | ..... | 6c | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 30.11 | 764.7 | 30.13 | 765.2 | 49.1 | 9.5 | 44 | SE | 9 | 4 | ..... | ..... | 7ks | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.49 | 723.7 | 29.88 | 759.0 | 64.9 | 18.3 | 50 | SE | 4 | 2 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.23 | 767.7 | 30.14 | 765.6 | 45.3 | 7.4 | 72 | ESE | 7 | 3 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Krotkowo* | 29.84 | 757.8 | 30.31 | 769.9 | 48.6 | 9.2 | 59 | ESE | 13 | 6 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 30.10 | 764.6 | 30.38 | 771.6 | 50.0 | 10.0 | 54 | NE | 7 | 3 | ..... | ..... | 7ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 29.53 | 750.0 | 30.48 | 774.3 | 54.1 | 12.3 | 23 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.74 | 755.3 | 29.97 | 761.3 | 51.4 | 10.8 | 89 | NE | 13 | 6 | ..... | ..... | 9k | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.50 | 724.0 | 30.19 | 766.8 | 62.4 | 16.9 | 40 | NE | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.85 | 758.1 | 30.39 | 772.0 | 34.7 | 1.5 | 66 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.70 | 754.4 | 30.04 | 762.9 | 33.3 | 0.7 | 91 | WSW | 11 | 5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 30.08 | 763.9 | 30.22 | 767.5 | 43.3 | 6.3 | 17 | NW | 16 | 7 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.25 | 692.2 | 29.39 | 746.6 | 18.0 | — 7.8 | 81 | NW | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.85 | 758.2 | 29.95 | 760.7 | 32.2 | 0.1 | 55 | W | 2 | 1 | ..... | ..... | 3c | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 23.5 | — 4.7 | 100 | ESE | 22 | 10 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47', E. 48° 34'.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.95 | 760.7 | 30.06 | 763.4 | 58.5 | 14.7 | 66 | ESE | 3.2 | 1.44 | ..... | 0 | 2k | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.91 | 759.8 | 29.97 | 761.2 | 69.8 | 21.0 | 62 | SW | 3.0 | 1.36 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | Almost cov. | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.03 | 686.5 | ..... | ..... | 56.1 | 13.4 | 82 | S | 9.9 | 4.41 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Light clouds | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.80 | 706.0 | 29.99 | 761.8 | 63.5 | 17.5 | 56 | S | 8.2 | 3.67 | ..... | 3 | 2 | WSW | ..... | 0 | 0 | ..... | The Staff. |
| Murcia, Met. Obs'y | 29.89 | 759.3 | 30.04 | 763.0 | 76.1 | 24.5 | 40 | SSE | 3.3 | 1.47 | ..... | 4 | 3 | E | ..... | 0 | 0 | Light clouds | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.04 | 737.5 | 29.94 | 760.4 | 52.5 | 11.4 | 88 | SSW | 18.6 | 8.33 | ..... | ..... | 10 | ..... | ..... | 0.098 | 2.5 | Covered | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.70 | 754.4 | 29.77 | 756.1 | 78.0 | 25.6 | 79 | S | 11.9 | 5.3 | ..... | 2ck | 1k | W | ..... | 0.047 | 1.2 | Fair | Benito Vines, S. J. |
| San Fernando, Naval Obs'y | 29.93 | 760.2 | 30.03 | 762 7 | 68.5 | 20.3 | 56 | SW | 4.9 | 2.2 | ..... | 0 | 10 | ..... | ..... | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W.I. | 29.83 | 757.6 | 29.92 | 759.9 | 78.4 | 25.8 | 87 | SE | ..... | ..... | ..... | 6kn | 2kn | SE | SE | 0 | 0 | Cloudy | Leonardo de Tejeda, Chief of Engineers. |

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.80 | 756.8 | 29.84 | 757.8 | 39.6 | 4.2 | ..... | SE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0.197 | 5.0 | ..... | |
| Umea | 29.73 | 755.1 | 29.78 | 756.4 | 35.2 | 1.8 | 93 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.315 | 8.0 | ..... | |
| Hernosand | 29.69 | 754.6 | 29.64 | 752 8 | 34.2 | 1.2 | 92 | ESE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.201 | 5.1 | ..... | |
| Stockholm | 29.42 | 747.3 | 29.60 | 751.8 | 44.6 | 7.0 | 57 | S | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.58 | 751.4 | 29.64 | 752.9 | 48.9 | 9.4 | 51 | SSW | ..... | ..... | 7 | ..... | 0 | ..... | ..... | 0.075 | 1.9 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.50 | 749.3 | 29.58 | 751.2 | 45.5 | 7.5 | 52 | S | 23.9 | 10.7 | ..... | ..... | 10 | ..... | SSW | 0.016 | 0.40 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.56 | 725.5 | 29.99 | 761.8 | 53.2 | 11.8 | 36 | SSW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0.122 | 3.1 | Clear | The Observatory. |
| Zurich | 28.33 | 719.6 | 29.99 | 761.8 | 47.1 | 8.4 | 58 | W | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0 | 0 | Bright | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +1.3 mm.; Thermometer, +1.6 cent.; Relative Humidity, —12 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.84 | 757.9 | 63.5 | 17.5 | 47 | SW | 9 | 4.0 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanides. |
| Valona | ..... | ..... | 29.95 | 760.7 | 62.2 | 16.8 | ..... | S | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | A. Bertrand. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.92 | 760.0 | 30.03 | 762.8 | 68.0 | 20.0 | 59 | SSW | ..... | ..... | 3 | ..... | 8s | ..... | SW | 0 | 0 | D. clouds | Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.69 | 754.1 | 29.76 | 755.9 | 36.3 | 2.4 | 72 | NE | 9 | 4.0 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Cloudy | Hon. J. Ferguson. |
| Brockville, Ontario | 29.59 | 751.6 | 29.90 | 759.4 | 39 | 3.9 | ..... | NW | 1 | 0.4 | ..... | 5c | 2s | N | NW | 0 | 0 | Cloudy | W. R. Bigg. |
| *Chatham, N B | 29.65 | 753.1 | 29.71 | 754.6 | 35 | 1.7 | 87 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | N | 0.01 | 0.3 | Cloudy | G. A. Blair. |
| Charlottetown, P. E. Island. | 29.38 | 746.2 | 29.43 | 747.5 | 34 | 1.1 | 96 | N | 14 | 6.3 | ..... | ..... | 10n | ..... | Calm | 0.360 | 9.14 | Light snow | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.66 | 753.4 | 29.85 | 758.2 | 40 3 | 4.6 | 89 | E | ..... | ..... | 1 | ..... | 8s | ..... | ..... | 0.052 | 1.32 | Clearing | James Smith, M. A. |
| Dalhousie, N. B | 29.68 | 753.9 | 29.82 | 757.4 | 38.2 | 3.4 | 74 | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | Clearing | H. A. Johnson. |
| Esquimault, B. C | 30.00 | 762.0 | 30.04 | 763.0 | 49.3 | 9.6 | 100 | N | ..... | ..... | ..... | 2cs | 0 | ..... | ..... | 0 | 0 | Clear | W. H. Bevis. |
| *Father Point, Quebec | 29.87 | 758.7 | 29.89 | 759.2 | 33 | 0.6 | 85 | NE | 12 | 5.4 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | J. McWilliams. |
| Fredericton, N. B | 29.68 | 753.9 | 29.75 | 755.6 | 39.1 | 3.9 | 68 | NW | 5 | 2.2 | ..... | ..... | 10s | ..... | ..... | 0.01 | 0.3 | Cloudy | Prof. Harrison. |
| *Fort Garry Manitoba | 29.25 | 742.9 | 30.10 | 764.5 | 38 | 3.3 | 86 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.76 | 730.5 | 29.88 | 758.9 | 37 | 2.8 | 81 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Grant. |
| *Halifax, N. S | 29.32 | 744.7 | 29.45 | 748.0 | 35 | 1.7 | 84 | N | 27 | 12.1 | ..... | ..... | 10n | ..... | N | Inap. | Inap. | Cloudy | F. Allison, M. A. |
| Hamilton, Ontario | 29.52 | 749.8 | 29.89 | 759.2 | 40.7 | 4.8 | 68 | NE | ..... | ..... | 1 | 0 | ..... | ..... | ..... | 0 | 0 | Clear | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.25 | 742.9 | 29.28 | 743.7 | 40 | 4.4 | 100 | SE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.43 | 10.9 | Raining | E. Weedon. |
| *Kingston, Ontario | 29.52 | 749.8 | 29.86 | 758.4 | 41 | 5.0 | 74 | NE | 7 | 3.1 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.29 | 744.0 | 29.33 | 745.0 | 32.5 | 0.3 | ..... | NE | 8 | 3.6 | ..... | ..... | 10n | ..... | ..... | 0.93 | 23.6 | Misty | C. H. Rigby. |
| *Montreal, Quebec | 29.68 | 753.9 | 29.88 | 758.9 | 36 | 2.2 | 85 | NE | 6 | 2.7 | ..... | 0 | 2s | ..... | ..... | 0 | 0 | Clear | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.21 | 741.9 | 29.91 | 759.7 | 38 | 3.3 | 45 | NE | 8 | 3.6 | ..... | 2cs | 0 | NE | ..... | 0 | 0 | Fair | Rev. R. Mosley. |
| Peterboro, Ontario | 29.12 | 739.6 | 29.88 | 758.9 | 41.7 | 5.4 | 49 | W | ..... | ..... | ..... | 0 | 2ks | ..... | ..... | 0 | 0 | Bright | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.17 | 740.9 | 29.88 | 758.9 | 38 | 3.3 | 81 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | H. Morgan. |
| Port Hastings, N. S | 29.20 | 744.0 | 29.34 | 745.2 | 32.6 | 0.3 | ..... | NW | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Foggy | Peter Grant. |
| Port Stanley, Ontario | 29.24 | 742.7 | 29.90 | 759.4 | 34 | 1.1 | 86 | N | 6 | 2.7 | ..... | 2k | 0 | ..... | ..... | 0 | 0 | Clear | M. Payne. |
| *Quebec, Quebec | 29.57 | 751.1 | 29.91 | 759.7 | 33 | 0.6 | 89 | E | ..... | ..... | 1 | ..... | 10n | ..... | Calm | 0 | 0 | Cloudy | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.47 | 748.5 | 29.94 | 760.5 | 35 | 1.7 | 60 | W | 6 | 2.7 | ..... | 5c | 0 | SE | ..... | 0 | 0 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 29.04 | 752.8 | 29.69 | 754.1 | 38 | 3.3 | 66 | N | 5 | 2.2 | ..... | 2k | 5s | NE | ..... | 0 | 0 | Cloudy | Dr. Gove. |
| St. John, N. B | 29.50 | 749.3 | 29 67 | 753.6 | 34 | 1.1 | 100 | NW | 13 | 5.8 | ..... | ..... | 10n | ..... | ..... | 0.050 | 1.27 | Cloudy | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.17 | 740.9 | 29.91 | 759.7 | 33 | 0.6 | 85 | Calm | 0 | 0 | ..... | 2cs | 0 | ..... | ..... | 0 | 0 | Clear | K. Stewart. |
| Stayner, Ontario | 29.11 | 739.4 | 29.91 | 759.7 | 40 | 4.4 | 66 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | R. J. Cole. |
| Stratford, Ontario | 28.58 | 725.9 | 29.90 | 759.4 | 32.8 | 0.4 | 87 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.31 | 744.5 | 29.34 | 745.2 | 34 | 1.1 | 98 | N | 9 | 4.0 | ..... | ..... | 10n | ..... | ..... | 1.37 | 34.8 | Cloudy | T. C. Hill. |
| *Toronto, Ontario | 29.50 | 749.3 | 29.89 | 759.2 | 41 | 5.0 | 62 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Magnetic Observatory. |
| Windsor, N. S | 29.42 | 747.3 | 29.52 | 749.8 | 33.6 | 0.8 | 89 | NW | 20 | 8.9 | ..... | 10k | 0 | ..... | ..... | 0 | 0 | Fair | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 33.0 | 0.6 | 100 | NE | ..... | ..... | ..... | 5 | 5n | ..... | ..... | 0.46 | 11.7 | Foggy | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.58 | 751.3 | 29.81 | 757.2 | 43 | 6.1 | 75 | N | 2 | 0.9 | ..... | 1c | Sm'e | Calm | ..... | 0.01 | 0.3 | Clear. | |
| Alpena, Michigan | 29.24 | 742.7 | 29.90 | 759.4 | 38 | 3.3 | 63 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Atlantic City, New Jersey | 29.82 | 757.4 | 29.84 | 757.9 | 47 | 8.3 | 85 | NE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Augusta, Georgia | 29.52 | 749.8 | 29.70 | 754.4 | 56 | 13.3 | 87 | E | 6 | 2.7 | ..... | ..... | 10n | ..... | SE | 0.20 | 5.1 | Light rain. | |
| Baltimore, Maryland | 29.81 | 757.2 | 29.86 | 758.4 | 52 | 11.1 | 47 | N | 6 | 2.7 | ..... | 5cs | 0 | W | ..... | 0 | 0 | Fair | |
| Barnegat, New Jersey | 29.83 | 757.7 | 29.85 | 758.2 | 45 | 7.2 | 75 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | |
| Bismarck, Dakota | 28.24 | 717.3 | 30.09 | 764.3 | 32 | 0.0 | 79 | E | 2 | 0.9 | ..... | Haze | Sm'e | ..... | ..... | 0 | 0 | Clear. | |
| Boise City, Idaho | 27.11 | 688.6 | 29.99 | 761.7 | 45 | 7.2 | 76 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Smoky | |
| Boston, Massachusetts | 29.63 | 752.6 | 29.78 | 756.4 | 44 | 6.7 | 52 | NW | 8 | 3.6 | ..... | 1cs | 0 | ..... | ..... | 0 | 0 | Clear | |
| Brackettville, Texas | 28.82 | 732.0 | 29.85 | 758.2 | 55 | 12.8 | 45 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 29.03 | 737.3 | 30.06 | 763.5 | 27 | — 2.8 | 94 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Brownsville, Texas | 29.88 | 758.9 | 29.95 | 760.7 | 60 | 15.6 | 70 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Buffalo, New York | 29.13 | 739.9 | 29.83 | 757.7 | 40 | 4.4 | 82 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 62 | 16.7 | 41 | Calm | ..... | ..... | 0 | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Burlington, Vermont | 29.59 | 751.6 | 29.85 | 758.2 | 40 | 4.4 | 73 | N | 6 | 2.7 | ..... | 2k | 5s | N | N | 0 | 0 | Cloudy | |
| Cairo, Illinois | 29.27 | 743.4 | 29.65 | 753.1 | 54 | 12.2 | 49 | E | 12 | 5.4 | ..... | 5c | 5s | Calm | Calm | 0 | 0 | Cloudy | |
| Camp Grant, Arizona | 25 23 | 640.8 | 30.03 | 762.7 | 44 | 6.7 | 23 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | 26.78 | 680.2 | 30.27 | 768.8 | 43 | 6.1 | 67 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.34 | 694.4 | 29.91 | 759.7 | 33 | 0.6 | 79 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 29.85 | 758.2 | 29.86 | 758.4 | 54 | 12.2 | 87 | NE | 6 | 2.7 | ..... | 2c | 2s | SW | Calm | 0 | 0 | Fair | |
| Cape Henry, Virginia | 29.82 | 757.4 | 29.84 | 757.9 | 55 | 12.8 | 68 | SW | 2 | 0.9 | ..... | 5cs | Haze | SW | ..... | 0 | 0 | Fair | |
| Cape Lookout, N. Carolina | 29.82 | 757.4 | 29.84 | 757.9 | 62 | 16.7 | 51 | E | 20 | 8.9 | ..... | 8cs | 0 | W | ..... | 0 | 0 | Cloudy | |
| Cape May, New Jersey | 29.83 | 757.7 | 29.86 | 758.4 | 47 | 8.3 | 85 | E | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 29.70 | 754.4 | 29.76 | 755.9 | 60 | 15.6 | 94 | E | 14 | 6.3 | ..... | ..... | 10n | ..... | E | 0.60 | 15.2 | Light rain | |
| Cheyenne, Wyoming | 24.05 | 610.9 | 29.99 | 761.7 | 30 | — 1.1 | 78 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.13 | 739.9 | 29.82 | 757.4 | 42 | 5.6 | 83 | NE | 6 | 2.7 | ..... | 2cs | Haze | Calm | ..... | 0 | 0 | Fair | |
| Cincinnati, Ohio | 29.10 | 739.1 | 29.74 | 755.4 | 56 | 10.0 | 58 | NE | 1 | 0.4 | ..... | 10cs;k | Fog | W | Calm | 0 | 0 | Cloudy | |
| Cleveland, Ohio | 29.14 | 740.1 | 29.88 | 758.9 | 40 | 4.4 | 65 | SE | 4 | 1.8 | ..... | 8cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Concho, Texas | 28.13 | 714.5 | 29.85 | 758.2 | 40 | 4.4 | 91 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.44 | 747.8 | 29.92 | 760.0 | 43 | 6.1 | 67 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Davenport, Iowa | 29.21 | 741.9 | 29.86 | 758.4 | 41 | 5.0 | 65 | NE | 6 | 2.7 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Deadwood, Dakota | 25.45 | 646.4 | ..... | ..... | 31 | — 0.6 | 79 | S | 1 | 0.4 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Denison, Texas | 29.06 | 738.1 | 29.86 | 758.4 | 46 | 7.8 | 69 | NW | 14 | 6.3 | ..... | 0 | 8ks | ..... | NW | 0.01 | 0.3 | Fair | |
| Denver, Colorado | 24.82 | 630.4 | 30.04 | 763.0 | 40 | 4.4 | 48 | NW | 3 | 1.3 | ..... | 8cs | 0 | N | ..... | 0 | 0 | Fair | |
| Detroit, Michigan | 29.16 | 740.7 | 29.84 | 757.9 | 42 | 5.6 | 74 | NE | 6 | 2.7 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Dodge City, Kansas | 27.36 | 694.9 | 29.70 | 754.4 | 38 | 3.3 | 91 | N | 4 | 1.8 | ..... | ..... | 10ks | ..... | N | 0.08 | 2.0 | Cloudy | |
| Dubuque, Iowa | 29.16 | 740.7 | 29.87 | 758.7 | 38 | 3.3 | 63 | N | 3 | 1.3 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Duluth, Minnesota | 29.37 | 746.0 | 30.06 | 763.5 | 38 | 3.3 | 63 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eagle Pass, Texas | 29.10 | 739.1 | 29.85 | 758.2 | 48 | 8.9 | 85 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 29.61 | 752.1 | 29.68 | 753.9 | 38 | 3.3 | 63 | N | 16 | 7.2 | ..... | ..... | 10s | ..... | N | Inap | Inap. | Cloudy | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 59 | 15.0 | 44 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.13 | 739.9 | 29.85 | 758.2 | 43 | 6.1 | 75 | S | 4 | 1.8 | ..... | 2c | Fog | ..... | ..... | 0 | 0 | Fair | |
| Escanaba, Michigan | 29.29 | 744.0 | 29.96 | 761.0 | 36 | 2.2 | 70 | N | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Florence, Arizona | 28.28 | 718.3 | 29.88 | 758.9 | 56 | 13.3 | 57 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | 24.10 | 612.1 | 30.10 | 764.5 | 38 | 3.3 | 55 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.45 | 646.4 | ..... | ..... | 38 | 3.3 | 63 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | ..... | ..... | ..... | ..... | 48 | 8.9 | 64 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.22 | 742.2 | 29.76 | 755.9 | 42 | 5.6 | 91 | NW | 20 | 8.9 | ..... | ..... | 10n | ..... | NW | 0.01 | 0.3 | Clear | |
| Fort Griffin, Texas | 28.68 | 728.5 | 29.97 | 761.2 | 43 | 6.1 | 59 | NW | 4 | 1.8 | ..... | 8ck | 0 | Calm | ..... | 0.37 | 9.4 | Light rain | |
| Fort St. Michael, Alaska | 29.27 | 743.4 | 29.30 | 744.2 | 17 | — 8.3 | 100 | E | 14 | 6.3 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Fort Sill, Indian Territory | 28.71 | 729.2 | 29.84 | 757.9 | 44 | 6.7 | 67 | NW | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Cloudy | |
| Galveston, Texas | 29.80 | 756.9 | 29.84 | 757.9 | 58 | 14.4 | 76 | NW | 18 | 8.0 | ..... | 2c | 0 | W | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.20 | 741.7 | 29.85 | 758.2 | 40 | 4.4 | 73 | SE | 7 | 3.1 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Indianapolis, Indiana | 28.98 | 736.1 | 29.75 | 755.6 | 45 | 7.2 | 68 | N | 5 | 2.2 | ..... | 5cs;ck | 0 | Calm | ..... | 0 | 0 | Fair | |
| Indianola, Texas | 29.89 | 759.2 | 29.92 | 760.0 | 61 | 16.1 | 61 | N | 22 | 9.8 | ..... | 8cs | 0 | W | ..... | 0 | 0 | Fair | |
| Jacksboro, Texas | 28.80 | 731.5 | 29.95 | 760.7 | 42 | 5.6 | 66 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 29.63 | 752.6 | 29.66 | 753.4 | 65 | 18.3 | 94 | SE | 14 | 6.3 | ..... | ..... | 10n | ..... | SE | 1.12 | 28.4 | Light rain | |
| Keokuk, Iowa | 29.17 | 740.9 | 29.78 | 756.4 | 44 | 6.7 | 68 | NE | 4 | 1.8 | ..... | Haze | 4s | Calm | Calm | 0 | 0 | Fair | |
| Key West, Florida | 29.70 | 754.4 | 29.73 | 755.1 | 79 | 26.1 | 82 | S | 18 | 8.0 | ..... | 2c;k | 1ks;hz | SW;S | SW;S | 0 | 0 | Threatening | |
| Kittyhawk, North Carolina | 29.84 | 757.9 | 29.84 | 758.4 | 52 | 11.1 | 93 | NW | 2 | 0.9 | ..... | 5cs | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Knoxville, Tennessee | 28.71 | 729.2 | 29.76 | 754.4 | 59 | 10.0 | 58 | NE | 1 | 0.4 | ..... | ..... | 5ks | ..... | SW | 0 | 0 | Fair | |
| La Crosse, Wisconsin | 29.19 | 741.4 | 29.94 | 760.5 | 40 | 4 4 | 82 | N | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.02 | 0.5 | Light rain | |
| La Mesilla, New Mexico | 26.06 | 661.9 | 30.21 | 767.3 | 39 | 3.9 | 71 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.55 | 750.6 | 29.89 | 759.2 | 54 | 12.2 | 80 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 28.99 | 736.3 | 29.85 | 758.2 | 37 | 2 8 | 81 | NW | 6 | 2.7 | ..... | 2c | 0 | Calm | ..... | 0.64 | 16.3 | Clear | |
| Los Angeles, California | 29.56 | 750.8 | 29 89 | 759.2 | 54 | 12.2 | 80 | W | 1 | 0.4 | ..... | Haze | 5s | Calm | Calm | 0 | 0 | Fair | |
| Louisville, Kentucky | 29.16 | 740.7 | 29.71 | 754.6 | 47 | 8.3 | 70 | N | 4 | 1.8 | ..... | 5ck | 5s | SW | Calm | 0 | 0 | Cloudy | |
| Lynchburg, Virginia | 29.20 | 741.7 | 29.88 | 758.9 | 46 | 7.8 | 60 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.28 | 743.7 | 30.00 | 762.0 | 40 | 4.4 | 73 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mason, Texas | 28.33 | 719.6 | 30.10 | 764.5 | 49 | 9.4 | 51 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.31 | 744.5 | 29.62 | 752.3 | 52 | 11.1 | 73 | SE | 3 | 1.3 | ..... | ..... | 8s.sm' | ..... | SE | 0 | 0 | Cear | |
| Milwaukee, Wisconsin | 29.11 | 739.4 | 29.84 | 757.9 | 40 | 4.4 | 82 | N | 14 | 6.3 | ..... | ..... | *8ks | ..... | NE | 0 | 0 | Cloudy | |
| Mobile, Alabama | 29.66 | 753.4 | 29.70 | 754.4 | 57 | 13.9 | 69 | NW | 6 | 2.7 | ..... | 2k | 8s | W | SW | Inap. | Inap. | Cloudy | |
| Montgomery, Alabama | 29.43 | 747.5 | 29.66 | 753.4 | 55.5 | 13 1 | 74 | NW | 2 | 0.9 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Morgantown, West Virginia | 28.80 | 731.5 | 29.87 | 758.7 | 37 | 2.8 | 81 | Calm | 0 | 0 | ..... | 10c | Fog | W | ..... | 0 | 0 | Foggy | |
| Mt. Washington, N. H | 23 43 | 595.1 | 29.79 | 756.7 | 23 | — 5.0 | 60 | N | 42 | 18.8 | ..... | 0 | 8s | ..... | N | 0 | 0 | Fair | |
| Nashville, Tennessee | 29.15 | 739.6 | 29.65 | 753.1 | 53 | 11.7 | 54 | N | 2 | 0.9 | ..... | 2ck | 2s | SW | SW | 0 | 0 | Fair | |
| New Haven, Connecticut | 29.71 | 754.6 | 29.82 | 757.4 | 50 | 10.0 | 65 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| New London, Connecticut | 29.77 | 756.1 | 29.82 | 757.4 | 47 | 8.3 | 48 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New Orleans, Louisiana | 29.68 | 753.9 | 29.74 | 755.4 | 57 | 13.9 | 81 | W | 5 | 2.2 | ..... | 2k | Sm'e | Calm | Calm | Inap. | Inap. | Fair | |
| Newport, Rhode Island | 29.74 | 755.4 | 29.80 | 756.9 | 43 | 6.1 | 75 | NW | 5 | 2.2 | ..... | 2k | 0 | W | ..... | 0 | 0 | Clear | |
| New York, New York | 29.67 | 753.6 | 29.84 | 757.9 | 48 | 8.9 | 71 | NW | 3 | 1.3 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Norfolk, Virginia | 29.81 | 757.2 | 29.87 | 758.7 | 52 | 11.1 | 86 | SW | 1 | 0.4 | ..... | 5ks | Fog | W | ..... | 0 | 0 | Foggy | |
| North Platte, Nebraska | 27.15 | 689.6 | 29.82 | 757.4 | 31 | — 0.6 | 89 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Olympia, Washington Ter | 30.01 | 762.0 | 30.04 | 763.0 | 52 | 11.1 | 93 | W | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Omaha, Nebraska | 28.82 | 732.0 | 29.92 | 760.0 | 36 | 2.2 | 80 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Oswego, New York | 29.52 | 749.8 | 29.85 | 758.2 | 43 | 6.1 | 75 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pembina, Dakota | 29.22 | 742.2 | 30.08 | 764.0 | 27.5 | — 2.5 | 71 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Philadelphia, Pennsylvania | 29.82 | 757.4 | 29.87 | 758.7 | 46 | 7.8 | 61 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Phœnix, Arizona | 28.75 | 730.2 | 30.52 | 775.2 | 61 | 16.1 | 23 | S | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.65 | 448.3 | 29.86 | 758.4 | 7 | —13.9 | 100 | NE | 20 | 8.9 | ..... | ..... | 10n | ..... | NE | 0.26 | 6.6 | Light snow | |
| Pioche, Nevada | 24.00 | 609.6 | 29.77 | 756.1 | 39 | 3.9 | 55 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.03 | 737.3 | 29.85 | 758.2 | 37 | 2.8 | 90 | NE | 1 | 0.4 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Port Huron, Michigan | 29.18 | 741.2 | 29.85 | 758.2 | 40 | 4.4 | 82 | Calm | 0 | 0 | ..... | 8c | 0 | W | ..... | 0 | 0 | Fair | |
| Portland, Maine | 29.72 | 754.9 | 29.77 | 756.1 | 43 | 6.1 | 67 | NE | 7 | 3.1 | ..... | 1k | Haze | Calm | ..... | 0 | 0 | Clear | |
| Portland, Oregon | 29.96 | 761.0 | 30.07 | 763.8 | 48 | 8.9 | 92 | NW | 1 | 0.4 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Prescott, Arizona | 24.75 | 628.6 | 30.11 | 764.8 | 36 | 2.2 | 61 | S | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Punta Rassa, Florida | 29.66 | 753.4 | 29.68 | 753.9 | 78 | 25.6 | 82 | S | 28 | 12.5 | ..... | 5k | 5s | SW | S | 0.10 | 2.5 | Cloudy | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Red Bluff, California | 29.51 | 749.5 | 29.87 | 758.7 | 52 | 11.1 | 86 | NW | 6 | 2.7 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Rochester, New York | 29.21 | 741.9 | 29.83 | 757.7 | 44 | 6.7 | 68 | W | 5 | 2.2 | ..... | 1c | Haze | Calm | Calm | 0 | 0 | Clear | |
| Roseburg, Oregon | 29.45 | 748.0 | 30.02 | 762.5 | 47.5 | 8.6 | 96 | N | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sacramento, California | 29.74 | 755.4 | 29.82 | 757.4 | 53 | 11.7 | 90 | SE | 4 | 1.8 | ..... | 10k | 0 | SW | ..... | 0 | 0 | Cloudy | |
| St. Louis, Missouri | 29.16 | 740.7 | 29.73 | 755.1 | 48 | 8.9 | 70 | N | 11 | 4.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| St. Marks, Florida | 29.63 | 752.6 | 29.65 | 753.1 | 65 | 18.3 | 94 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 1.30 | 33.0 | Cloudy | |
| St. Paul, Minnesota | 29.12 | 739.6 | 29.98 | 761.5 | 32 | 0.0 | 69 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.51 | 647.9 | 29.84 | 757.9 | 42 | 5.6 | 66 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Antonio, Texas | 29.26 | 743.2 | 29.84 | 757.9 | 53 | 11.7 | 67 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Diego, California | 29.88 | 758.9 | 29.95 | 760.7 | 54 | 12.2 | 100 | NE | 4 | 1.8 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Sandusky, Ohio | 29.18 | 741.2 | 29.85 | 758.2 | 48 | 8.9 | 70 | SE | 5 | 2.2 | ..... | 5k | 0 | W | ..... | 0 | 0 | Fair | |
| Sandy Hook, New Jersey | 29.82 | 757.4 | 29.84 | 757.9 | 46 | 7.8 | 84 | NW | 2 | 0.9 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| San Francisco, California | 29.81 | 757.2 | 29.88 | 758.9 | 53 | 11.7 | 86 | SW | 2 | 0.9 | ..... | 0 | 5ks | ..... | Calm | Inap. | Inap. | Fair | |
| Santa Fé, New Mexico | 23.22 | 589.8 | 29.76 | 755.9 | 31 | — 0.6 | 69 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 29.58 | 751.3 | 29.67 | 753.6 | 68 | 17.2 | 100 | E | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.41 | 10.4 | Light rain | |
| Shreveport, Louisiana | 29.57 | 751.1 | 29.78 | 756.4 | 49 | 9.4 | 71 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 29.80 | 756.9 | 29.84 | 757.9 | 59 | 15.0 | 100 | NE | 6 | 2.7 | ..... | ..... | 10n | ..... | SW | Inap. | Inap. | Light rain | |
| Springfield, Massachusetts | 29.62 | 752.3 | 29.75 | 755.6 | 48 | 8.9 | 56 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Stockton, Texas | 26.97 | 685.0 | 29.97 | 761.2 | 40 | 4.4 | 56 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.15 | 3.8 | Clear | |
| Thatcher's Island, Mass | 29.74 | 755.4 | 29.79 | 756.7 | 41 | 5.0 | 74 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Toledo, Ohio, | 29.14 | 740.1 | 29.81 | 757.2 | 40 | 9.4 | 64 | E | 4 | 1.8 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 46 | 7.8 | 54 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tybee Island, Georgia | 29.64 | 752.8 | 29.66 | 753.4 | 65 | 18.3 | 94 | E | 8 | 3.6 | ..... | ..... | 10ks | ..... | S | 0.40 | 10.2 | Threatening | |
| Umatilla, Oregon | 29.65 | 753.1 | ..... | ..... | 49 | 9.4 | 85 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.47 | 748.5 | 29.73 | 755.1 | 51 | 10.6 | 86 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Virginia City, Montana | 24.28 | 616.7 | 29.76 | 755.9 | 39 | 3.9 | 46 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Visalia, California | 29.49 | 749.0 | 29.86 | 758.4 | 50 | 10.0 | 100 | N | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Washington, D. C | 29.78 | 756.4 | 29.89 | 759.2 | 49.5 | 9.7 | 68 | N | 3 | 1.3 | ..... | 2k | 1scm | W | ..... | 0 | 0 | Smoky | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 43 | 6.1 | 59 | NE | ..... | ..... | 3 | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 29.74 | 755.4 | 29.82 | 757.4 | 57 | 13.9 | 81 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Winnemucca, Nevada | 25.52 | 648.2 | 29.88 | 758.9 | 52 | 11.1 | 41 | N | 10 | 4.5 | ..... | 5k | 0 | E | ..... | 0 | 0 | Fair | |
| Wood's Holl, Mass | 29.72 | 754.9 | 29.78 | 756.4 | 49 | 9.4 | 57 | NW | 6 | 2.7 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear | |
| Yankton, Dakota | 28.75 | 730.2 | 30.09 | 764.3 | 30 | — 1.1 | 78 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Yuma, Arizona | 29.70 | 754.4 | 29.87 | 758.7 | 58 | 14.4 | 63 | E | 3 | 1.3 | ..... | 6 | 0 | ..... | ..... | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A | 29.74 | 755.4 | 29.80 | 756.9 | 26.6 | — 3.0 | 95 | S | 12 | 5.4 | ..... | 5cs | 2s | S | ..... | ..... | ..... | Raining | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I | 29.73 | 755.1 | 29.75 | 755.6 | 80 | 26.7 | 74 | S | 3.6 | 1.6 | ..... | 8c | 2n | W | S | 0.08 | 2.0 | Fair | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | 30.03 | 762.7 | 30.04 | 763.0 | 76 | 24.4 | 86 | SE | 8 | 3.6 | ..... | 8c | 2s | SE | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I | 29.81 | 757.2 | 29.89 | 759.2 | 81 | 27.2 | ..... | SE | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | F. M. Everett. |
| Paramaribo, D. Guiana, S. A | 29.97 | 761.2 | 29.97 | 761.2 | 82 | 27.8 | 83 | NE | ..... | ..... | 2 | 4c | 6k | E | ..... | 0.230 | 5.84 | Fair | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | Dr. H. Groot. |
| Medellin, Colombia, S. A | 25.18 | 639.6 | ..... | ..... | 66.5 | 19.2 | 85 | Calm | ..... | ..... | 0 | 1ck | 1ks | ..... | ..... | Inap. | Inap. | ..... | Thomas Herran. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m., Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,576 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,276 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.82 | 757.4 | 54 | 12.2 | 53 | 11.7 | 93 | NW | 8 | 3.6 | .... | ..... | 8 | ..... | W | 0 | 0 | ..... | ..... | Cloudy..... | |
| Navy Yard, Pensacola, Fla. | 29.80 | 756.9 | 60 | 15.6 | 61 | 16.1 | 82 | NE | 11 | 4.9 | .... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Navy Yard, Portsmouth, N.H | 29.87 | 758.7 | 80 | 26.7 | 42 | 5.6 | 91 | NNE | 1 | 0.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear ..... | |
| Naval Hospital, Yokohama, Japan | 29.88* | 758.9* | 67 | 19.4 | 67 | 19.4 | 74 | SW | ..... | ..... | 6 | ..... | 2c | ..... | SW | 0.14 | 3.6 | ..... | ..... | ..... | |
| Adams, Panama | 29.91 | 759.7 | 81 | 27.2 | 81 | 27.2 | 83 | NE | ..... | ..... | 0–1 | ..... | 2 | ..... | ..... | ..... | ..... | Smooth | ..... | Misty..... | |
| Alliance, Naples, Italy | 29.98‡ | 761.5‡ | ..... | ..... | 61 | 16.1 | 88 | WNW | ..... | ..... | 3 | ..... | 4 | ..... | WNW | ..... | ..... | Light | W | Pleasant..... | |
| Ashuelot, Shanghai, China | 30.25 | 768.3 | 49 | 9.4 | 47 | 8.3 | 92 | NE | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Heavy rain. | |
| Canonicus, New Orleans, La. | 29.74 | 755.4 | 46 | 7.8 | 59 | 15.0 | 82 | WSW | ..... | ..... | 2 | ..... | 4 | ..... | N&E | ..... | ..... | ..... | ..... | Fair ..... | |
| Colorado, New York, N. Y. | 29.82‡ | 757.4‡ | ..... | ..... | 48 | 8.9 | 70 | NNE | 2 | 0.9 | ..... | ..... | 5 | ..... | N | 0 | 0 | ..... | ..... | Light fog..... | |
| Constellation, N. 40° 43′ W. 62° 07′ | 29.44‡ | 747.8‡ | ..... | ..... | 35 | 1.7 | 100 | NNW | ..... | ..... | 8 | ..... | 10 | ..... | N | ..... | ..... | Heavy | N | Stormy..... | |
| Constitution, Havre, France | 29.55‡ | 750.6‡ | ..... | ..... | 48 | 8.9 | 92 | SSW | ..... | ..... | 3 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Overcast..... | |
| Despatch, Constantinople, Turkey | 29.84‡ | 757.9‡ | ..... | ..... | 66 | 18.9 | 64 | WSW | ..... | ..... | 3 | ..... | 5 | ..... | SW | ..... | ..... | ..... | ..... | Fair..... | |
| Enterprise, N. 27° 25′, W. 79° 43′ | 29.76‡ | 755.0‡ | ..... | ..... | 73 | 22.8 | 90 | E | ..... | ..... | 4 | ..... | 10 | ..... | E | Heavy | Heavy | Mod'ate | E | Rainy..... | |
| Franklin, Norfolk, Va. | 29.97 | 761.2 | ..... | ..... | 51 | 10.6 | 79 | N | 1 | 0.4 | ..... | ..... | 5 | ..... | N | 0 | 0 | ..... | ..... | D. clouds..... | |
| Gettysburg Valetta, Malta | 30.08‡ | 764.0‡ | ..... | ..... | 64 | 17.8 | 100 | WNW | ..... | ..... | 3 | ..... | 5 | ..... | Calm | 0 | 0 | ..... | ..... | Fair ..... | |
| Guard, Porto Grande, Cape Verde Islands | 30.04 | 763.0 | 75 | 23.9 | 75 | 23.9 | 68 | NE | ..... | ..... | 3 | ..... | 2 | ..... | NE | ..... | ..... | Ground | NW | Clear..... | |
| Hartford, Montevideo, Uraguay | 30.06 | 763.5 | 70 | 21.1 | 68 | 20.0 | 70 | E | 10 | 4.5 | ..... | ..... | 5 | ..... | E | ..... | ..... | Mod'ate | E | Fair ..... | |
| Marion, Smyrna, Turkey | 29.93 | 760.2 | 63 | 17.2 | 66 | 18.9 | 69 | WSW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | ..... | Fair ..... | |
| Michigan, Erie, Pa. | 29.34 | 745.2 | 62 | 16.7 | 45 | 7.2 | 76 | S | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Monocacy, Shanghai, China | 30.07‡ | 763.8‡ | ..... | ..... | 46 | 7.8 | 84 | NE | ..... | ..... | 3 | ..... | 10 | ..... | NW | ..... | ..... | ..... | ..... | Overcast..... | |
| New Hampshire, Port Royal, S. C. | 29.86 | 758.4 | 64 | 17.8 | 64 | 17.8 | 94 | ENE | 22 | 9.8 | .... | ..... | 10 | ..... | E | 0.81 | 20.6 | ..... | ..... | Rainy..... | |
| Omaha, St. Thomas, W. I. | 30.00* | 762.0* | 82 | 27.8 | 82 | 27.8 | 71 | S | 2 | 0.9 | ..... | ..... | 3 | ..... | S | 0 | 0 | Smooth | ..... | Bright..... | |
| Onward, Callao, Peru | 29.95† | 760.7† | ..... | ..... | 73 | 22.8 | 95 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, Pensacola, Fla. | 29.69‡ | 754.1‡ | ..... | ..... | 62 | 16.7 | 77 | NW | ..... | ..... | 3 | ..... | 8 | ..... | N | ..... | ..... | ..... | ..... | Clearing..... | |
| Palos, Shanghai, China | 30.43* | 772.9* | 61 | 16.1 | 44 | 6.7 | 100 | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Rainy ..... | |
| Pensacola, Honolulu, H. I. | 30.26 | 768.6 | 75 | 23.9 | 71 | 21.7 | 66 | NE | 6 | 2.7 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Plymouth, Norfolk, Va. | 29.82‡ | 757.4‡ | ..... | ..... | 53 | 11.7 | 80 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | W | ..... | ..... | ..... | ..... | Misty..... | |
| Powhatan, Norfolk, Va. | 29.94‡ | 760.5‡ | ..... | ..... | 53 | 11.7 | ?? | SSW | 2.4 | 1.1 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | ..... | Pleasant..... | |
| Ranger Amoy, China | 30.16* | 766.1* | ..... | ..... | 71 | 21.7 | 90 | Calm | ..... | ..... | 0 | ..... | 6 | ..... | Calm | ..... | ..... | Smooth | ..... | Foggy ..... | |
| Rio Bravo, Brownsville, Texas | 29.85 | 758.2 | 62 | 16.7 | 61 | 16.1 | 94 | NW | ..... | ..... | 5 | ..... | 5 | ..... | NW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Santee, Annapolis, Md. | 29.95‡ | 760.7‡ | ..... | ..... | 55 | 12.8 | 62 | NNE | ..... | ..... | 1 | ..... | 1 | ..... | WSW | 0 | 0 | ..... | ..... | Clear ..... | |
| Saratoga, Washington, D. C. | 29.81* | 757.2* | ..... | ..... | 52 | 11.1 | 93 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| St. Louis, League Island, Pa | 29.83 | 757.7 | 58 | 14.4 | 48 | 8.9 | 70 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear.. ..... | |
| Supply, Havre, France | 29.65 | 753.1 | 52 | 11.1 | 50 | 10.0 | 93 | SW | ..... | ..... | 3 | ..... | 10 | ..... | SW | ..... | ..... | ..... | ..... | Rainy ..... | |
| Swatara, Aspinwall | 29.90 | 759.4 | 81 | 27.2 | 80 | 26.7 | 91 | S | ..... | ..... | 0–1 | ..... | 8 | ..... | N&E | ..... | ..... | ..... | ..... | Cloudy..... | |
| Tennessee, N. 8° 56′ E 67° 18′ | 29.93* | 760.2* | 88 | 31.1 | 88 | 31.1 | 65 | NNE | 1 | 0.4 | .... | ..... | 2 | ..... | ..... | ..... | ..... | Slight | S | D. clouds.... | |
| Trenton, N. 36° 30′, E. 22° 02′ | 30.06‡ | 763.5‡ | ..... | ..... | 63 | 17.2 | 83 | WNW | ..... | ..... | 3 | ..... | 2 | ..... | NW | 0 | 0 | Smooth | ..... | Misty..... | |
| Tuscarora, San Lorenzo Channel, Mex. | 29.74 | 755 4 | 69 | 20.6 | 69 | 20.6 | 56 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |
| Vandalia, N. 43° 51′, E 7° 31′ | 29.93‡ | 760.2‡ | ..... | ..... | 60 | 15.6 | 76 | W | ..... | ..... | 2 | ..... | 2 | ..... | Calm | ..... | ..... | Mod'ate | WSW | Clear..... | |
| Wabash, Boston, Mass. | 29.77‡ | 756.1‡ | ..... | ..... | 43 | 6.1 | 75 | NW | 11 | 4.9 | ..... | ..... | 2 | ..... | Calm | 0 | 0 | ..... | ..... | Fair..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | Character. | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Peking, N. 37° 19′, W. 129° 43′ | | | 30.15† | 766.6† | 50 | 10.0 | 100 | NNW | 46.8 | 20.9 | | 7 | | NW | | Mod'ate | NW | Showery | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, N. 34° 30′, E. 138° 30′ | | | | | 60 | 15.6 | | ENE | | | 3 | | 10 | | | Smooth | | Overcast | Capt. Maury. |
| S. S. Colima, N. 13° 30′, W. 89° 18′ | | | 29.88† | 759.9† | 79 | 26.1 | 76 | N | | | 2 | | 5 | NW | | Small | S | Misty | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. †Aneroid.

**WHITE STAR LINE MARINE SERIES.**

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. W. H. Thompson. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4.

**OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.**

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, N. 40° 14′, W. 163° 3′ | | | 30.13* | 765.3* | | | | SSE | | | 3 | | Heavy | | SSE | Mod'ate | SSE | Raining | Capt. John Metcalf. |
| S. S. Gaelic, Hong-Kong, China | | | 30.03† | 762.7† | 63 | 17.2 | 78 | E | | | 0 | | | | | | | Misty | Capt. W. H. Kidley |
| S. S. Oceanic, N. 35° 02′, E. 173° 14′ | | | 29.90 | 759.4 | 45 | 7.2 | 92 | NNW | | | 6 | | 5 | | NW;SW | Mod'ate | NW | Raining | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

**NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.**

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg, N. 31° 08′, W. 49° 46′ | | | 29.57 | 751.1 | 70.5 | 21.4 | 77 | WNW | | | 7 | | clr | | WNW | Rough sea. | WNW | Squally | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | Character | Direction From— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois, N. 42° 40', W. 52° 02' | | | 28.98* | 736.1* | 47 | 8.3 | 85 | ESE | | | 1 | | 4 | | WNW | Heavy | SW | Foggy | Captain Shackelford. |
| S. S. Indiana, Liverpool | | | 29.53* | 750.0* | 47 | 8.3 | 62 | NW | | | 1 | | 4 | | WSW | | | Cloudy | Captain Sargent. |
| S. S. Ohio, Philadelphia, Pa | | | 29.86 | 758.4 | 52 | 11.1 | 93 | SE | | | 1 | | 4 | | Calm | | | Clear | Captain Morrison. |
| S. S. Pennsylvania | | | | | | | | | | | | | | | | | | | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Corrected for temperature and elevation, instrumental error not known.

## RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland, N. 49° 09', W. 17° 35' | | | 29.74* | 755.4* | | | | NW | 25 | 11.2 | | | 3 | | NW | Moderate | NW | D. clouds | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
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*Aneroid; regulated to standard at Antwerp.

## ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| S. S. Scandinavian, N. 49° 1', W. 35° 36' | | | 29.83 | 757.7 | 53 | 11.7 | | ENE | | | 6 | | 10 | | SW | Short | ENE | D. clouds | Capt. W. Richardson. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

## MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller Crisfield, Md. | | | 29.78 | 756.4 | 54 | 12.2 | 74 | NE | 3 | 1.3 | | | 6ck | | SW | | | Clear | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13', W. 67° 19' | | | 30.07 | 763.8 | — 2 | —18.9 | 87 | W | 16.1 | 7.2 | | 0 | 0 | | | | | Clear | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg'd,) Chief Signal Officer, U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 4, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | | | 30.10 | 764.6 | 64.5 | 17.9 | 80 | SW | | | 1 | | 3 | | | 0 | 0 | Pretty fair.. | Dr. Ollive. |
| Nemours | | | 30.06 | 763.4 | 71.6 | 22.0 | 55 | N | | | 1 | | 5 | | | 0 | 0 | Cloudy | Michel. |
| Algiers | | | 29.97 | 761.2 | 74.1 | 23.4 | 53 | Calm | | | 0 | | 10 | | | 0 | 0 | Covered | Towlliere. |
| La Calle | | | 30.01 | 762.2 | 70.3 | 21.3 | 68 | ESE | | | 3 | | 5 | | | 0 | 0 | Cloudy | Boulangeot. |
| Tunis | | | 30.08 | 764.1 | 80.4 | 26.9 | 34 | WSW | | | 5 | | 2 | | | 0 | 0 | Fair | Jacques. |
| Sfax | | | 30.18 | 766.5 | 66.2 | 19.0 | | WSW | | | 3 | | 2 | | | 0 | 0 | Fair | Gau. |
| Saida | | | 30.11 | 764.9 | 70.3 | 21.3 | | SSE | | | 3 | | 2 | | | 0 | 0 | Fair | Herbin. |
| Tebessa | | | 30.14 | 765.6 | | | | SSW | | | 5 | | 0 | | | 0 | 0 | Clear | Watrin. |
| Geriville | | | 30.10 | 764.4 | 62.2 | 16.8 | 83 | S | | | 4 | | 5 | | | 0 | 0 | Cloudy | Lemaillot. |
| Laghouat | | | 30.19 | 766.9 | 75.2 | 24.0 | 14 | W | | | 4 | | 1 | | | 0 | 0 | Very fair. | Bertrand. |
| Biskra | | | 30.17 | 766.4 | 82.0 | 27.8 | 69 | SE | | | 3 | | 3 | | | 0 | 0 | Pretty fair.. | Chanvaux. |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.46 | 748.3 | 30.00 | 762.1 | 59.4 | 15.2 | 40 | SW | | | 4 | | S | | | 0 | 0 | | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.17 | 741.0 | 29.94 | 760.5 | 54.0 | 12.2 | 52 | W | | | 1 | | 10 | | | 0 | 0 | | Dr. Wierzbiski. |
| Eperies | 29.03 | 737.4 | 29.91 | 759.6 | 56.1 | 13.4 | 58 | Calm | | | 0 | | 9cks | | Calm | 0.593 | 15.05 | | Julius Mikolik. |
| Gratz | 28.67 | 728.3 | 29.92 | 760.0 | 55.8 | 13.2 | 52 | WSW | | | 3 | | 2 | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28.57 | 725.7 | 30.01 | 762.2 | 48.6 | 9.2 | 54 | NW | | | 3 | | 8 | | | 0 | 0 | | Prof. Reissenberg |
| Kremsmünster | 28.51 | 724.2 | 29.85 | 758.1 | 52.9 | 11.6 | 53 | Calm | | | 0 | | 7 | | | 0 | 0 | | Prof. C. Wagner |
| Lemberg | 28.84 | 732.5 | 29.82 | 757 4 | 52.3 | 11.3 | 97 | NW | | | 2 | | 10 | | | 0 | 0 | | Dr. T. Stanecki. |
| Pola | 29.97 | 761.3 | 30.09 | 764.2 | 57.7 | 14.3 | 75 | S | | | 2 | | 10s | | | 0 | 0 | | I.R.Hydrographic Office |
| Szathmar | 29.56 | 750.7 | 30.02 | 762.5 | 54.3 | 12.4 | 64 | SW | | | 2 | | 6 | | | 0 | 0 | | Johann Tamas, S. J. |
| Szegedin | 29.72 | 754.9 | 30.00 | 762.0 | 57.9 | 14.4 | 53 | SE | | | 1 | | 0 | | | 0 | 0 | | Karl Stancel. |
| Trieste | 29.99 | 761.8 | 30.10 | 764.4 | 55.0 | 12.8 | 83 | NW | | | 1 | | 10 | | | 0.024 | 0.6 | Raining | P. Busin. |
| Vienna | 29 16 | 740.6 | 29.86 | 758.5 | 59.0 | 15.0 | 41 | SE | | | 2 | | 8 | | | 0 | 0 | | I. R. Central Met. Obs'y. |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | W | | | 1 | | 6 | | | 0.012 | 0.3 | | Prof. M. Passau. |
| Brussels | 29.62 | 752.3 | 29.82 | 757.5 | 47.3 | 8.5 | 61 | W | | | 2 | | 8 | | W | 0 | 0 | | Royal Observatory. |
| Furnes | 29.82 | 757.3 | 29.84 | 757.9 | 49.3 | 9.6 | 63 | W | | | 1 | | 2 | | | 0 | 0 | | M. E. de Cae. |
| Maeseyck | 29.70 | 754.3 | 29.82 | 757.5 | 48.2 | 9.0 | 71 | S | | | 1 | | 7 | | | 0.476 | 12.1 | | M. Pierrot. |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4? set. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum't'al error and temperature. Inches. | Barometer. Corrected for instrum't'al error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force —10. | Clouds. Amount. Up'er (1—10. | Clouds. Amount. Low'r (1—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.61 | 752.1 | 29.71 | 754.6 | 43.7 | 6.5 | ..... | NW | 6 | 2.7 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | Blue sky..... | W. B swell. |
| Ardrossan | 29.68 | 753.9 | 29.70 | 754.4 | 48 | 8.9 | ..... | W | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.76 | 755.9 | 47.3 | 8.5 | ..... | SSW | 9 | 4.0 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.78 | 756.4 | 46.2 | 7.9 | ..... | WNW | 11 | 4.9 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 29.74 | 755.4 | 49.2 | 9.6 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | J. L. E. Dreyer. |
| Bradford, Yorkshire | 29.37 | 746.0 | 29.76 | 755.9 | 48.1 | 8.9 | ..... | W | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0.11 | 2.8 | D. clouds..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.91 | 759.7 | 29.94 | 760.5 | 83.0 | 28.3 | ..... | NE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.79 | 756.7 | 52.0 | 11.1 | ..... | W | ..... | ..... | 1 | ..... | 5 | ..... | ..... | Blank | Blank | D. clouds..... | H. Todd. [H. C. |
| Cardington | ..... | ..... | 29.80 | 756.9 | 50.0 | 10.0 | ..... | SW | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | John McLaren. |
| Chatham, School M. E. | 29.67 | 753.6 | 29.80 | 756.9 | 51.2 | 10.7 | ..... | SW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.34 | 719.8 | 29.86 | 758.4 | 41.0 | 5.0 | ..... | W | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | Snowing..... | Alexander Watt. |
| Donaghadee | 29.72 | 754.9 | 29.75 | 755.6 | 51 | 10.6 | ..... | SSW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 29.79 | 756.7 | 29.82 | 757.4 | 46 | 7.8 | ..... | W | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | ¼ clouded.. | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.76 | 755.9 | 49.8 | 9.9 | ..... | NW | 2.0 | 0.9 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Thomas Mackereth. |
| Falmouth, Observatory | 29.62 | 752.3 | 29.85 | 758.2 | 51.0 | 10.6 | ..... | W | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | The Staff. |
| Fort Napier, (Natal) | 27.83 | 706.9 | 30.01 | 762.2 | 92.0 | 33.3 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.67 | 753.6 | 29.90 | 759.4 | 89 | 31.7 | ..... | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's College | ..... | ..... | 29.66 | 753.4 | 47 | 8.3 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Showery..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.95 | 760.7 | 30.01 | 762.2 | 71.7 | 22.1 | ..... | W | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | Showery..... | Corpl. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.46 | 748.3 | 29.66 | 753.4 | 46.2 | 7.9 | ..... | WNW | ..... | ..... | 5 | ..... | 4 | ..... | ..... | ..... | ..... | Blue sky..... | D. G. Maclean. |
| Great Yarmouth | 29.77 | 756.1 | 29.77 | 756.1 | 45 | 7.2 | ..... | NNE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Misty..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.64 | 752.8 | 29.81 | 757.2 | 52.0 | 11.1 | ..... | WSW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff, for G. B. Airy. |
| Guernsey | 29.62 | 752.3 | 29.84 | 757.9 | 50 | 10.0 | ..... | WNW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 29.82 | 757.4 | 54 | 12.2 | ..... | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0.06 | 1.5 | Fine..... | M. P. Moyle. |
| Holyhead | 29.74 | 755.4 | 29.79 | 756.7 | 47 | 8.3 | ..... | W | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | John Tilston. |
| Jersey | 29.59 | 751.6 | 29.90 | 759.4 | 50.3 | 10.2 | ..... | WSW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 29.81 | 757.2 | 48.1 | 8.9 | ..... | WSW | 5 | 2.2 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff. |
| Kingstown | 29.76 | 755.9 | 29.79 | 756.7 | 47 | 8.3 | ..... | SSE | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.79 | 756.7 | 47.7 | 8.7 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 30.11 | 764.8 | 30.18 | 766.6 | 64.4 | 18.0 | ..... | SE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | Sgt. Fred. Travis, A. H. |
| Nairn | 29.55 | 750.6 | 29.64 | 752.8 | 47 | 8.3 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Clear..... | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 29.74 | 755.4 | 76.2 | 24.6 | ..... | NW | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 29.59 | 751.6 | 29.78 | 756.4 | 56.2 | 13.4 | ..... | SW | ..... | ..... | 3 | ..... | 7kst;k | ..... | W | 0.020 | 0.51 | D. clouds..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.26 | 743.2 | 29.78 | 756.4 | 47.9 | 8.8 | ..... | WNW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Hazy ..... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.76 | 755.9 | 50 | 10.0 | ..... | SSW | ..... | ..... | 0 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | Mr. Lucas. |
| Plymouth | 29.75 | 755.6 | 29.83 | 757.7 | 51.5 | 10.8 | ..... | NW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | John Merrifield. |
| Roche's Point | 29.72 | 754.9 | 29.77 | 756.1 | 46 | 7.8 | ..... | SW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | Showery..... | W. Kennedy. |
| Saint Ann's Head | 29.62 | 752 3 | 29.78 | 756.4 | 46 | 7.8 | ..... | WSW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | John C. Walker. |
| Sandwick Manse, (Orkneys.) | ..... | ..... | 29.66 | 753.4 | 42.1 | 5.6 | ..... | W | 17 | 7.6 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 30.00 | 762.0 | 51.6 | 10.9 | ..... | E | ..... | ..... | 1 | ..... | 9 | ..... | ..... | Blank | Blank | Gloomy..... | Sergt. W. H. Lyne. |
| Sheffield | 29.48 | 748.8 | 29.76 | 755.9 | 50.9 | 10.5 | ..... | SW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0.04 | 1.0 | Blue sky..... | W. F. Cooper. |
| Silloth Rectory | 29.70 | 754.4 | 29.73 | 755.1 | 52.0 | 11.1 | 59 | NW | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | D. clouds..... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.37 | 746.0 | 29.78 | 756.4 | 45.1 | 7.3 | ..... | W | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 29.60 | 751.8 | 43 | 6.1 | ..... | NNW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | ¼ clouded.. | John Sutherland. |
| Stratfield Turgiss | 29.58 | 751.3 | 29.80 | 756.9 | 48.3 | 9.1 | ..... | SW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. C. H. Griffith, F.M. |
| Thurso | ..... | ..... | 29.66 | 753.4 | 48 | 8.9 | ..... | SSW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 29.83 | 757.7 | 55 | 12.8 | ..... | W | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 29.76 | 755.9 | 46.4 | 8.0 | ..... | SW | 13 | 5.8 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | 29.49 | 749.0 | 63.5 | 17.5 | 93 | NW | ..... | ..... | 2 | ..... | 7k | ..... | ..... | 0 | 0 | Cloudy..... | Andrew Gibb. |
| Mauritius, Observatory | 29.78 | 756.4 | 29.96 | 761.1 | 79.9 | 26.7 | 66 | SE | 21.0 | 9.4 | ..... | 8 | 2 | WSW | ..... | 0 | 0 | Squally..... | C. Meldrum. |
| Melbourne, Observatory | 30.11 | 764.8 | 30.20 | 767.1 | 53.3 | 11.8 | 89 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Fine..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

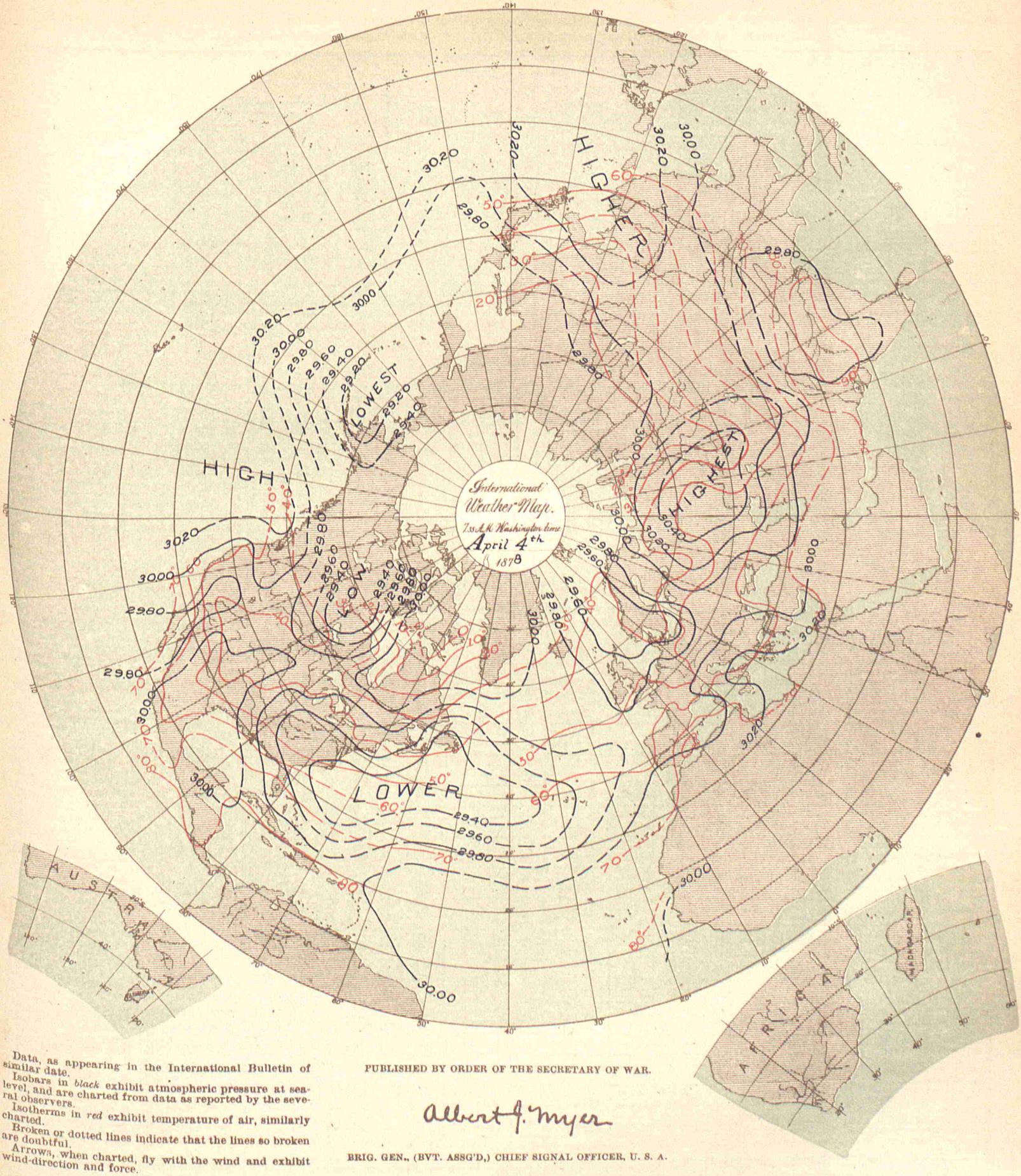
NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m.

## MARINE SERIES.

### VESSELS.

| | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | | | |
|---|---|---|---|---|---|
| S. S. Algeria, N. 48° 15′ W. 34° 50′ | 20* | ESE | Drizzling..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | Capt. C. C. Prehn. |
| S. S. Peruvian, N. 39° 0′, W. 71° 20′ | 3 | NE | D. clouds..... | Capt. W. H. Smith, R. N. [R. |
| Royal Alice | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire, N. 46° 15′ W. 30° 50′ | 7 | ENE | Raining..... | Capt. H. Longley. |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.18 | 665.0 | | | 70.7 | 21.5 | 82 | SE | | | 1 | p | Haze | | | Inap. | Inap. | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| STATIONS. | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.32 | 744.6 | 29.36 | 745.8 | 39.4 | 4.1 | 85 | NW | | | 4 | | 10 | | | | | Raining | |
| Fanöe | 29.59 | 751.5 | 29.61 | 752.0 | 39.9 | 4.4 | 92 | W | | | 4 | | 10 | | | | | | |
| Godthaab, (Greenland) | 29.98 | 761.6 | 30.03 | 762.7 | 26.4 | — 3.1 | 82 | W | | | 4 | | 10 | | | | | Snowing | |
| Stykkisholm, (Iceland) | 29.83 | 757.7 | 29.87 | 758.8 | 27.5 | — 2.5 | 96 | E | | | 4 | | 8 | | | | | | |
| Thorshavn, (Faröe) | 29.61 | 752.2 | 29.65 | 753.1 | 40.6 | 4.8 | 67 | W | | | 2 | | 2 | | | | | | |
| Vestervig | 29.40 | 746.8 | 29.57 | 751.1 | 39.9 | 4.4 | 97 | N | | | 4 | | 6 | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| STATIONS. | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.19 | 741.5 | 29.73 | 755.2 | 46.4 | 8 | 75 | NE | | | 1 | | 2 | | NE | 0.484 | 12.30 | Slightly cl'dy | Collignon, Director. |
| Amiens, Normal School | | | | | | | | | | | | | | | | | | | Bonvarne, Director. |
| Avignon, Normal School | 29.97 | 761.1 | 30.04 | 763.1 | 59.0 | 15 | 66 | SE | | | 1 | | 8 | | SE | 0 | 0 | Very cloudy | Mr. Giraud, Director |
| Bar-sur-Seine | 29.32 | 744.6 | 29.88 | 759.0 | 46.2 | 7.9 | 83 | E | | | 1 | | 10 | | | 0.437 | 11.1 | Light rain.. | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 52.3 | 11.3 | 51 | SW | | | 1 | | 5 | | WSW | 0.423 | 10.75 | Cloudy | Normal School. |
| Besançon | 29.04 | 737.5 | 29.93 | 760.1 | 52.0 | 11.1 | 86 | SW | | | 6 | | 10 | | SW | 0.244 | 6.2 | Covered | Normal School. |
| Bourg-en-Bresse | 29.06 | 738.0 | 29.97 | 761.1 | 53.8 | 12.1 | 72 | S | | | 4 | | 10n | | W | 0.142 | 3.6 | Covered | Normal School. |
| Bourges, Normal School | 29.28 | 743.7 | 29.83 | 757.7 | 53.2 | 11.8 | 93 | W | | | 6 | | 8 | | W | 0.20 | 5. | Very cloudy | A. Wagner, Director. |
| Brest, Naval Observatory | 29.59 | 751.6 | 29.81 | 757.1 | 57.0 | 13.9 | 55 | SW | | | 2 | | 2k | | SW | 0.266 | 6.75 | | The Staff. |
| Carcassonne, Normal School | 29.90? | 759.4? | 30.32? | 770.0? | 60.1 | 15.6 | 71 | E | | | 4 | | 5 | | E | 0 | 0 | Cloudy | Vateau, Director. |
| Caen | 29.78 | 756.3 | 29.85 | 758.2 | 52.0 | 11.1 | 59 | NW | | | 4 | | 2 | | | 0.449 | 11.4 | Slightly cl'dy | Normal School. |
| Chartres, Normal School | 29.24 | 742.8 | 29.81 | 757.2 | 50.4 | 10.2 | 93 | E | | | 1 | | 5 | | SE | 0.43 | 11. | | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.55 | 750.6 | 29.87 | 758.8 | 50.4 | 10.2 | 76 | S | | | 2 | | 5k | | S | 0.520 | 13.2 | Cloudy | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.52 | 724.5 | 29.86 | 758.4 | 59.7 | 15.4 | 45 | SW | | | 1 | | 10 | | SW | 0 | 0 | Covered | Alluard, Director. |
| Commercy, Normal School | 29.02 | 737.1 | 29.91 | 759.8 | 42.4 | 5.8 | 91 | WNW | | | 2 | | 10 | | WNW | 0.449 | 11.4 | Covered | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.90 | 734.1 | 30.04 | 763.1 | 59.0 | 15.0 | 61 | SE | | | 2 | | 8 | | SE | 0 | 0 | ¾ Covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 29.71 | 754.6 | 29.92 | 760.0 | 53.2 | 11.8 | 87 | W | | | 8 | | 10 | | | 0.063 | 1.6 | Covered | Mouillot, Director. |
| Le Mans, Normal School | 29.56 | 750.7 | 29.86 | 758.5 | 50.4 | 10.2 | 62 | SE | | | 2 | | 8 | | SE | 0.610 | 15.5 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.88 | 733.5 | 29.80 | 757.0 | 50.7 | 10.4 | 95 | W | | | 2 | | 10 | | SE | 0.362 | 9.2 | Covered | Voudez, Director. |
| Lorient, Naval Observatory | 29.63 | 752.5 | 29.73 | 755.1 | 50.0 | 10.0 | 62 | SW | | | 2 | | 8 | | SW | 0 | 0 | ¾ covered | T. Carré, Director. |
| Mâcon, Normal School | 29.23 | 742.4 | 29.88 | 759.0 | 52.9 | 11.6 | 93 | Calm | | | 0 | | 10 | | | 0.173 | 4.4 | Covered | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | 28.81 | 731.7 | 29.87 | 758.7 | 43.0 | 6.1 | 88 | SW | | | 2 | | 10 | | NE | 0.39 | 10. | Covered | Normal School. |
| Nismes, Normal School | 29.79 | 756.6 | 29.99 | 761.7 | 57.9 | 14.4 | 74 | S | | | 2 | | 10 | | SE | 0 | 0 | Covered | Boyer, Director. |
| Orleans, Normal School | 29.37 | 746.0 | 29.75 | 755.7 | 54.5 | 12.5 | 94 | E | | | 2 | | 10 | | | 0.47 | 12. | Covered | Bernard, Director. |
| Paris, Observatory | 29.62 | 752.3 | 29.86 | 758.4 | 51.6 | 10.9 | 68 | E | | | 1 | | 10 | | E | 0.483 | 12.27 | Misty | National Observatory. |
| Privas | 28.95 | 735.2 | 30.02 | 762.5 | 51.8 | 11 | 70 | S | | | 2 | | 10 | | | 0 | 0 | Covered | Normal School |
| Puy de Dome (Summit) | | | | | | | | | | | | | | | | | | | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.85 | 758.2 | 29.88 | 759.0 | 54.3 | 12.4 | 93 | SW | | | 5 | | 10 | | SW | 0.08 | 2. | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.76 | 756.0 | 29.77 | 756.2 | 55.9 | 13.3 | 54 | SSW | | | 2 | | 0 | | | 0.532 | 13.5 | Clear. | F. Lucard, Director. |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | M. H. Hercouet. |
| Tarbes, Normal School | 28.84 | 732.5 | 29.89 | 759.3 | 64.8 | 18.2 | 60 | SW | | | 1 | | 2 | | SW | 0 | 0 | Slightly cl'dy | T. Hugues, Director. |
| Villefranche | 29.17 | 740.9 | 29.87 | 758.8 | 57.7 | 14.3 | 75 | SE | | | 4 | | 10 | | NW | 0.055 | 1.4 | Covered | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.76 | 756.0 | 29.79 | 756.7 | 78.8 | 26 | | | | | | | | | | 0 | 0 | | L'Abbé Marchési. |
| Lyons | | | 29.95 | 760.8 | 59.9 | 15.5 | | | | | | | 6 | | | 0 | 0 | | M. Jeys. |
| Marseilles, Observatory | | | 29.90 | 761.8 | 60.1 | 15.6 | 69 | SE | | | 2 | | 10 | | | | | Rainy | The Staff. |
| Mont-Louis | 24.89 | 629.8 | 30.11 | 764.8 | 53.4 | 11.9 | 31 | SSW | 14.9 | 6.66 | | | 4 | | SSW | 0 | 0 | | Mr. Falguère. |
| Nice | | | 30.05 | 763.2 | 63.5 | 17.5 | 68 | W | | | 1 | | 6 | | | 0 | 0 | Cloudy | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.57 | 751.1 | 29.85 | 758.1 | 52.3 | 11.3 | 64 | SE | | | 2 | | 7 | | | 0.390 | 9.9 | | Marié Davy, Director |
| Perpignan | | | 29.95 | 760.8 | 58.5 | 14.7 | 73 | E | 5.6 | 2.50 | | | 10 | | NW | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.42 | 569.4 | | | 36.3 | 2.4 | | W | | | 3 | | 8 | | | 0.083 | 2.1 | Snowy | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.69 | 754.2 | 29.86 | 758.4 | 52.3 | 11.3 | 55 | Var. | | | 1 | | 5 | WSW | NNW | 0 | 0 | | E. Renou. |
| Toulouse, Observatory | 29.23 | 742.4 | 29.95 | 760.7 | 61.5 | 16.4 | 70 | SSE | | | 3 | | 5 | | | 0.087 | 2.20 | | The Staff. |
| Tours | 29.65 | 753.2 | 29.85 | 758.2 | 47.7 | 8.7 | 86 | NE | | | 2 | | 10 | | NNE | 0.370 | 9.4 | | C. Marquet. |
| Versailles, (near Paris) | | | 29.85 | 758.2 | 52.9 | 11.6 | 46 | WSW | | | 1 | | 7 | | | 0.393 | 9.97 | Cloudy | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.36 | 771.2 | 30.39 | 771.8 | 44.6 | 7.0 | 89 | ENE | 5.4 | 2.4 | | | 10 | | | 0.732 | 18.6 | Covered | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | |
| Berlin | 29.55 | 750.6 | 29.72 | 755.0 | 51.4 | 10.8 | 48 | SW | | | 4 | | 7 | | | | | | Prof. Dr. Hoh. |
| Breslau | 29.29 | 743.9 | 29.82 | 757.3 | 51.1 | 10.6 | 69 | S | | | 4 | | 10 | | | 0.220 | 5.6 | Raining | Prof. Arndt. |
| Carlsruhe | 29.45 | 748.1 | 29.89 | 759.2 | 43.3 | 6.3 | 98 | N | | | 1 | | 10 | | | 0.022 | 0.56 | | Royal University Obs'y |
| Cassel | 29.20 | 741.6 | 29.80 | 757.0 | 52.2 | 11.2 | 56 | W | | | 2 | | 5 | SW | | 1.610 | 40.9 | Raining | Albert Senz. |
| Crefeld | 29.62 | 752.3 | 29.78 | 756.4 | 48.2 | 9.0 | 58 | W | | | 5 | | 8 | | | 0 | 0 | | Dr. H. Möhl. |
| Emden | 29.76 | 755.9 | 29.80 | 756.8 | 44.8 | 7.1 | 73 | NW | | | 1 | | 1 | | | 0.55 | 14. | | Director Lose. |
| Frankfort on the Main | 29.49 | 749.0 | 29.85 | 758.3 | 49.3 | 9.6 | 58 | SW | | | 2 | | 6 | | | 0.496 | 12.6 | | Prof. Prestel. |
| Friedrichshafen | 28.48 | 723.5 | 29.92 | 760.0 | 51.1 | 10.6 | 81 | SW | | | 6 | | 10 | WSW | | 0.319 | 8.1 | | Physical Society. |
| Hamburg | 29.61 | 752.1 | 29.68 | 753.9 | 44.6 | 7.0 | 89 | W | | | 3 | | 8K | | | 0.209 | 5.3 | Raining | M. Wilhelm. |
| Kiel | 29.62 | 752.4 | 29.64 | 752.8 | 46.0 | 7.8 | 71 | W | | | 6 | | 10 | | | 0.260 | 6.6 | Dust-haze | Captain F. Hegemann. |
| Königsberg, (Prussia) | 29.61 | 752.1 | 29.69 | 754.2 | 52.9 | 11.6 | 43 | S | | | 7 | | 8 | | | 0.344 | 8.73 | | Prof. G. Karsten. |
| Köslin | | | 29.52 | 749.9 | 47.8 | 8.8 | | SW | | | 6 | | 3 | | | 0 | 0 | | Prof. E Luther. |
| Leipsic, Observatory | 29.36 | 745.8 | 29.78 | 756.5 | 51.1 | 10.6 | 50 | SW | | | 5 | | 7 | W | | 0.028 | 0.7 | | H. Müller. |
| Memel, Naval School | 29.67 | 753.7 | 29.72 | 754.9 | 47.5 | 8.6 | 60 | S | | | 4 | | 10cs;n | | | | | Dust-haze | Prof. Bruhns. |
| Neufahrwasser | 29.64 | 752.8 | 29.65 | 753.2 | 46 6 | 8.1 | 86 | SSW | | | 6 | | 10 | | | 0.138 | 3.5 | Raining | Reinbrecht von Skalweit. |
| Posen | 29.49 | 749.0 | 29.78 | 756.4 | 48.6 | 9.2 | 84 | WSW | | | 8 | | 10 | | | 0.039 | 1.0 | | A. Lothes. |
| Strassburg Obs., (in Alsace | 29.34 | 745.2 | 29.90 | 759.4 | 43.7 | 6.5 | 95 | N | | | 3 | | 10 | NW | | 0.085 | 2.15 | Raining | Dr. Magener. |
| Stuttgart | 28.89 | 733.9 | 29.85 | 758.1 | 45.5 | 7.5 | 85 | N | | | 1 | | 10 | | | 0.346 | 8.8 | Raining | Dr. Schur. |
| Treves, (Trier) | 29.24 | 742.6 | 29.75 | 755.7 | 50.0 | 10.0 | 58 | S | | | 6 | | 7 | | | 0.002 | 0.05 | | Prof. Schoder. |
| Weissenburg, (Bavaria) | 28.34 | 719.8 | 29.84 | 758.0 | 46.4 | 8.0 | 93 | NW | 4 | 2 | | | 10 | | W | | | Raining | Prof. Flesch. |
| Wustrow, Naval School | 29.56 | 750.9 | 29.60 | 751.9 | 41.2 | 5.1 | 80 | W | | | 6 | | 6 | | | 0.303 | 7.7 | | Dr. Von Bebber. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | E. F. Schütz. |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.71 | 754.6 | 30.10 | 764.5 | 64.9 | 18.3 | | N | | | 1.5 | | | | | | | Clear. | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.81 | 757.1 | 29.86 | 758.4 | 79.9 | 26.6 | 66 | WSW | 31? | 13.4? | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.35 | 745.4 | 29.81 | 757.2 | 95.2 | 35.1 | 25 | WSW | | | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.78 | 756.4 | 29.82 | 757.4 | 83.5 | 28.6 | 71 | NW | 16 | 7.2 | | | 0 | | | 0.02 | 0.5 | Blue sky | |
| Poona | 27.80 | 706.1 | 29.79 | 756.6 | 81.4 | 27.4 | 57 | ESE | | | | | 8 | | SE | 0.53 | 13.5 | Thunder-storm | |
| Lahore | 29.06 | 738.1 | 29.80 | 756.8 | 84.5 | 29.2 | 18 | NW | 4.0 | 1.8 | | | 2 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.30 | 693.3 | 29.79 | 756.8 | 83.9 | 28.8 | 67 | W | 10 | 4.5 | | | 3 | | E | 0 | 0 | D. clouds | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.85 | 732.8 | 29.74 | 755.3 | 84.8 | 29.3 | 23 | SW | 2.7 | 1.2 | | | 4 | | | 0 | 0 | | |
| Agra | 29.21 | 741.9 | 29.76 | 755.9 | 91.7 | 33.2 | 32 | NW | | | | | | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.81 | 731.8 | 29.86 | 758.4 | 78.6 | 25.9 | 70 | S | 6.6 | 2.9 | | | 8 | | E | 0.02 | 0.5 | Gloomy | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.38 | 746.2 | 29.74 | 755.4 | 90.4 | 32.4 | 50 | WSW | 6.4 | 2.8 | | | 7 | | | 0 | 0 | Misty | |
| Allahabad | 29.43 | 747.5 | 29.73 | 755.2 | 93.1 | 33.9 | 30 | W | 3.5 | 1.6 | | | 10 | | | 0 | 0 | D. clouds | |
| Patna | 29.52 | 749.9 | 29.70 | 754.3 | 95.6 | 35.3 | 11 | W | 1.9 | 0.8 | | | 7 | | | 0 | 0 | D. clouds | |
| Hazaribagh | 27.77 | 705.3 | 29.74 | 755.4 | 87.6 | 30.9 | 21 | W | 11 | 4.9 | | | 4 | W | W | 0 | 0 | D. clouds | |
| Cuttack | 29.74 | 755.4 | 29.82 | 757.5 | 82.1 | 27.8 | 67 | N | 3.3 | 1.4 | | | 10 | | W | 0 | 0 | | |
| Calcutta (Alipore) | 29.69 | 754.1 | 29.71 | 754.6 | 89.6 | 32.0 | 43 | WNW | 1 | 0.4 | | | 10 | | | 0.06 | 1.5 | Drizzling | |
| Goalpara | 29.26 | 743.2 | 29.64 | 752.9 | 85.0 | 29.4 | 49 | Calm | 1.5 | 0.7 | | | 5 | S | W | 0 | 0 | D. clouds | |
| Chittagong | | | | | | | | | | | | | 3 | W | | 0 | 0 | D. clouds | |
| Sibsagar | 29.35 | 745.6 | 29.69 | 754.1 | 75.7 | 24.3 | 78 | NE | 3.3 | 1.4 | | | 6 | SW | | 1.48 | 37.6 | D clouds | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.46 | 722.8 | 29.60 | 757.0 | 88.5 | 31.4 | 32 | W | 6.4 | 2.8 | | | 8 | W | | 0 | 0 | Overcast | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0-10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.64 | 752.9 | 30.06 | 763.4 | 54.5 | 12.5 | 63 | N | 0.7 | 0.3 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 29.94 | 760.4 | 30.05 | 763.2 | 55.4 | 13.0 | 72 | ENE | 1.8 | 0.8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.85 | 758.2 | 30.04 | 763.1 | 55.4 | 13.0 | 66 | NE | 1.3 | 0.6 | ..... | ..... | 7 | W | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.72 | 729.6 | 30.05 | 763.2 | 55 0 | 12.8 | 47 | SSW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.55 | 750.5 | 30.08 | 763.9 | 54.3 | 12.4 | ..... | E | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0.035 | 0.9 | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.15 | 740.3 | 30.06 | 763.5 | 54.3 | 12.4 | 57 | ESE | 2.5 | 1.1 | ..... | ..... | 9 | N | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 28.13 | 714.4 | 30.05 | 763.3 | 51.3 | 10.7 | 88 | SE | ..... | ..... | 2 | ..... | 7 | S | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.85 | 758.3 | 30.08 | 764.0 | 60.8 | 16.0 | 64 | SSE | ..... | ..... | 2 | ..... | 6 | W | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.92 | 760.0 | 30.09 | 764.3 | 56.5 | 13.6 | 75 | SE | 8.1 | 3.6 | ..... | ..... | 10 | SE | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.77 | 756.2 | 30.09 | 764.3 | 55.9 | 13.3 | 70 | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.82 | 757.4 | 30.08 | 763.9 | 63.5 | 17.5 | 46 | NW | ..... | ..... | 2 | ..... | 9 | S | ..... | 0 | 0 | ..... | Cav. F Meucci. |
| Leghorn | 30.01 | 762.3 | 30.10 | 764.5 | 59.2 | 15.1 | 71 | SW | 8.1 | 3.6 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 30.02 | 762.6 | 30.08 | 763.9 | 58.8 | 14.9 | 55 | E | 6.3 | 2.8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.54 | 724.8 | 30.16 | 764.5 | 54.5 | 12.5 | 62 | SW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 30.02 | 762.4 | 30.13 | 765.2 | 62.6 | 17.0 | 59 | SSE | ..... | ..... | 4 | ..... | 6 | S | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.96 | 761.0 | 30.14 | 765.5 | 63.0 | 17.2 | 52 | S | 11.2 | 5.0 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U | 30.01 | 762.3 | 30.21 | 767.4 | 62.2 | 16.8 | 62 | SSW | ..... | ..... | 2 | ..... | 5 | S | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 60.1 | 15.6 | 56 | N | 1.8 | 0.8 | ..... | ..... | 1 | ..... | ..... | 0.028 | 0.7 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.80 | 756 9 | 29.99 | 761.7 | 68.0 | 20.0 | 55 | SE | ..... | ..... | 2 | ..... | 4 | W | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.32 | 744.8 | 30.21 | 767.3 | 64.0 | 17.8 | 71 | NE | 1.8 | 0.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.87 | 758.8 | 30.13 | 765.2 | 58.6 | 14.8 | 70 | NE | 6.9 | 3.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 30.09 | 764.3 | 30.17 | 766 2 | 67.3 | 19.6 | 50 | SE | ..... | ..... | 4 | ..... | 4 | SSE | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.65 | 753.1 | 30.21 | 767.2 | 58.1 | 14.5 | 67 | SW | 2.5 | 1.1 | ..... | ..... | 3 | W | ..... | 0 | 0 | ..... | Prof. F. Brioschi |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 30.07 | 763.8 | 30.14 | 765.5 | 44.3 | 6.8 | 96 | NE | 3.5 | 1.6 | ..... | ..... | 10n | ..... | ..... | 0.215 | 5.46 | Light rain... | The Observatory. |
| Tokei (Yeddo) University | 30.01 | 762.2 | 30.12 | 764.9 | 46.3 | 7.9 | 88 | N | 2.5 | 1.1 | ..... | ..... | 10n | ..... | ..... | 0.16 | 4.1 | Light rain... | Prof. P. V. Veeder. |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | L. Castillo, A. E. |
| Guadalajara | 25.01 | 635.3 | 30.08 | 764.2 | 65.3 | 18.5 | 44 | N | 0.9 | 0.4 | ..... | 6c | 0 | NW | ..... | 0 | 0 | ½ cloudy.... | L. Castillo, A. E. |
| Guanajuato | 23.63 | 600.4 | 29.86 | 758.4 | 42 4 | 5 8 | 47 | SE | 0.9 | 0.4 | ..... | 0 | 9 | ..... | SE | 0 | 0 | Cloudy..... | Prof. L. Perez. |
| Leon | ..... | ..... | ..... | ..... | 60.1 | 15 6 | 43 | Calm | 0 | 0 | ..... | 0 | 4 | ..... | W | 0 | 0 | Clear..... | Prof. V. Fernandez |
| Mexico | 23.07 | 585.9 | 29.64 | 752 9 | 52.3 | 11.3 | 64 | NW | 0.9 | 0.4 | ..... | 10c | 0 | SW | ..... | 0 | 0 | Covered ..... | Prof. M. Leal. |
| Orizaba | ..... | ..... | ..... | ..... | 55.4 | 13.0 | 56 | Calm | 0 | 0 | ..... | 6ck | 1s | W | W | 0 | 0 | Cloudy..... | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Puebla | ..... | ..... | ..... | ..... | 46.9 | 8.3 | 43 | N | 1.8 | 0.8 | ..... | 1c | 0 | SW | ..... | 0 | 0 | Clear. ..... | M. V. de Leon, M. E. |
| Toluca | 23.27 | 591.1 | 30.00 | 762 0 | 46.4 | 8.0 | 78 | NE | 12.7 | 5.7 | ..... | 5ck | 4sn | SW | ..... | 0 | 0 | Cloudy..... | Prof. B. Gonzalez. |
| Tlacotalpam | 30.04 | 762.9 | 30.05 | 763 2 | 68.0 | 20.0 | 86 | Calm | 0 | 0 | ..... | 0 | 10k | ..... | SW | 0 | 0 | Threatening | Prof. C. Velazquez. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. F. R. Bayly. |
| Vera-Cruz | 30.07 | 763.8 | 30.10 | 764.5 | 70.7 | 21.5 | 70 | NW | ..... | ..... | ..... | 0 | 9sk | ..... | ..... | 0 | 0 | Very cloudy | G. Barroeta, M. D. |
| Zacatecas | ..... | ..... | ..... | ..... | 49.1 | 9.5 | 52 | N | 5.6 | 2.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Prof. J. Rossell. |
| Puebla, (Catholic Institute) | 23.25 | 593 1 | 30.12 | 765 1 | 45 5 | 7.5 | 63 | ESE | 2.0 | 0.9 | ..... | 1c | 7ck | SW | W | 0 | 0 | Cloudy.. .... | J. A. Bonilla, M. E. |
| Morelia | 24.01 | 609.5 | ..... | ..... | 53.6 | 12.0 | 79 | S | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Sl'tly hazy. | P. Spina. [M. M. D. D |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Tena, F. L. Param. |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,591.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,135 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.84 | 758.0 | 29.84 | 758.0 | 47.5 | 8.6 | ..... | W | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0.197 | 5.0 | ..... | |
| Groningen | 29.69 | 754.2 | 29.75 | 755.6 | 44.2 | 6.8 | ..... | NW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.520 | 13.2 | ..... | |
| Helder | 29.76 | 755.8 | 29.76 | 755 8 | 44.4 | 6.9 | ..... | W | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.039 | 1.0 | ..... | |
| Hellevoetsluis | 29.80 | 756.8 | 29.80 | 754 8 | 46.2 | 7.9 | 77 | WNW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.76 | 755.9 | 29.81 | 757.1 | 50.4 | 10.2 | 72 | WSW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | H. v d Brink. |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.54 | 750.3 | 29.50 | 751.7 | 41.7 | 5.4 | 82 | SSE | 4.0 | 1.8 | ..... | ..... | 8 | ..... | ..... | 0.102 | 2.6 | Rain & fog.. | |
| Brönö | 29.50 | 749.4 | 29.54 | 750.4 | 44.2 | 6.8 | 38 | S | 18 | 8 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.45 | 748.1 | 29.60 | 751.9 | 37.8 | 3.2 | 73 | ENE | 7 | 3 | ..... | ..... | 10 | ..... | ..... | 0.181 | 4.6 | ..... | |
| Tromsö | 29.60 | 751.7 | 29.64 | 752.8 | 42.1 | 5.6 | 46 | S | 4 | 2 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.41 | 747.1 | 29.61 | 752.0 | 61.2 | 16.2 | 92 | SSW | 4.9 | 2.2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Dr. J. A. Sampaio. |
| Campo Major | 28.95 | 735.3 | 29.97 | 761.1 | 67.1 | 19.5 | 45 | SSW | 5.6 | 2.5 | ..... | ..... | 7 | SW | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 29.90 | 759.5 | 29.99 | 761.7 | 67.5 | 19.7 | 68 | WSW | 6.3 | 2.8 | ..... | ..... | 1 | ..... | ..... | 0.398 | 10.1 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.63 | 752.7 | 30.00 | 761.9 | 58.8 | 14.9 | 73 | WSW | 7.4 | 3.3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 29.60 | 751.8 | 29.67 | 753.6 | 63.0 | 17.2 | 88 | S | 16.8 | 7.5 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Mozambique, Mozambique | 29.75 | 755.6 | 29.76 | 755.8 | 85.1 | 29.5 | ..... | S | ..... | ..... | 5 | ..... | 3 | ..... | S | 2 | ..... | D. clouds | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Rio Douro, S. 25° 58′, E. 32° 37′ | ..... | ..... | 30.19 | 766.8 | 80.6 | 27.0 | ..... | SE | ..... | ..... | 3 | ..... | 1 | ..... | SE | 2 | SE | D. clouds | J. T. d'Oliveria, Com'd't. |
| Sado, Porto Praya, Cape Verde Islands | 30.08* | 764.0* | 30.09* | 764.3* | 80.6 | 27.0 | ..... | NE | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 3 | NE | Blue sky | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.69 | 754.0 | 29.69 | 754.1 | ..... | ..... | ..... | W | ..... | ..... | 3 | ..... | 6 | ..... | NW | 1 | ..... | Blue sky | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreira, dos Amas, Com' |

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.41 | 747.1 | 29.83 | 757.7 | 57.4 | 14.1 | 89 | S | 18 | 8 | ..... | ..... | 9c;ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.62 | 749.7 | 29.94 | 760.4 | 50.4 | 10.2 | 65 | SE | 2 | 1 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 29.75 | 755.7 | 30.00 | 762.1 | 41.5 | 5.3 | 74 | SE | 7 | 3 | ..... | ..... | 9n;ks | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.02 | 762.4 | 30.03 | 762.8 | 38.8 | 3.8 | 92 | S | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.57 | 751.0 | 29.90 | 759.4 | 36.0 | 2.2 | 98 | S | 7 | 3 | ..... | ..... | 10[ks;n | ..... | ..... | ..... | ..... | ..... | Ch. Forsten. |
| Kieff | 29.30 | 744.3 | 29.93 | 760.3 | 54.0 | 12.2 | 55 | SE | 11 | 5 | ..... | ..... | 10c; ck; | ..... | ..... | Blank | Blank | ..... | Physical Cabinet. |
| Nikolaiev | 29.87 | 755.6 | 29.94 | 760.4 | 59.7 | 15.4 | 57 | S | 4 | 2 | ..... | ..... | 2k | ..... | ..... | ..... | ..... | ..... | Kurdukof. |
| Kertch | 29.94 | 760.4 | 29.96 | 760.9 | 60.1 | 15.6 | 77 | NE | 7 | 3 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.76 | 755.8 | 30.33 | 770.3 | 38.8 | 3.8 | 93 | S | 9 | 4 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.79 | 756.7 | 29.99 | 761.8 | 55.4 | 13.0 | 55 | ESE | 18 | 8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 30.18 | 766.6 | 30.20 | 767.1 | 46.6 | 8.1 | 52 | SSE | 13 | 6 | ..... | ..... | 8k | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.63 | 727.1 | 30.03 | 762.8 | 60.8 | 16.0 | 60 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.32 | 770.0 | 30.23 | 767.9 | 59.2 | 15.1 | 46 | ESE | 13 | 6 | ..... | ..... | 2k | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Krotkowo* | 29.99 | 761.8 | 30.47 | 773.9 | 55.8 | 13.2 | 37 | ESE | 7 | 3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Oand. Fatjanow. |
| Kasan | 30.23 | 767.7 | 30.50 | 774.7 | 53.8 | 12.1 | 41 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 29.47 | 748.5 | 30.42 | 772.6 | 55.0 | 12.8 | 21 | NNW | 4 | 2 | ..... | ..... | 8c;ck | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.84 | 758.0 | 30.08 | 763.9 | 56.1 | 13.4 | 82 | NNW | 7 | 3 | ..... | ..... | 9k | ..... | ..... | ..... | ..... | Light clouds | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Tashkend | 28.54 | 724.9 | 30.28 | 769.2 | 47.5 | 8.6 | 96 | N | 4 | 2 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Barnaul | 29.54 | 750.4 | 30.08 | 763.9 | 41.9 | 5.5 | 68 | Calm | 0 | 0 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Raining | Michelson. |
| Yeniseisk | 29.59 | 751.6 | 29.93 | 760.2 | 20.7 | — 6.3 | 79 | NW | 4 | 2 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Marks. |
| Peking, (China) | 30.10 | 764.5 | 30.24 | 768.1 | 47.1 | 8.4 | 18 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Nertchinsk | 27.78 | 705.7 | 29.96 | 760.9 | 19.6 | — 6.9 | 70 | NW | 4 | 2 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | Physical Observatory.. |
| Vladivostock | 29.78 | 756.4 | 29.88 | 758.9 | 33.6 | 0.9 | 43 | W | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 30.0 | 10.0 | 77 | NE | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.84 | 757.9 | 29.95 | 760.6 | 60.8 | 16 | 64 | S | 3.3 | 1.47 | ..... | 3c | 1k | SW | ..... | 0 | 0 | Light halo | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.89 | 759.2 | 29.95 | 760.6 | 61.5 | 16.4 | 71 | SW | 1.7 | 0.74 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.00 | 685.9 | ..... | ..... | 60.4 | 15.8 | 63 | S | 8.9 | 3.98 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.72 | 704.1 | 29.90 | 759.5 | 65.5 | 18.6 | 48 | W | 11.9 | 5.34 | ..... | 0 | 9 | ..... | ..... | 0 | 0 | Almost cov. | The Staff. |
| Murcia, Met. Obs'y | 29.80 | 756.9 | 29.95 | 760.6 | 80.8 | 27.1 | 44 | NW | 2.5 | 1.11 | ..... | 3 | 5 | ENE | ..... | 0.055 | 1.4 | Raining | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.01 | 736.8 | 29.90 | 759.5 | 55.4 | 13.0 | 82 | SSW | 9.3 | 4.17 | ..... | ..... | 10 | ..... | ..... | 0.016 | 0.4 | Rainy | R. Gil Villanueva, Dir |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.77 | 756.3 | 29.84 | 757.9 | 75.6 | 24.2 | 61 | NW | 10.7 | 4.8 | ..... | 0 | 2ks | ..... | ..... | 0.232 | 5.9 | Clear | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 29.97 | 761.1 | 30.07 | 763.7 | 65.1 | 18.4 | 73 | SSW | 18.0 | 8.1 | ..... | 0 | 6 | ..... | WSW | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.82 | 757.4 | 29.91 | 759.7 | 79.9 | 26.6 | 76 | S | 2.5 | 1.13 | ..... | 2k | 0 | S | ..... | 0 | 0 | Clear | Leonardo de Tejeda, Chief of Engineers. |

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATION. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'r 1–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.85 | 758.3 | 29.89 | 759.3 | 39.2 | 4.0 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.78 | 756.4 | 29.83 | 757.7 | 37.0 | 2.8 | 79 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.004 | 0.1 | ..... | |
| Hernosand | 29.67 | 753.5 | 29.72 | 754.8 | 34.2 | 1.2 | 94 | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.043 | 1.1 | ..... | |
| Stockholm | 29.44 | 747.8 | 29.62 | 752.3 | 38.1 | 3.4 | 92 | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | |
| Wisby | 29.48 | 748.7 | 29.64 | 750.2 | 37.0 | 2.8 | 93 | SSE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.87 | 758.8 | 29.95 | 760.7 | 39.2 | 4.0 | 87 | ESE | 11.9 | 5.3 | ..... | ..... | 10 | ..... | SE | 0.287 | 7.31 | Raining | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.63 | 724.7 | 29.97 | 761.2 | 50.7 | 10.4 | 75 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.083 | 2.1 | Covered | The Observatory. |
| Zurich | 28.30 | 718.7 | 29.95 | 760.7 | 49.1 | 9.5 | 86 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.433 | 11.0 | Raining | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +0.5 mm.; Thermometer, +0.1 cent.; Relative Humidity, +7 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.04 | 763.1 | 51.6 | 10.9 | 48 | ENE | 8 | 3.5 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanides. |
| Valona | ..... | ..... | 30.22 | 767.5 | 56.8 | 13.8 | ..... | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | A. Bertrand. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.90 | 759.4 | 30.01 | 762.3 | 68.9 | 20.5 | 61 | WSW | ..... | ..... | 1 | ..... | 1s | ..... | SW | 0 | 0 | D. clouds | Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.48 | 748.8 | 29.79 | 756.7 | 42 | 5.6 | ..... | NE | 8 | 3.6 | ..... | 0 | 2s | ..... | NE | 0 | 0 | Clear | W. R. Bigg. |
| *Chatham, N B | 29.70 | 754.4 | 29.76 | 755.9 | 34 | 1.1 | 92 | N | 9 | 4.0 | ..... | ..... | 10n | ..... | N | 0.12 | 3.0 | Light rain | G. A. Blair. |
| Charlottetown, P. E. Island | 29.56 | 750.8 | 29.61 | 752.1 | 33 | 0.6 | 98 | N | 16 | 7.2 | ..... | ..... | 10n | ..... | Calm | 0.100 | 2.54 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.55 | 750.6 | 29.74 | 755.4 | 37.4 | 3.0 | 79 | E | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0 | 0 | Overcast | James Smith, M. A. |
| Dalhousie, N. B | 29.79 | 756.7 | 29.82 | 757.4 | 35 | 1.7 | 97 | NW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | Snowing | H. A. Johnson. |
| Esquimault, B. C | 30.00 | 762.0 | 30.14 | 765.5 | 46.3 | 7.9 | 100 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | W. H. Bevis. |
| *Father Point, Quebec | 29.86 | 758.4 | 29.88 | 758.9 | 32 | 0.0 | 95 | E | 22 | 9.8 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | J. McWilliams. |
| Fredericton, N. B | 29.68 | 753.9 | 29.75 | 755.6 | 35.1 | 1.7 | 80 | N | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | 0.28 | 7.1 | Light rain | Prof. Harrison. |
| *Fort Garry Manitoba | 28.80 | 733.0 | 29.70 | 754.4 | 43 | 6.1 | 79 | NW | 10 | 4.5 | ..... | Haze | Haze | ..... | ..... | 0 | 0 | Hazy | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.61 | 726.7 | 29.72 | 754.9 | 39 | 3.9 | 73 | E | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Grant. |
| *Halifax, N. S | 29.36 | 745.7 | 29.60 | 749.3 | 37 | 2.8 | 88 | N | 17 | 7.6 | ..... | ..... | 8ks | ..... | N | 0.019 | 0.48 | Fair | F. Allison, M. A. |
| Hamilton, Ontario | 29.38 | 746.2 | 29.75 | 755.6 | 38.2 | 3.4 | 85 | NE | ..... | ..... | 1 | 0 | ..... | ..... | ..... | 0 | 0 | Clear | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.38 | 746.2 | 29.41 | 747.0 | 45 | 7.2 | 100 | SE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 2.27 | 57.7 | Raining | E. Weedon. |
| *Kingston, Ontario | 29.40 | 746.7 | 29.74 | 755.4 | 42 | 5.6 | 72 | NE | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.47 | 748.5 | 29.51 | 749.5 | 33 | 0.6 | ..... | N | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0.64 | 16.3 | Raining | C. H. Rigby. |
| *Montreal, Quebec | 29.67 | 751.1 | 29.77 | 756.1 | 39 | 3.9 | 70 | E | 14 | 6.3 | ..... | 8k | 2s | E | ..... | 0 | 0 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.07 | 738.4 | 29.78 | 756.4 | 38 | 3.3 | 50 | NE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Rev. R. Mosley. |
| Peterboro, Ontario | 29.00 | 736.6 | 29.76 | 755.9 | 42 0 | 5.6 | 53 | NE | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Bright | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.09 | 736.6 | 29.70 | 754.4 | 42 | 5.6 | 76 | NE | 13 | 5.8 | ..... | 2c | 0 | S | ..... | 0 | 0 | Fair | H. Morgan. |
| Port Hastings, N. S | 29.44 | 747.8 | 29.49 | 749.0 | 32.4 | 0.2 | ..... | NW | 4 | 1.8 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Foggy | Peter Grant. |
| Port Stanley, Ontario | 29.06 | 738.1 | 29.71 | 754.6 | 44 | 6.7 | 64 | NE | 12 | 5.4 | ..... | 2ck | 0 | N | ..... | 0 | 0 | Clear | M. Payne. |
| *Quebec, Quebec | 29.50 | 749.3 | 29.53 | 757.7 | 33 | 0.6 | 80 | NE | ..... | ..... | 6 | ..... | 10n | ..... | NE | 0 | 0 | Cloudy | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.33 | 745.0 | 29.80 | 756.9 | 37 | 2.8 | 62 | NW | 4 | 1.8 | ..... | 2c | 0 | NW | ..... | 0 | 0 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 29.62 | 752.3 | 29.67 | 753.6 | 35 | 1.7 | 87 | NE | 8 | 3.6 | ..... | ..... | 10n | ..... | ..... | 0.30 | 7.6 | Cloudy | Dr. Gove. |
| St. John, N. B | 29.50 | 749.3 | 29.66 | 753.4 | 34 | 1.1 | 100 | NE | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | 0.120 | 3.05 | Gloomy | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.03 | 737.3 | 29.76 | 755.9 | 38 | 3.3 | 67 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | K. Stewart. |
| Stayner, Ontario | 28.97 | 735.8 | 29.77 | 756.1 | 36 | 2.2 | 57 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | R. J. Cole. |
| Stratford, Ontario | 28.43 | 722.1 | 29.72 | 754.9 | 40.0 | 4.4 | 69 | E | 5 | 2.2 | ..... | 4cs;ck | 0 | ..... | ..... | 0 | 0 | Clear | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.45 | 748.0 | 29.48 | 748.8 | 37 | 2.8 | 98 | N | 9 | 4.0 | ..... | ..... | 10n | ..... | ..... | 0.62 | 15.7 | Light rain | T. C. Hill. |
| *Toronto, Ontario | 29.34 | 745.2 | 29.72 | 754.9 | 44 | 6.7 | 64 | NE | 4 | 1.8 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | Magnetic Observatory. |
| Windsor, N. S | 29.49 | 749.0 | 29.58 | 751.3 | 34.5 | 1.4 | 90 | N | 18 | 8.0 | ..... | 10k | ..... | ..... | ..... | 0.11 | 2.8 | Fair | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 37.0 | 2.8 | 100 | NE | ..... | ..... | ..... | 5 | 5n | ..... | ..... | 2.30 | 58.4 | Foggy | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.44 | 747.8 | 29.66 | 753.4 | 38 | 3.3 | 81 | NW | 4 | 1.8 | ..... | 8cs | 2s | NE | Calm | 0 | 0 | Cloudy | |
| Alpena, Michigan | 29.14 | 740.1 | 29.78 | 756.4 | 40 | 4.4 | 47 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Atlantic City, New Jersey | 29.54 | 750.3 | 29.56 | 750.8 | 45 | 7.2 | 92 | NE | 22 | 9.8 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Threatening | |
| Augusta, Georgia | 29.31 | 744.5 | 29.49 | 749.0 | 52 | 11.1 | 79 | NW | 6 | 2.7 | ..... | ..... | 10ks | ..... | NW | 0.84 | 21.3 | Cloudy | |
| Baltimore, Maryland | 29.50 | 749.3 | 29.54 | 750.3 | 49 | 9.4 | 78 | NE | 6 | 2.7 | ..... | ..... | 10ks | ..... | NW | 0 | 0 | Cloudy | |
| Barnegat, New Jersey | 29.55 | 750.6 | 29.57 | 751.1 | 45 | 7.2 | 84 | E | 22 | 9.8 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Bismarck, Dakota | 27.93 | 709.4 | 29.79 | 756.7 | 46 | 7.8 | 54 | NW | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Boise City, Idaho | 27.15 | 689.6 | 30.03 | 762.7 | 47 | 8.3 | 77 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boston, Massachusetts | 29.54 | 750.3 | 29.70 | 754.4 | 42 | 5.6 | 67 | NE | 12 | 5.4 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Brackettville, Texas | 28.94 | 735.1 | 29.99 | 761.7 | 48 | 8.9 | 56 | Calm | 0 | 0 | ..... | 5c | 0 | SW | ..... | 0 | 0 | Fair | |
| Breckenridge, Minnesota | 28.83 | 732.3 | 29.83 | 757.7 | 39 | 3.9 | 64 | S | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Brownsville, Texas | 30.00 | 762.0 | 30.07 | 763.8 | 56 | 13.3 | 93 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 28.95 | 735.3 | 29.64 | 752.8 | 41 | 5.0 | 66 | NE | 7 | 3.1 | ..... | 1c | 0 | NE | ..... | 0 | 0 | Clear | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 63 | 17.2 | 33 | S | ..... | ..... | 1 | 5k | 0 | SW | ..... | 0 | 0 | Fair | |
| Burlington, Vermont | 29.49 | 749.0 | 29.75 | 755.6 | 38 | 3.3 | 81 | N | 8 | 3.6 | ..... | 10k | 0 | SE | ..... | 0 | 0 | Cloudy | |
| Cairo, Illinois | 29.23 | 742.4 | 29.61 | 752.1 | 49 | 9.4 | 71 | NW | 18 | 8.0 | ..... | ..... | 10s | ..... | Calm | 0.12 | 3.0 | Cloudy | |
| Camp Grant, Arizona | 25.18 | 639.6 | 29.98 | 761.5 | 55 | 12.8 | 22 | NE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | 26.78 | 680.2 | 30.26 | 768.6 | 45 | 7.2 | 68 | NW | ..... | ..... | 1 | 10c | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Campo, California | 27.26 | 692.4 | 29.83 | 757.7 | 40 | 4.4 | 83 | E | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Cape Hatteras, N. Carolina | 29.26 | 743.2 | 29.26 | 743.2 | 51 | 10.6 | 93 | NE | 40 | 17.9 | ..... | 8k | 0 | NE | ..... | 2.41 | 61.2 | Fair | |
| Cape Henry, Virginia | 29.41 | 747.0 | 29.44 | 747.8 | 47 | 8.3 | 85 | NE | 48 | 21.5 | ..... | ..... | 10n | ..... | NE | 1.35 | 34.3 | Heavy rain | |
| Cape Lookout, N. Carolina | 29.34 | 745.2 | 29.36 | 745.7 | 52 | 11.1 | 79 | NE | 38 | 17.0 | ..... | ..... | 10s | ..... | NE | 1.81 | 46 0 | Cloudy | |
| Cape May, New Jersey | 29.51 | 749.5 | 29.54 | 750.3 | 46 | 7.8 | 92 | NE | 16 | 7.2 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Charleston, South Carolina | 29.41 | 747.0 | 29.48 | 748.8 | 55 | 12.8 | 81 | W | 5 | 2.2 | ..... | ..... | 10s | ..... | W | 0.54 | 13.7 | Cloudy | |
| Cheyenne, Wyoming | 24.01 | 609.8 | 29.95 | 760.7 | 35 | 1.7 | 61 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.07 | 738.4 | 29.76 | 755.9 | 41 | 5.0 | 74 | N | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Cincinnati, Ohio | 29.86 | 758.4 | 29.49 | 749.0 | 48 | 8.9 | 56 | N | 8 | 3.6 | ..... | 8k | 0 | E | ..... | Inap. | Inap. | Fair | |
| Cleveland, Ohio | 28.90 | 734.0 | 29.63 | 752.6 | 41 | 5.0 | 74 | NE | 2 | 0.9 | ..... | 8ck | Sm'e | Calm | Calm | 0 | 0 | Fair | |
| Concho, Texas | 28.15 | 715.0 | 29.90 | 759.4 | 43 | 6.1 | 75 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.56 | 750.8 | 30.04 | 763.0 | 43 | 6.1 | 67 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Davenport, Iowa | 29.21 | 741.9 | 29.85 | 758.2 | 40 | 4.4 | 56 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Deadwood, Dakota | 25.32 | 643.1 | ..... | ..... | 34 | 1.1 | 79 | S | 1 | 0.4 | ..... | 5k | 0 | S | ..... | 0 | 0 | Fair | |
| Denison, Texas | 29.21 | 741.9 | 30.03 | 762.7 | 44 | 6.7 | 52 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denver, Colorado | 24.77 | 629.2 | 29.99 | 761.7 | 36 | 2.2 | 61 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Detroit, Michigan | 29.00 | 736.6 | 29.66 | 753.4 | 43 | 6.1 | 61 | NE | 11 | 4.9 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Dodge City, Kansas | 27.44 | 697.0 | 29.82 | 757.4 | 31 | — 0.6 | 89 | W | 8 | 3.6 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.15 | 740.4 | 29.86 | 758.4 | 40 | 4.4 | 56 | N | 3 | 1.3 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Duluth, Minnesota | 29.20 | 741.7 | 29.90 | 759.4 | 31 | — 0.6 | 69 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Eagle Pass, Texas | 29.38 | 746.2 | 30.14 | 765.5 | 50 | 10.0 | 79 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 29.58 | 751.3 | 29.65 | 753.1 | 36 | 2 2 | 80 | N | 19 | 8.5 | ..... | ..... | 10s | ..... | N | 0.01 | 0.3 | Cloudy | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 60 | 15.6 | 48 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 28.91 | 734.3 | 29.61 | 752.1 | 42 | 5.6 | 83 | NE | 4 | 1.8 | ..... | 5c | 0 | ..... | ..... | 0 | 0 | Fair | |
| Escanaba, Michigan | 29.21 | 741.9 | 29.88 | 758.9 | 35 | 1.7 | 61 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Florence, Arizona | 28.24 | 717.3 | 29.84 | 757.9 | 54 | 12.2 | 51 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | 24.12 | 612.6 | 30.12 | 765.0 | 42 | 5.6 | 42 | N | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.50 | 647.7 | ..... | ..... | 41 | 5.0 | 57 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.29 | 642.4 | 30.25 | 768.3 | 54 | 12.2 | 62 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.38 | 746.2 | 29.94 | 760.5 | 40 | 4.4 | 73 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | |
| Fort Griffin, Texas | 28.77 | 730.7 | 30.08 | 764.0 | 40 | 4.4 | 72 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.25 | 742.9 | 29.28 | 743.7 | 26 | — 3.3 | 100 | E | 5 | 2.2 | ..... | ..... | 10s | ..... | E | Inap. | Inap. | Cloudy | |
| Fort Sill, Indian Territory | 28.82 | 732.0 | 29.96 | 761.0 | 42 | 5.6 | 58 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Galveston, Texas | 29.97 | 761.2 | 30.01 | 762.2 | 54 | 12.2 | 61 | NW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.12 | 739.6 | 29.77 | 756.1 | 43 | 6.1 | 36 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianapolis, Indiana | 28.80 | 731.5 | 29.57 | 751.1 | 46 | 7.8 | 47 | N | 8 | 3.6 | ..... | 0 | 8s | ..... | NE | 0 | 0 | Cloudy | |
| Indianola, Texas | 30.06 | 763.5 | 30.08 | 764.0 | 53 | 11.7 | 67 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.93 | 734.8 | 30.11 | 764.8 | 38 | 3.3 | 63 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Jacksonville, Florida | 29.51 | 749.5 | 29.54 | 750.3 | 63 | 17.2 | 62 | W | 12 | 5.4 | ..... | c | 0 | ..... | ..... | 0.63 | 16.0 | Clear | |
| Keokuk, Iowa | 29.17 | 740.9 | 29.79 | 756.7 | 45 | 7.2 | 61 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Key West, Florida | 29.75 | 755.6 | 29.79 | 756.7 | 73 | 22.8 | 63 | NW | 21 | 9.4 | ..... | 8ck;k | 0 | sW;NW | ..... | 0.23 | 5.8 | Fair | |
| Kittyhawk, North Carolina | 29.27 | 743.4 | 29.29 | 744.0 | 50 | 10.0 | 86 | NE | 51 | 22.8 | ..... | 2k | 0 | W | ..... | 2.30 | 58.4 | Fair | |
| Knoxville, Tennessee | 28.48 | 723.4 | 29.46 | 748.5 | 45 | 7.2 | 92 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | SW | 0.83 | 21.1 | Light rain | |
| La Crosse, Wisconsin | 29.13 | 739.9 | 29.88 | 758.9 | 36 | 2.2 | 80 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| La Mesilla, New Mexico | 26.07 | 662.2 | 30.22 | 767.6 | 43 | 6.1 | 67 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.65 | 753.1 | 29.99 | 761.7 | 53 | 11.7 | 67 | NE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 29.08 | 738.6 | 29.94 | 760.5 | 37 | 2.8 | 81 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Los Angeles, California | 29.54 | 750.3 | 29.87 | 758.7 | 51 | 10.6 | 76 | N | 4 | 1.8 | ..... | 0 | 8s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Louisville, Kentucky | 28.92 | 734.6 | 29.46 | 748.3 | 49 | 9.4 | 57 | N | 9 | 4.0 | ..... | ..... | 10s | ..... | NE | 0.29 | 7.4 | Cloudy | |
| Lynchburg, Virginia | 28.86 | 733.0 | 29.53 | 750 0 | 45 | 7.2 | 76 | NE | 10 | 4.5 | ..... | ..... | 10n | ..... | Calm | 0.65 | 16.5 | Light rain | |
| Marquette, Michigan | 29.17 | 740.9 | 29.88 | 758.9 | 37 | 2.8 | 53 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mason, Texas | 28.43 | 722.1 | 30.26 | 768.6 | 42 | 5.6 | 66 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.33 | 745.0 | 29.64 | 752.8 | 47 | 8.3 | 85 | NW | 16 | 7.2 | ..... | ..... | 10s | ..... | NW | 0.40 | 10.2 | Cloudy | |
| Milwaukee, Wisconsin | 29.08 | 738.6 | 29.82 | 757.4 | 38 | 3.3 | 72 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | Inap | Inap. | Clear | |
| Mobile, Alabama | 29.69 | 754.1 | 29.73 | 755.1 | 52 | 11.1 | 50 | W | 11 | 4.9 | ..... | 1k | 2s | NW | NW | 0 | 0 | Fair | |
| Montgomery, Alabama | 29.37 | 746.0 | 29.80 | 751.8 | 51 | 10.6 | 64 | W | 12 | 5.4 | ..... | ..... | 10ks | ..... | W | 0 | 0 | Cloudy | |
| Morgantown, West Virginia | 28.49 | 723.6 | 29.53 | 750.0 | 41 | 5.0 | 74 | Calm | 0 | 0 | ..... | 10c | Haze | SW | ..... | 0 | 0 | Cloudy | |
| Mt. Washington, N. H. | 23.42 | 594.9 | 29.78 | 756.4 | 27 | — 2.8 | 66 | NE | 24 | 10.7 | ..... | 2ck | 8s | W | NE | 0 | 0 | Fair | |
| Nashville, Tennessee | 28.91 | 734.3 | 29.44 | 747.8 | 48 | 8.9 | 85 | W | 3 | 1.3 | ..... | ..... | 10s | ..... | W | 0.50 | 12.7 | Cloudy | |
| New Haven, Connecticut | 29.53 | 750.0 | 29.65 | 753.1 | 41 | 5.0 | 87 | NE | 10 | 4.5 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| New London, Connecticut | 29.60 | 751.8 | 29.65 | 753.1 | 45 | 7.2 | 76 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| New Orleans, Louisiana | 29.77 | 756.1 | 29.83 | 757.7 | 53 | 11.7 | 54 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Newport, Rhode Island | 29.60 | 751.8 | 29.66 | 753.4 | 45 | 7.2 | 76 | NE | 4 | 1.8 | ..... | ..... | 10ks | ..... | N | 0 | 0 | Cloudy | |
| New York, New York | 29.46 | 748.3 | 29.63 | 752.6 | 44 | 6.7 | 75 | NE | 16 | 7.2 | ..... | ..... | Fog | ..... | NE | 0 | 0 | Foggy | |
| Norfolk, Virginia | 29.10 | 740.7 | 29.46 | 748.3 | 45 | 7.2 | 92 | NE | 20 | 8.9 | ..... | ..... | 10n | ..... | NE | 0.77 | 19.6 | Heavy rain | |
| North Platte, Nebraska | 27.10 | 688.3 | 29.73 | 755.1 | 36 | 2.2 | 80 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 30.00 | 762.0 | 30.04 | 763.0 | 44 | 6.7 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Dense fog | |
| Omaha, Nebraska | 28.86 | 733.0 | 29.96 | 761.0 | 37 | 2.8 | 71 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Oswego, New York | 29.38 | 746.2 | 29.70 | 754.4 | 44 | 6.7 | 60 | SE | 2 | 0.9 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Pembina, Dakota | 28.81 | 731.8 | 29.64 | 752.8 | 41 | 5.0 | 74 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Philadelphia, Pennsylvania | 29.53 | 750.0 | 29.58 | 751.3 | 45 | 7.2 | 76 | NE | 14 | 6.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Phœnix, Arizona | 28.71 | 729.2 | 30.50 | 774.7 | 56 | 13.3 | 57 | S | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.75 | 450.8 | 29.96 | 761.0 | 8 | —13.3 | 55 | N | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Pioche, Nevada | 24.03 | 610.4 | 29.80 | 756 9 | 43 | 6.1 | 51 | SW | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Pittsburg, Pennsylvania | 28.74 | 730.0 | 29.53 | 750.0 | 43 | 6.1 | 67 | NE | 1 | 0.4 | ..... | 2c | Fog | Calm | Calm | 0 | 0 | Fair | |
| Port Huron, Michigan | 29.02 | 737.1 | 29.68 | 753.9 | 39 | 3.9 | 82 | N | 12 | 5.4 | ..... | 10cs | 0 | W | ..... | 0 | 0 | Cloudy | |
| Portland, Maine | 29.68 | 753 9 | 29.73 | 755 1 | 45 | 7.2 | 68 | NE | 8 | 3.6 | ..... | 10k | Haze | NW | ..... | 0 | 0 | Cloudy | |
| Portland, Oregon | 29.94 | 760.5 | 30.04 | 763.0 | 55 | 12.8 | 80 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Prescott, Arizona | 24.73 | 628.1 | 30.09 | 764.3 | 38 | 3.3 | 63 | S | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Punta Rassa, Florida | 29.71 | 754 6 | 29.73 | 755.1 | 71 | 21.7 | 58 | W | 30 | 13.4 | ..... | 5k | 5s | SW | SW | 0.65 | 16.5 | Cloudy | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Red Bluff, California | 29.53 | 750.0 | 29.89 | 759.2 | 53 | 11.7 | 87 | NW | 2 | 0.9 | ..... | Haze | 2s | Calm | Calm | 0 | 0 | Fair | |
| Rochester, New York | 29.04 | 737.6 | 29.64 | 752.8 | 44 | 6.7 | 76 | NE | 7 | 3.1 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Roseburg, Oregon | 29.40 | 746.7 | 29.97 | 761.2 | 49 | 9.4 | 96 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sacramento, California | 29.80 | 756.9 | 29.88 | 758.9 | 54 | 12.2 | 80 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.16 | 740.7 | 29.74 | 755.4 | 45 | 7.2 | 76 | NW | 12 | 5.4 | ..... | 0 | 5s | ..... | ..... | 0.01 | 0.3 | Fair | |
| St. Marks, Florida | 29.62 | 752.3 | 29.64 | 752.8 | 53 | 11.7 | 67 | W | 6 | 2.7 | ..... | 0 | 5s | ..... | W | 0.06 | 1.5 | Fair | |
| St. Paul, Minnesota | 29.03 | 737.3 | 29.88 | 758.9 | 34 | 1.1 | 70 | W | 6 | 2.7 | ..... | 1cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.63 | 651.0 | 29.96 | 761.0 | 47 | 8.3 | 55 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Antonio, Texas | 29.39 | 746.5 | 29.99 | 761.7 | 48 | 8.9 | 70 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Diego, California | 29.84 | 757.9 | 29.91 | 759.7 | 53 | 11.7 | 93 | NE | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 28.98 | 736.1 | 29.65 | 753.1 | 41 | 5.0 | 82 | E | 18 | 8.0 | ..... | 8cs;k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Sandy Hook, New Jersey | 29.61 | 752.1 | 29.63 | 752.6 | 45 | 7.2 | 84 | NE | 17 | 7.6 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| San Francisco, California | 29.80 | 756.9 | 29.86 | 758.4 | 56 | 13.3 | 81 | W | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | Inap | Inap. | Cloudy | |
| Santa Fé, New Mexico | 23.29 | 591.6 | 29.83 | 757.7 | 35 | 1.7 | 61 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 29.37 | 746.0 | 29.46 | 748.3 | 60 | 15.6 | 82 | N | 5 | 2.2 | ..... | 2k | 0 | W | ..... | 0.42 | 10.7 | Fair | |
| Shreveport, Louisiana | 29.68 | 753.9 | 29.90 | 759.4 | 47 | 8.3 | 62 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 29.41 | 747.0 | 29.44 | 747.8 | 51 | 10.6 | 93 | N | 4 | 1.8 | ..... | ..... | 10s | ..... | N | 1.23 | 31.2 | Cloudy | |
| Springfield, Massachusetts | 29.46 | 748.3 | 29.59 | 751.6 | 46 | 7.8 | 62 | N | 4 | 1.8 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Stockton, Texas | 27.01 | 686.0 | 30.01 | 762.2 | 45 | 7.2 | 60 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.64 | 752.8 | 29.70 | 754.4 | 44 | 6.7 | 76 | E | 12 | 5.4 | ..... | 2cs | 8s | E | E | 0 | 0 | Cloudy | |
| Toledo, Ohio, | 28.96 | 735.6 | 29.63 | 752.6 | 44 | 6.7 | 76 | NE | 14 | 6.3 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 47 | 8.3 | 85 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tybee Island, Georgia | 29.43 | 747.5 | 29.46 | 748.3 | 57 | 13.9 | 87 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.67 | 17.0 | Clear | |
| Umatilla, Oregon | 29.66 | 753.4 | ..... | ..... | 49 | 9.4 | 93 | SE | 6 | 2.7 | ..... | 0. | 0 | ..... | ..... | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.53 | 750.0 | 29.79 | 756.7 | 51 | 10.6 | 59 | W | 18 | 8.0 | ..... | 10k | 0 | W | ..... | 0 | 0 | Cloudy | |
| Virginia City, Montana | 24.29 | 617.0 | 29.77 | 756.1 | 42 | 5.6 | 50 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Visalia, California | 29.51 | 749.5 | 29.88 | 758.9 | 48 | 8.9 | 70 | Calm | 0 | 0 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Washington, D. C. | 29.48 | 748.8 | 29.59 | 751.6 | 47 | 8.3 | 85 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Threatening | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 46 | 7.8 | 54 | SE | ..... | ..... | 1 | 2ck | 0 | Calm | ..... | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 29.33 | 745.0 | 29.41 | 747.0 | 50 | 10.0 | 93 | NE | 7 | 3.1 | ..... | ..... | 10s | ..... | NE | 1.09 | 27.7 | Cloudy | |
| Winnemucca, Nevada | 25.61 | 650.5 | 29.97 | 761.2 | 44 | 6.7 | 60 | NE | 10 | 4.5 | ..... | 0 | 5s | ..... | S | 0 | 0 | Fair | |
| Wood's Holl, Mass | 29.61 | 752.1 | 29.66 | 753.4 | 46 | 7.8 | 69 | N | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Yankton, Dakota | 28.68 | 728.5 | 30.02 | 762.5 | 28 | — 2.2 | 77 | W | 1 | 0.4 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| Yuma, Arizona | 29.64 | 752.8 | 29.80 | 756.9 | 61 | 16.1 | 44 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 29.28 | 743.7 | 29.34 | 745.2 | 37.0 | 2.8 | 95 | SW | 10 | 4.5 | ..... | 3cs | 0 | NW | ..... | 0.20 | 5.1 | Fair | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 29.80 | 756.9 | 29.82 | 757.4 | 76 | 24.4 | 59 | NW | 13.2 | 5.9 | ..... | 4ck | 4n | W | NW | 0.21 | 5.3 | Clearing | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 29.97 | 761.2 | 29.98 | 761.5 | 80 | 26.7 | 86 | SE | 6 | 2.7 | ..... | 2k | 0 | SE | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.80 | 756.9 | 29.88 | 758.9 | 82 | 27.8 | ..... | SE | 10 | 4.5 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | 29.96 | 761.0 | 29.96 | 761.0 | 81 | 27.2 | 87 | E | ..... | ..... | 2 | ..... | 8ks | ..... | ..... | 0.350 | 8.89 | Cloudy | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.21 | 640.3 | ..... | ..... | 69.8 | 21.0 | 88 | Calm | ..... | ..... | 0 | ..... | 10ks;s | ..... | ..... | 0.62 | 15.7 | ..... | Thomas Herran. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,560 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho,

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 1—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.83 | 757.7 | 55 | 12 8 | 55 | 12.8 | 87 | SSW | 13 | 5.8 | ..... | ..... | 8 | ..... | SW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Navy Yard, Pensacola, Fla. | 29.76 | 755.9 | 50 | 10.0 | 52 | 11.1 | 86 | NNW | 23 | 10.3 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Navy Yard, Portsmouth, N.H. | 29.80 | 756.9 | 79 | 26.1 | 44 | 6.7 | 68 | NE | 6 | 2.7 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Naval Hospital, Yokohama, Japan | 30.03* | 762.7* | 57 | 13.9 | 45.8 | 7.7 | 92 | N | ..... | ..... | 4 | ..... | 10n | ..... | NNE | 0.16 | 4.1 | ..... | ..... | Light rain.... | |
| Adams. Panama | 29.89 | 759.2 | 82 | 27.8 | 81 | 27.2 | 87 | NNW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | Smooth | ..... | Misty..... | |
| Alliance, Naples, Italy | 30.20‡ | 767.1‡ | ..... | ..... | 60 | 15.6 | 94 | W | ..... | ..... | 2 | ..... | 3 | ..... | E | ..... | ..... | Light | W | Pleasant.... | |
| Ashuelot. Shanghai, China | 30.33 | 770.4 | 48 | 8.9 | 48 | 8.9 | 85 | NNE | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Raining..... | |
| Canonicus, New Orleans, La. | 29.80 | 756.9 | 44 | 6.7 | 54 | 12.2 | 62 | W | ..... | ..... | 5 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Colorado, New York, N. Y. | 29.60‡ | 751.8‡ | ..... | ..... | 45 | 7.2 | 84 | NE | 4 | 1.8 | ..... | ..... | 8 | ..... | NE | 0 | 0 | ..... | ... .... | Hazy..... | |
| Constellation, N. 41° 20′ W. 59° 36′ | 29.54‡ | 750.3‡ | ..... | ..... | 42 | 5.6 | 91 | N | ..... | ..... | 5 | ..... | 10 | ..... | N | ..... | ..... | Mod'ate | N | Drizzling..... | |
| Constitution, Havre, France | 29.80‡ | 756.9‡ | ..... | ..... | 47 | 8.2 | 85 | WSW | ..... | ..... | 1 | ..... | 4 | ..... | Calm | ..... | ..... | ..... | ..... | Fair..... ..... | |
| Despatch, Constantinople, Turkey | 30.08‡ | 764.0‡ | ..... | ..... | 52 | 11.1 | 60 | N | ..... | ..... | 1 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Enterprise, N. 30° 48′, W. 79° 26′ | 29.49‡ | 749.0‡ | ..... | ..... | 68 | 20.0 | 79 | W | ..... | ..... | 5 | ..... | 8 | ..... | W | ..... | ... .... | Rough | W | Fair..... | |
| Franklin, Norfolk, Va. | 29.67 | 753.6 | 60 | 15.6 | 54 | 12.2 | 87 | ENE | 11 | 4.9 | ..... | ..... | 8 | ..... | ENE | 1. | 25. | ..... | ..... | Rainy..... | |
| Gettysburg Valetta, Malta | 30.15‡ | 765.8‡ | ..... | ..... | 69 | 20.6 | 100 | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear ..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.08 | 764.0 | 76 | 24.4 | 75 | 23.9 | 77 | NE | ..... | ..... | 2 | ..... | 2 | ..... | NE | ..... | ..... | Smooth | ..... | Clear..... | |
| Hartford, Montevideo, Uraguay | 30.05 | 763.3 | 68 | 20.0 | 68 | 20.0 | 70 | ENE | 13 | 5.8 | ..... | ..... | 5 | ..... | ENE | ..... | ..... | Smooth | ..... | Fair ..... | |
| Marion, Smyrna, Turkey | 30.02 | 762.5 | 64 | 17.8 | 60 | 15.6 | 71 | NW | ..... | ..... | 3 | ..... | 8 | ..... | N | 0 | 0 | Smooth | ..... | Fair..... | |
| Michigan, Erie, Pa. | 29.15 | 740.4 | 61 | 16.1 | 43 | 6.1 | 75 | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ... .... | Clear. ..... | |
| Monocacy. Shanghai, China | 30.17‡ | 766.3‡ | ..... | ..... .. | 46 | 7.8 | 77 | NE | ..... | ..... | 1–2 | ..... | 10 | ..... | NW | ..... | ..... | ..... | ..... | Overcast..... | |
| New Hampshire, Port Royal, S. C. | 29.64 | 752.8 | 56 | 13.3 | 56 | 13.3 | 94 | W | 11 | 4.9 | ..... | ..... | 8 | ..... | W | 0.75 | 19.1 | ..... | ..... | Cloudy..... | |
| Omaha, St. Thomas, W. I. | 30.00* | 762.0* | 82 | 27.8 | 82 | 27.8 | 71 | S | 2 | 0.9 | ..... | ..... | 2 | ... | S | 0 | 0 | Smooth | ..... | Bright ..... | |
| Onward, Callao, Peru | 30.01† | 762.2† | ..... | ..... | 71 | 21.7 | 85 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty.... ..... | |
| Ossipee, Pensacola, Fla. | 29.75‡ | 755.6‡ | ..... | ..... | 54 | 12.2 | 61 | W | ..... | ..... | 3 | ..... | 8 | ..... | W | ..... | ..... | ..... | ..... | Cloudy..... | |
| Palos, Shanghai, China | 30.39* | 771.9* | 57 | 13.9 | 47 | 8.3 | 77 | ENE | ..... | ..... | 3 | ..... | 10 | ..... | N&E | ..... | ..... | ..... | ..... | Rainy..... | |
| Pensacola, Honolulu, H. I. | 30.23 | 767.8 | 76 | 24.4 | 70 | 21.1 | 75 | NE | 2 | 0.9 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Plymouth. Norfolk, Va. | 29.48‡ | 748.8‡ | ..... | ..... | 48 | 8.9 | 85 | ENE | ..... | ..... | 5 | ..... | 10 | .... | ENE | ..... | ..... | ..... | ..... | Misty..... | |
| Powhatan, Norfolk, Va. | 29.50‡ | 749.3‡ | ..... | ..... | 49 | 9.4 | 100 | ENE | 9.6 | 4.3 | ..... | ..... | 10 | .. ..... | ENE | 0.37 | 0.4 | ..... | ..... | Rainy..... | |
| Ranger. Amoy, China | 30.27* | 768.8* | ..... | ..... | 63 | 17.2 | 89 | ENE | ..... | ..... | 1–2 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | D. clouds..... | |
| Rio Bravo, Brownsville, Texas | 29.97 | 761.2 | 57 | 13.9 | 57 | 13.9 | 100 | N | ..... | ..... | 2 | ..... | 1 | ..... | N | ..... | ..... | ..... | ..... | Clear..... | |
| Santee, Annapolis, Md. | 29.62‡ | 752.3‡ | ..... | ..... | 48 | 8.9 | 70 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Overcast .... | |
| Saratoga, Washington, D. C. | 29.55* | 750.6* | ..... | ..... | 50 | 10.0 | 93 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| St. Louis, League Island, Pa | 29.56 | 750.8 | 60 | 15.6 | 48 | 8.9 | 85 | N | 12 | 5.4 | ..... | ..... | 8 | ..... | NW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Supply, Havre, France | 29.89 | 759.2 | 53 | 11.7 | 50 | 10.0 | 72 | WSW | ..... | ..... | 2 | ..... | 2 | ..... | SW | ..... | ..... | ..... | ..... | Clear..... | |
| Swatara, Aspinwall | 29.93 | 760.2 | 82 | 27.8 | 80 | 26.7 | 91 | SSE | ..... | ..... | 1 | ..... | 0 | .... ... | ..... | ..... | ..... | ..... | ..... | Clear. ..... | |
| Tennessee, N. 9° 37′ E 64° 16′ | 29.89* | 759.2* | 86 | 30.0 | 84 | 28.9 | 75 | NE | 2 | 0.9 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | Mod'ate | SSE | D. clouds.... | |
| Trenton, N. 37° 24′ 19″, E. 18° 35′ | 30.23‡ | 767.8‡ | ..... | ..... | 62 | 16.7 | 77 | NW | ..... | ..... | 2–3 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Hazy..... | |
| Tuscarora, N. 23° 33′, W. 109° 20′ | 29.69 | 754.1 | 70 | 21.1 | 72 | 22.2 | 71 | SSE | .... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |
| Vandalia, Villefranche, France | 30.03‡ | 762.7‡ | ..... | ..... | 63 | 17.2 | 57 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | SSW | .... ... | ..... | Long | SSW | Cloudy..... | |
| Wabash, Boston, Mass | 29 72‡ | 754.9‡ | ..... | ..... | 45 | 7.2 | 84 | NE | 8 | 3.6 | ..... | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Cloudy..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | Character. | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ——————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Peking, N. 37° 11′, W. 135° 29′ | | | 30.35† | 770.9† | 50 | 10.0 | 93 | NNW | 29.5 | 13.2 | | | 9 | | NNW | Small | NNW | D. clouds | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, N. 36° 27′, E. 139° 39′ | | | | | 47 | 8.3 | | NNE | | | 6 | | 10 | | | | | Overcast | Capt. Maury. |
| S. S. Colima, N. 13° 53′, W. 90° 49′ | | | 29.87† | 758.7† | 84 | 28.9 | 87 | Calm | | | 0 | | 7 | | Calm | Mod'ate | SW | Misty | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic, N. 51° 10′, W. 15° 33′ | | | 29.68* | 758.9* | | | | NW | | | 5 | | 9 | | NW | Light | NW | Clear | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. W. H. Thompson. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. *Aneroid; corrected for elevation; instrumental error not known.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, N. 40° 10′, W. 148° 14′ | | | 30.22* | 767.6* | | | | SSE | | | 4 | | Heavy | | SSE | Smooth | | D. clouds | Capt. John Metcalf. |
| S. S. Gaelic, Hong-Kong, China | | | 30.05† | 763.3† | 66 | 18.9 | 89 | SE | | | 3 | | | | | | | Misty | Capt. W. H. Kidley |
| S. S. Oceanic, N. 35° 02′, E. 168° 03′ | | | 30.36 | 771.1 | 53 | 11.7 | 73 | SW | | | 2 | | 7 | | WNW | | NNW | D. clouds | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Anero id.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg, N. 28° 29′, W. 53° 07′ | | | 29.79 | 756.7 | 71.0 | 21.7 | 71 | WNW | | | 5 | | k | | WNW | Rough sea. | NW | Fine | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAME OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | Character | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois, N. 42° 20', W. 58° 43' | | | 29.27* | 743.4* | 47 | 8.3 | 100 | Calm | | | 0 | | | | | Smooth | | Foggy | Captain Shackelford. |
| S. S. Indiana, St. George's Channel | | | 29.99* | 759.4* | 49 | 9.4 | 85 | NNW | | | 3 | | 0 | | | Smooth | | Clear | Captain Sargent. |
| S. S. Ohio, Philadelphia, Pa | | | 29.58 | 751.3 | 49 | 9.4 | 85 | NE | | | 2 | | 10 | | Calm | | | Dull | Captain Morrison. |
| S. S. Pennsylvania | | | | | | | | | | | | | | | | | | | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Corrected for temperature and elevation, instrumental error not known.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RED STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland, N. 48° 35', W. 24° | | | 29.92* | 760.0* | | | | ENE | 12 | 5.4 | | | 5 | | SE | Mod'ate | N | D. clouds | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

*Aneroid; regulated to standard at Antwerp.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ALLAN LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
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| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| S. S. Scandinavian, N. 46° 26', W. 41° 58' | | | 29.28 | 743.7 | 58 | 14.4 | | ENE | | | 8 | | 10 | | ENE | High | ENE | Overcast | Capt. W. Richardson. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MARINE SERIES.** (Miscellaneous.) | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller, Crisfield, Md. | | | 29.48 | 748.8 | 53 | 11.7 | 100 | NE | 3 | 1.3 | | | 10n | | | | | Raining | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13', W. 67° 19' | | | 30.09 | 764.3 | — 5 | —20.6 | 93 | NNE | 2.2 | 1.0 | | | 10ks | | W | | | Cloudy | O. T. Sherman. |
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NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assd.) Chief Signal Officer, U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 5, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

## ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.09 | 764.3 | 64.9 | 18.3 | 81 | SW | ..... | ..... | 1 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Dr. Ollive. |
| Nemours | ..... | ..... | 30.03 | 762.8 | 69.3 | 20.7 | 61 | ENE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Michel. |
| Algiers | ..... | ..... | 29.98 | 761.6 | 75.2 | 24.0 | 39 | WNW | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Towiliere. |
| La Calle | ..... | ..... | 30.00 | 761.9 | 65.7 | 18.7 | 61 | ENE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair | Boulangeot. |
| Tunis | ..... | ..... | 30.02 | 762.4 | 80.4 | 26.9 | 39 | WSW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0 | 0 | Covered | Jacques. |
| Sfax | ..... | ..... | 30.12 | 765.0 | 68.0 | 20.0 | ..... | W | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0 | 0 | Very cloudy | Gau. |
| Saida | ..... | ..... | 30.11 | 764.9 | 73.8 | 23.2 | ..... | E | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Herbin. |
| Tebessa | ..... | ..... | 30.11 | 764.9 | ..... | ..... | ..... | W | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Watrin. |
| Geriville | ..... | ..... | 30.18 | 766.5 | 65.5 | 18.6 | 83 | S | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair | Lemaillot. |
| Laghouat | ..... | ..... | 30.17 | 766.4 | 78.8 | 26.0 | 18 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Bertrand. |
| Biskra | ..... | ..... | 30.11 | 764.9 | 85.1 | 29.5 | 24 | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

## AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.42 | 747.2 | 29.96 | 761.0 | 61.3 | 16.3 | 51 | SW | ..... | ..... | 5 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.19 | 741.5 | 29.96 | 760.9 | 57.6 | 14.2 | 74 | NE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbiski. |
| Eperies | 29.11 | 739.4 | 29.98 | 761.6 | 56.8 | 13.8 | 65 | SE | ..... | ..... | 1 | ..... | 7c;s | ..... | N | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.66 | 727.9 | 29.89 | 759.2 | 60.3 | 15.7 | 48 | SW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.61 | 726.7 | 30.01 | 762.3 | 58.3 | 14.6 | 40 | ESE | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.48 | 723.4 | 29.80 | 756.9 | 58.3 | 14.6 | 55 | NE | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner |
| Lemberg | 29.02 | 737.1 | 30.00 | 762.0 | 57.2 | 14.0 | 59 | S | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Dr. T. Stanecki. |
| Pola | 29.91 | 759.7 | 30.02 | 762.6 | 56.7 | 13.7 | 81 | SSE | ..... | ..... | 3 | ..... | 10s | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | 29 60 | 751.9 | 30.06 | 763.5 | 63.5 | 17.5 | 40 | SE | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.70 | 754.3 | 29.97 | 761.3 | 61.9 | 16.6 | 50 | S | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Karl Stancel. |
| Trieste | 29.95 | 760.7 | 30.05 | 763.3 | 54.1 | 12.3 | 96 | NNW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.409 | 10.4 | Raining | P. Busin. |
| Vienna | 29.18 | 741.1 | 29.88 | 759.0 | 60.4 | 15 8 | 46 | SE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

## BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.38 | 720.9 | 29.90 | 759.5 | 47.1 | 8.4 | 58 | NW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.051 | 1.3 | ..... | Prof. M. Passau. |
| Brussels | 29.68 | 753.9 | 29.88 | 759.0 | 49.8 | 9.9 | 54 | W | ..... | ..... | 1 | ..... | 5 | ..... | SW | 0.055 | 1.4 | ..... | Royal Observatory. |
| Furnes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.004 | 0.1 | Light rain | M. E. de Cae. |
| Maeseyck | 29.76 | 755.9 | 29.89 | 759.1 | 46.2 | 7.9 | 75 | NNE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4? eet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

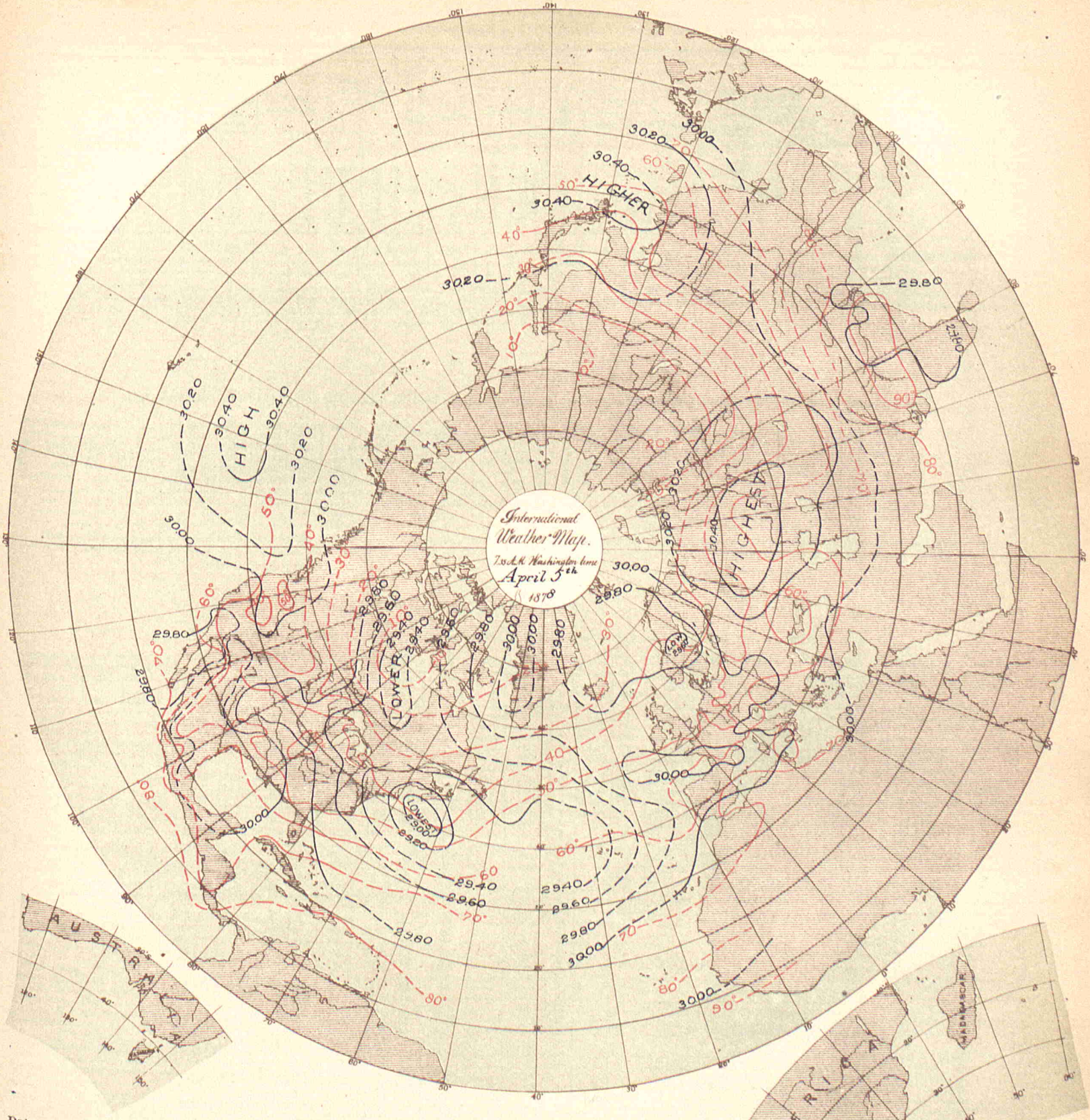
| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.77 | 756.1 | 29.87 | 758.7 | 44.2 | 6.8 | ..... | NNW | 9 | 4.0 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | Blue sky..... | W. B swell. |
| Ardrossan | 29.84 | 757.9 | 29.85 | 758.2 | 47 | 8.3 | ..... | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.91 | 759.7 | 47.9 | 8.8 | ..... | NE | 4 | 1.8 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.88 | 758.9 | 45.9 | 7.7 | ..... | NW | 10 | 4.5 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 29.94 | 760.5 | 45.9 | 7.7 | ..... | W | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | J. L. E. Dreyer. |
| Bradford, Yorkshire | 29.44 | 747.8 | 29.83 | 757.7 | 45.1 | 7.3 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.90 | 759.4 | 29.93 | 760.2 | 83.0 | 28.3 | ..... | E | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.87 | 758.7 | 44.4 | 6.9 | ..... | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | H. Todd. [H. C. |
| Cardington | ..... | ..... | 29.87 | 758.7 | 47.0 | 8.3 | ..... | NW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | Overcast..... | John McLaren. |
| Chatham, School M. E | 29.74 | 755.4 | 29.87 | 758.7 | 49.2 | 9.6 | ..... | S | ..... | ..... | 1 | ..... | 5 | ..... | ..... | Blank | Blank | D. clouds..... | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.40 | 721.3 | 29.90 | 759.4 | 41.0 | 5.0 | ..... | W | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | Snowing..... | Alexander Watt. |
| Donaghadee | 29.86 | 758.4 | 29.89 | 759.2 | 46 | 7.8 | ..... | WNW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 29.86 | 758.4 | 29.88 | 758.9 | 44 | 6.7 | ..... | W | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.85 | 758.2 | 44.9 | 7.2 | ..... | NW | ..... | ..... | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Threatening | Thomas Mackereth. |
| Falmouth, Observatory | 29.75 | 755.6 | 29.98 | 761.5 | 49.2 | 9.6 | ..... | WNW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff. |
| Fort Napier, (Natal) | 27.81 | 706.4 | 30.00 | 762.0 | 89.8 | 32.1 | ..... | E | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.72 | 754.9 | 29.94 | 760.5 | 90 | 32.2 | ..... | NW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's College | ..... | ..... | 29.87 | 758.7 | 49 | 9.4 | ..... | W | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.97 | 761.2 | 30.02 | 762.5 | 70.0 | 21.1 | ..... | W | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Corpl. Wm. Allen, A. H. C. |
| Glasgow, Observatory | 29.65 | 753.1 | 29.86 | 758.4 | 46.4 | 8.0 | ..... | WSW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | D. G. Maclean. |
| Great Yarmouth | 29.82 | 757.4 | 29.82 | 757.4 | 45 | 7.2 | ..... | SSE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | Misty..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.70 | 754.4 | 29.87 | 758.7 | 45.6 | 7.6 | ..... | NW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | The Staff, for G. B. Airy. |
| Guernsey | 29.72 | 754.9 | 29.94 | 760.5 | 51 | 10.6 | ..... | WSW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Dr. S. E. Hoskins, F. R. S. |
| Helston | ..... | ..... | 29.95 | 760.7 | 52 | 11.1 | ..... | W | ..... | ..... | 4 | ..... | 2c | ..... | ..... | 0.06 | 1.5 | Fine..... | M. P. Moyle. |
| Holyhead | 29.87 | 758.7 | 29.93 | 760.2 | 45 | 7.2 | ..... | WNW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | John Tilston. |
| Jersey | 29.71 | 754.6 | 30.01 | 762.2 | 49.0 | 9.4 | ..... | W | ..... | ..... | 3 | ..... | 1 | ..... | ..... | Blank | Blank | D. clouds..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 29.87 | 758.7 | 47.0 | 8.3 | ..... | W | 10 | 4.5 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Threatening | The Staff. |
| Kingstown | 29.88 | 758.9 | 29.91 | 759.7 | 44 | 6.7 | ..... | NE | ..... | ..... | 3 | ..... | 7 | ..... | ..... | Blank | Blank | D. clouds..... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.86 | 758.4 | 47.0 | 8.3 | ..... | SW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Wm. J. Harrison, F. G. S. |
| Malta, (Mediterranean) | 30.02 | 762.5 | 30.09 | 764.3 | 63.4 | 17.4 | ..... | SE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Sgt. Fred. Travis, A. H. |
| Nairn | 29.72 | 754.9 | 29.82 | 757.4 | 48 | 8.9 | ..... | W | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ¾ clouded... | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 29.84 | 757.9 | 69.8 | 21.0 | ..... | NW | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 29.67 | 753.6 | 29.86 | 758.4 | 50.2 | 10.1 | ..... | SW | ..... | ..... | 1 | ..... | 9ks;k | ..... | WSW | 0.011 | 0.28 | D. clouds..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.32 | 741.7 | 29.85 | 758.2 | 46.5 | 8.1 | ..... | NNW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.88 | 758.9 | 44 | 6.7 | ..... | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Mr. Lucas. |
| Plymouth | 29.86 | 758.4 | 29.94 | 760.5 | 52.5 | 11.4 | ..... | NW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | John Merrifield. |
| Roche's Point | 29.89 | 759.2 | 29.94 | 760.5 | 49 | 9.4 | ..... | N | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded.. | W. Kennedy. |
| Saint Ann's Head | 29.75 | 755.6 | 29.91 | 759.7 | 46 | 7.8 | ..... | WNW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | John C. Walker. |
| Sandwick Manse, (Orkneys. | ..... | ..... | 29.86 | 758.4 | 43 | 6.1 | ..... | W | 13 | 5.8 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 29.99 | 761.7 | 61.0 | 16.1 | ..... | N | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | Sergt. W. H. Lyne. |
| Sheffield | 29.55 | 750.6 | 29.84 | 757.9 | 43.9 | 6.6 | ..... | NNE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Showery .... | W. F. Cooper. |
| Silloth Rectory | 29.83 | 757.7 | 29.86 | 758.4 | 54.9 | 12.7 | 50 | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.47 | 748.5 | 29.87 | 758.7 | 45.0 | 7.2 | ..... | NW | ..... | ..... | 0 | ..... | 3 | ..... | ..... | ..... | ..... | Hazy..... | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 29.81 | 757.2 | 43 | 6.1 | ..... | NNW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded... | John Sutherland. |
| Stratfield Turgiss | 29.60 | 751.8 | 29.82 | 757.4 | 48.2 | 9.0 | ..... | W | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. C. H. Griffith, F. M. |
| Thurso | ..... | ..... | 29.83 | 757.7 | 46 | 7.8 | ..... | NW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 29.97 | 761.2 | 53 | 11.7 | ..... | NW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 29.95 | 760.7 | 48.1 | 8.9 | ..... | NW | ..... | ..... | 7 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.90 | 759.4 | 61.0 | 16.1 | 93 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear..... | Francis Abbott, F. R. A. S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.78 | 756.4 | 29.97 | 761.2 | 80.9 | 27.2 | 68 | SE | 19.5 | 8.7 | ..... | 0 | 2 | ..... | ESE | 0.02 | 0.5 | Squally..... | C. Meldrum. |
| Melbourne, Observatory | 30.05 | 763.3 | 30.14 | 765.5 | 58.6 | 14.8 | 78 | NNE | 6 | 2.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Very fine.... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft, or 670.6 m.

## MARINE SERIES.

| VESSELS. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|
| S. S. Algeria, N. 46° 10′ W. 42° 15′ | ..... | ..... | ..... | ..... |
| S. S. Batavia | 15* | ENE; SSW | Misty..... | Capt. W. Watson. |
| Ship Camperdown | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Brig Catherine | ..... | ..... | ..... | Capt. A. T. Miller. |
| Barque Celeste | ..... | ..... | ..... | Capt. Adam Smith. |
| S. S. Hibernia | ..... | ..... | ..... | Capt. D. F. McKechnie |
| Barque Maroon | ..... | ..... | ..... | Capt. W. R. Cato |
| Ship Mikado | ..... | ..... | ..... | Capt. A. T. Brown. |
| S. S. Peruvian, Off Cape Henry, Va | ..... | ..... | ..... | Capt. C. C. Prehn. |
| Royal Alice | 3 | WNW | D. clouds.... | [R. Capt. W. H. Smith, R. N. |
| S. S. Seine | ..... | ..... | ..... | Capt. E. M. Hughes. |
| Barque Sorata | ..... | ..... | ..... | Capt. H. Manning. |
| Schooner Traveller | ..... | ..... | ..... | Capt. Jas. J. Price. |
| S. S. Yorkshire, N. 47° 25′ W. 29° 50′ | ..... | ..... | ..... | Capt. Alex Simpson. |
| ..... | 7 | E | D. clouds..... | Capt. H. Longley. |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10 | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.23 | 666.2 | ..... | ..... | 70.2 | 21.2 | 82 | SE | ..... | ..... | 2 | 1ck | 6k;s | ..... | NE | 0 | 0 | ..... | Federico Maison. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.89 | 759.2 | 29.94 | 760.4 | 43.2 | 6.2 | 75 | S | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... |
| Fanöe | 29.89 | 759.2 | 29.91 | 759.7 | 44.1 | 6.7 | 69 | WSW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 30.06 | 763.5 | 30.10 | 764.6 | 21.0 | — 6.1 | 79 | ENE | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | 29.70 | 754.3 | 29.74 | 755.4 | 25.5 | — 3.6 | 93 | E | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Faröe) | 29.78 | 756.4 | 29.82 | 757.3 | 39.0 | 3.9 | 62 | NE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 29.73 | 755.1 | 29.90 | 759.4 | 45.0 | 7.2 | 83 | SW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.31 | 744.5 | 29.86 | 758.5 | 50.0 | 10 | 75 | W | ..... | ..... | 1 | ..... | 5 | ..... | W | 0 | 0 | Cloudy | Collignon, Director. |
| Amiens, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bonvarne, Director. |
| Avignon, Normal School | 29.94 | 760.5 | 30.02 | 762.5 | 66.2 | 19 | 51 | S | ..... | ..... | 1 | ..... | 2 | ..... | WNW | 0 | 0 | Slightly cl'dy | Mr. Giraud, Director |
| Bar-sur-Seine | 29.38 | 746.3 | 29.94 | 760.4 | 53.8 | 12.1 | 45 | Calm | ..... | ..... | 0 | ..... | 8kn | ..... | WSW | 0.673 | 17.1 | Very cloudy | C. Saillard. |
| Beaumette Obs'y (Angers) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Albert Cheux. |
| Beauvais | ..... | ..... | ..... | ..... | 50.9 | 10.5 | 39 | W | ..... | ..... | 2 | ..... | 5 | ..... | W | 0 | 0 | Cloudy | Normal School. |
| Besançon | 29.07 | 738.4 | 29.97 | 761.3 | 48.7 | 9.3 | 94 | SSW | ..... | ..... | 2 | ..... | 8 | ..... | W | 0.886 | 22.5 | Very cloudy | Normal School. |
| Bourg-en-Bresse | 29.10 | 739.2 | 30.02 | 762.4 | 53.1 | 11.7 | 85 | S | ..... | ..... | 4 | ..... | 10n | ..... | SW | 0.575 | 14.6 | Covered | Normal School. |
| Bourges, Normal School | 29.39 | 746.4 | 29.95 | 760.6 | 52.5 | 11.4 | 83 | W | ..... | ..... | 2 | ..... | 5 | ..... | W | 0.39 | 10. | Cloudy | A. Wagner, Director. |
| Brest, Naval Observatory | 29.71 | 754.7 | 29.93 | 760.3 | 57.0 | 13.9 | 50 | WNW | ..... | ..... | 2 | ..... | 4k | ..... | WNW | 0.049 | 1.25 | ..... | The Staff. |
| Carcassonne, Normal School | 29.57 | 751.1 | 29.98 | 761.4 | 69.8 | 21 | 54 | E | ..... | ..... | 2 | ..... | 2 | ..... | NW | 0 | 0 | Slightly cl'dy | Vateau, Director. |
| Caen | 29.87 | 758.7 | 29.95 | 760.6 | 50.4 | 10.2 | 72 | NW | ..... | ..... | 2 | ..... | 5 | ..... | W | 0 | 0 | Cloudy | Normal School. |
| Chartres, Normal School | 29.32 | 744.7 | 29.89 | 759.1 | 52.9 | 11.6 | 90 | S | ..... | ..... | 2 | ..... | 5 | ..... | E | 0.04 | 1. | ..... | Lequin, Director. |
| Châlons-sur-Marne, N. Sch' | 29.60 | 751.7 | 29.91 | 759.8 | 53.2 | 11.8 | 61 | Calm | ..... | ..... | 0 | ..... | 5k | ..... | ..... | 0 | 0 | Cloudy | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.58 | 725.8 | 29.92 | 759.9 | 57.4 | 14.1 | 57 | SW | ..... | ..... | 1 | ..... | 8 | ..... | W | 0.008 | 0.2 | Very cloudy | Alluard, Director. |
| Commercy, Normal School | 29.06 | 738.2 | 29.95 | 760.7 | 51.1 | 10.6 | 58 | NW | ..... | ..... | 2 | ..... | 5 | ..... | NW | 0.398 | 10.1 | Cloudy | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.91 | 734.3 | 30.05 | 763.3 | 64.4 | 18.0 | 47 | NW | ..... | ..... | 4 | ..... | 8 | ..... | NW | 0 | 0 | ¾ covered | M. Kina. |
| Grenoble | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| La Roche-sur-Yon, N. School | 29.91 | 759.6 | 30.12 | 765.0 | 56.5 | 13.6 | 52 | NW | ..... | ..... | 2 | ..... | 2 | ..... | NW | 0 | 0 | Slightly cl'dy | Mouillot, Director. |
| Le Mans, Normal School | 29.68 | 753.8 | 29.98 | 761.6 | 52.5 | 11.4 | 57 | E | ..... | ..... | 1 | ..... | 2 | ..... | E | 0.030 | 0.75 | Slightly cl'dy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.03 | 737.4 | 29.95 | 760.7 | 54.0 | 12.2 | 95 | SW | ..... | ..... | 2 | ..... | 10 | ..... | SE | 0.504 | 12.8 | Covered | Youdez, Director. |
| Lorient, Naval Observatory | 29.93 | 760.2 | 30.03 | 762.7 | 53.2 | 11.8 | 67 | W | ..... | ..... | 3 | ..... | 2 | ..... | W | 0.016 | 0.4 | ¼ covered | T. Carré, Director. |
| Mâcon, Normal School | 29.24 | 742.8 | 29.89 | 759.2 | 55.8 | 13.2 | 90 | S | ..... | ..... | 2 | ..... | 8 | ..... | N | 0.55 | 14. | Very cloudy | M. Marchal, Director. |
| Metz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Alluard, Director. |
| Mirecourt | 29.04 | 737.5 | 30.11 | 764.7 | 45.3 | 7.4 | 85 | NE | ..... | ..... | 1 | ..... | 1 | ..... | NE | 0.28 | 7. | Clear | Normal School. |
| Nismes, Normal School | 29.82 | 757.3 | 30.01 | 762.3 | 69.4 | 20.8 | 62 | W | ..... | ..... | 2 | ..... | 5 | ..... | W | 0.04 | 1. | Cloudy | Boyer, Director. |
| Orleans, Normal School | 29.52 | 749.7 | 29.89 | 759.3 | 63.5 | 17.5 | 75 | N | ..... | ..... | 1 | ..... | 8 | ..... | N | 0 | 0 | Very cloudy | Bernard, Director. |
| Paris, Observatory | 29.70 | 754.4 | 29.94 | 760.5 | 53.1 | 11.7 | 65 | SW | ..... | ..... | 1 | ..... | 9 | ..... | SW | 0 | 0 | Almost cov'd | National Observatory. |
| Privas | 28.89 | 733.8 | 29.96 | 760.9 | 53.6 | 12 | 75 | SW | ..... | ..... | 2 | ..... | 5 | ..... | SW | 0 | 0 | Cloudy | Normal School |
| Puy de Dome (Summit) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.02 | 762.6 | 30.06 | 763.4 | 60.8 | 16.0 | 66 | W | ..... | ..... | 3 | ..... | 10 | ..... | W | ..... | ..... | Raining | Lt. Decante, Director. |
| Rouen, Normal School | 29.86 | 758.5 | 29.95 | 760.7 | 55.9 | 13.3 | 45 | W | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | F. Lucard, Director. |
| Saint Malo (Port) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. H. Hercouet. |
| Tarbes, Normal School | 28.91 | 734.4 | 29.98 | 761.4 | 62.6 | 17 | 52 | WSW | ..... | ..... | 1 | ..... | 5 | ..... | W | 0 | 0 | Cloudy | T. Hugues, Director. |
| Villefranche | 29.19 | 741.3 | 29.90 | 759.4 | 55.9 | 13.3 | 90 | SE | ..... | ..... | 2 | ..... | 10 | ..... | W | 0.543 | 13.8 | Covered | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.76 | 756.0 | 29.79 | 756.7 | 80.6 | 27 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchési. |
| Lyons | ..... | ..... | 29.40? | 746.7? | 58.6 | 14.8 | ..... | ..... | ..... | ..... | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | M. Jeys. |
| Marseilles, Observatory | ..... | ..... | 30.01 | 762.0 | 64.2 | 17.9 | 61 | SW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0.008 | 0.20 | Cloudy | The Staff. |
| Mont-Louis | 24.84 | 631.0 | 30.16 | 766.0 | 46.2 | 7.9 | 71 | SE | 13.0 | 5.83 | ..... | ..... | 5 | ..... | SSW | 0.035 | 0.9 | ..... | Mr. Falguère. |
| Nice | ..... | ..... | 29.98 | 761.5 | 62.6 | 17.0 | 79 | W | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0 | 0 | Cloudy | Dr. A. Niepce. |
| Perpignan | 29.66 | 753.3 | 29.93 | 760.3 | 52.0 | 11.1 | 68 | S | ..... | ..... | 2 | ..... | 6 | ..... | WSW | 0 | 0 | ..... | Marié Davy, Director |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | 30.02 | 762.6 | 61.7 | 16.5 | 69 | SE | 9.3 | 4.17 | ..... | ..... | 3 | ..... | W | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Plantade,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Paylac. |
| Saint Maur, (near Paris) | 22.47 | 570.8 | ..... | ..... | 40.1 | 4.5 | ..... | W | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0 | 0 | Cloudy | Gen'l de Nansouty |
| Toulouse, Observatory | 29.78 | 756.5 | 29.95 | 760.7 | 52.3 | 11.3 | 72 | SSE | ..... | ..... | 1 | ..... | 9 | ..... | SW | 0.028 | 0.7 | Covered | E. Renou. |
| Tours | 29.33 | 745.0 | 30.06 | 763.4 | 60.4 | 15.8 | 68 | NW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Versailles, (near Paris) | 29.77 | 756.2 | 29.97 | 761.2 | 55.0 | 12.8 | 57 | NNW | ..... | ..... | 2 | ..... | 5 | ..... | NNW | 0.083 | 2.1 | ..... | C. Marquet. |
| Zi-Ka-Wei, (near Shanghai) | ..... | ..... | 29.95 | 760.7 | 54.0 | 12.2 | 50 | N | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | Cloudy | Dr. A. Bérigny. |
| ..... | 30.39 | 772.0 | 30.42 | 772.7 | 43.0 | 6.1 | 99 | ENE | 6.0 | 2.7 | ..... | ..... | 10 | ..... | ..... | 1.362 | 34.6 | Covered | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | |
| Berlin | 29.76 | 755.9 | 29.93 | 760.3 | 51.4 | 10.8 | 53 | S | | | 1 | | 6 | | | | | | Prof. Dr. Hoh. |
| Breslau | 29.41 | 747.1 | 29.94 | 760.5 | 50.5 | 10.5 | 74 | ESE | | | 2 | | 10 | | | | | Raining | Prof. Arndt. |
| Carlsruhe | 29.44 | 747.7 | 29.87 | 758.6 | 49.3 | 9.6 | 90 | SW | | | 1 | | 10 | | | 0.145 | 3.68 | Raining | Royal University Obs'y |
| Cassel | 29.33 | 745.0 | 29.94 | 760.4 | 51.6 | 10.9 | 48 | E | | | 2 | | 10 | | | 0.681 | 17.3 | Raining | Albert Senz. |
| Crefeld | 29.69 | 754.1 | 29.85 | 758.2 | 54.5 | 12.5 | 49 | E | | | 2 | | 6k | SW | | 0.104 | 2.63 | | Dr. H. Möhl. |
| Emden | 29.91 | 759.7 | 29.95 | 760.6 | 46.6 | 8.1 | 69 | ENE | | | 1 | | 2 | | | 0 | 0 | | Director Lose. |
| Frankfort on the Main | 29.53 | 750.0 | 29.90 | 759.4 | 47.5 | 8.6 | 78 | N | | | 1 | | 10 | | | 0 | 0 | | Prof. Prestel. |
| Friedrichshafen | 28.51 | 724.1 | 29.95 | 760.8 | 50.4 | 10.2 | 82 | SSW | | | 7 | | 10 | W | | 0.067 | 1.7 | Raining | Physical Society. |
| Hamburg | 29.86 | 758.4 | 29.93 | 760.2 | 46.0 | 7.8 | 78 | SE | | | 1 | | 1k | | | 0.059 | 1.5 | Light rain | M. Wilhelm. |
| Kiel | 29.89 | 759.3 | 29.91 | 759.7 | 45.9 | 7.7 | 58 | SW | | | 2 | | 5 | | | 0.008 | 0.2 | Clear | Captain F. Hegemann. |
| Königsberg, (Prussia) | 29.95 | 760.7 | 30.03 | 762.8 | 50.4 | 10.2 | 58 | SW | | | 2 | | 4 | | | 0.068 | 1.72 | | Prof. G. Karsten. |
| Köslin | | | 29.95 | 760.7 | 46.4 | 8.0 | | Calm | | | 0 | | 2 | | | 0.142 | 3.6 | | Prof. E Luther. |
| Leipsic, Observatory | 29.48 | 748 8 | 29.91 | 759.6 | 46.9 | 8.3 | 79 | ENE | | | 2 | | 10 | E | | 0.181 | 4.6 | | H. Müller. |
| Memel, Naval School | 29.98 | 761.4 | 30.02 | 762.6 | 42.4 | 5.8 | 82 | SW | | | 2 | | 3c | SW | | | | Rainy | Prof. Bruhns. |
| Neufahrwasser | 30.00 | 761.9 | 30.01 | 762.3 | 53.1 | 11.7 | 56 | Calm | | | 0 | | 7 | | | | | | Reinbrecht von Skalweit. |
| Posen | 29.72 | 754.9 | 30.01 | 762 3 | 52.5 | 11.4 | 66 | SE | | | 5 | | 10 | | | 0 | 0 | | A. Lothes. |
| Strassburg Obs., (in Alsace | 29.36 | 745.8 | 29.92 | 759.9 | 48.2 | 9.0 | 85 | WNW | | | 1 | | 9 | | | 0 | 0 | | Dr. Magener. |
| Stuttgart | 28.91 | 734.4 | 29.85 | 758.3 | 49.5 | 9.7 | 91 | NW | | | 1 | | 10 | | | 0.896 | 22.75 | | Dr. Schur. |
| Treves, (Trier) | 29.26 | 743.3 | 29.78 | 756.5 | 52.9 | 11.6 | 62 | SW | | | 1 | | 10 | | | 0.319 | 8.1 | Raining | Prof. Schoder. |
| Weissenburg, (Bavaria) | 28.35 | 720.1 | 29.84 | 758.0 | 49.6 | 9.8 | 91 | W | 1 | 0.5 | 2 | | 10 | | | 0.045 | 1.13 | Foggy | Prof. Flesch. |
| Wustrow, Naval School | 29.99 | 761.7 | 30.03 | 762.7 | 41.7 | 5.4 | 88 | N | | | 1 | | 4 | | WSW | 0.276 | 7.0 | Raining | Dr. Von Bebber. |
| German Naval Series. | | | | | | | | | | | | | | | | 0 | 0 | | E. F. Schütz. |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.74 | 755.3 | 30.12 | 765.1 | 65.7 | 18.7 | | SW | | | 1.0 | | | | | | | Clear | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.79 | 756.6 | 29.84 | 757.8 | 80.4 | 26.9 | 67 | WSW | 29? | 13.0? | | | 1 | | | 0 | 0 | D. clouds | |
| Deesa | 29.40 | 746.7 | 29.86 | 758.5 | 94.2 | 34.6 | 20 | W | | | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.77 | 756.2 | 29.81 | 757.2 | 84.2 | 29.0 | 72 | NW | 15 | 6.7 | | | 2 | SSW | WSW | 0 | 0 | D. clouds | |
| Poona | 27.78 | 705.6 | 29.75 | 755.6 | 87.0 | 30.6 | 59 | SE | | | | | 10 | | S | 0.05 | 1.3 | Thunder | |
| Lahore | 29.08 | 738.5 | 29.81 | 757.2 | 85.8 | 29.9 | 27 | NW | 2 | 0.9 | | | 2 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.30 | 693.4 | 29.79 | 756.8 | 84.5 | 29.2 | 56 | W | 8 | 3.6 | | | 1 | | E | 0 | 0 | D. clouds | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.92 | 734.6 | 29.81 | 757.2 | 83.8 | 28.8 | 17 | Calm | 1.2 | 0.5 | | | | | | | | | |
| Agra | 29.26 | 743.3 | 29.82 | 757.4 | 91.7 | 33.2 | 17 | W | | | | | 1 | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | 0 | 0 | | |
| Nagpur | 28.78 | 730.9 | 29.80 | 757.0 | 86.6 | 30.3 | 38 | NW | 2.9 | 1.3 | | | 9 | | NE | | | Thunder-storm | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.42 | 747.2 | 29.78 | 756.5 | 92.1 | 33.4 | 21 | Calm | 0.7 | 0.3 | | | | | | | | | |
| Allahabad | 29.47 | 748.5 | 29.77 | 756.2 | 93.3 | 34.1 | 37 | Calm | 1.5 | 0.7 | | | 7 | W | | 0 | 0 | Blue sky | |
| Patna | 29.57 | 751.2 | 29.75 | 755.6 | 95.3 | 35.2 | 9 | W | 1.4 | 0.6 | | | 4 | W | W | 0 | 0 | D. clouds | |
| Hazaribagh | 27.81 | 706.4 | 29.80 | 757.0 | 83.0 | 28.3 | 25 | SW | 7.9 | 3.5 | | | 10 | | | | | Drizzling | |
| Cuttack | 29.71 | 754.7 | 29.79 | 756.7 | 91.1 | 32.8 | 42 | SSE | 3.3 | 1.5 | | | 3 | | | 0 | 0 | D. clouds | |
| Calcutta (Alipore) | 29.76 | 755.9 | 29.78 | 756.4 | 89.8 | 32.1 | 47 | S | 7 | 3.1 | | | 2 | | NW | 0 | 0 | D. clouds | |
| Goalpara | 29.35 | 745.4 | 29.73 | 755.2 | 86.4 | 30.2 | 38 | SSW | 2.3 | 1.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.78 | 756.4 | 29.87 | 758.7 | 82.7 | 28.2 | 69 | ENE | | | | | | | | 0 | 0 | Misty | |
| Sibsagar | 29.48 | 748.8 | 29.82 | 757.4 | 77.6 | 25.3 | 63 | ENE | 4 | 1.8 | | | 2 | | | 0 | 0 | Blue sky | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.44 | 722.3 | 29.77 | 756.1 | 92.5 | 33.6 | 26 | NW | 6.9 | 3 1 | | | 2 | NW | | 0 | 0 | D. clouds | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.60 | 751.8 | 30.01 | 762.3 | 54.5 | 12.5 | 77 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0.016 | 0.4 | ..... | Prof. Giovanni Codig. |
| Padua | 29.89 | 759.3 | 30.00 | 762.1 | 56.8 | 13.8 | 70 | NE | 0.7 | 0.3 | ..... | ..... | 10 | ..... | ..... | 0.134 | 3.4 | ..... | Prof. Dott. Lorenzloni |
| Vicenza | 29.80 | 756.9 | 29.99 | 761.8 | 55.4 | 13.0 | 69 | E | 1.8 | 0.8 | ..... | ..... | 6 | S | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.69 | 728.7 | 30.01 | 762.3 | 50.0 | 10.0 | 79 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.138 | 3.5 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.48 | 748.9 | 30.01 | 762.2 | 51.6 | 10.9 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.138 | 3.5 | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.13 | 739.9 | 30.04 | 763.1 | 51.1 | 10.6 | 78 | NNW | 0 | 0 | ..... | ..... | 9 | NE | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 28.10 | 713.8 | 30.03 | 762.7 | 46.8 | 8.2 | 79 | WSW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.76 | 756.0 | 29.99 | 761.7 | 56.3 | 13.5 | 74 | E | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.84 | 758.0 | 30.01 | 762.3 | 53.1 | 11.7 | 85 | NE | 5.0 | 2.5 | ..... | ..... | 10 | SE | ..... | 0.256 | 6.5 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.73 | 755.2 | 30.05 | 763.3 | 52.7 | 11.5 | 64 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.110 | 2.8 | ..... | Prof. P. Pigorini. |
| Florence | 29.72 | 755.0 | 29.98 | 761.5 | 67.1 | 19.5 | 56 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 29.91 | 759.8 | 30.00 | 762.0 | 61.3 | 16.3 | 48 | S | 4.9 | 2.2 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 29.97 | 761.2 | 30.02 | 762.5 | 54.9 | 12.7 | ..... | NE | 6.3 | 2.8 | ..... | ..... | 10 | SW | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.47 | 723.0 | 30.03 | 762.7 | 58.5 | 14.7 | 68 | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.90 | 759.5 | 30.01 | 762.3 | 65.5 | 18.6 | 64 | SSE | ..... | ..... | 2 | ..... | 5 | S | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.82 | 757.5 | 30.00 | 762.0 | 66.2 | 19.0 | 46 | S | 11.2 | 5.0 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U. | 29.87 | 758.6 | 30.07 | 763.7 | 69.4 | 20.8 | 35 | SW | ..... | ..... | 2 | ..... | 4 | SW | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 63.3 | 17.4 | 69 | SSW | 17.4 | 7.8 | ..... | ..... | 6 | S | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.75 | 755.6 | 29.94 | 760.4 | 66.9 | 19.4 | 58 | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.19 | 741.3 | 30.07 | 763.8 | 67.3 | 19.6 | 67 | SW | 2.5 | 1.1 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.70 | 754.4 | 29.95 | 760.8 | 73.9 | 23 3 | 28 | SW | 8.1 | 3.6 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.97 | 761.2 | 30.04 | 763.1 | 64.8 | 18.2 | 73 | SSW | ..... | ..... | 4 | ..... | 10 | SW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.49 | 749.1 | 30.05 | 763.2 | 64.0 | 17.8 | 46 | SW | 3.8 | 1.7 | ..... | ..... | 3 | NW | ..... | 0 | 0 | ..... | Prof. F. Brioschi |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tokei (Yeddo) | 30.21 | 767 3 | 30.29 | 769.3 | 41.8 | 5.4 | 86 | ENE | 2.0 | 0.9 | ..... | ..... | 10s | ..... | ..... | 0.040 | 1.02 | Cloudy..... | The Observatory. |
| Tokei (Yeddo) University | 30.23 | 767.8 | 30.33 | 770.5 | 42.5 | 5.6? | 90 | NW | 2 | 0.9 | ..... | ..... | 10ks | ..... | ..... | 0.142 | 3.6 | Cloudy..... | Prof. P. V. Veeder. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 60.8 | 16.0 | 48 | N | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy.. | L. Castillo, A. E. |
| Guadalajara | 25.07 | 636.8 | 30.11 | 764.8 | 50.0 | 10.0 | 53 | SW | 0.9 | 0.4 | ..... | 0 | 9 | ..... | SW | 0 | 0 | Cloudy..... | Prof. L. Perez. |
| Guanajuato | 23.70 | 602.0 | 29.94 | 760 4 | 59.7 | 15.4 | 53 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 55.6 | 13.1 | 52 | WNW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Blue sky..... | Prof. M. Leal. |
| Mexico | 23.13 | 587.5 | 29.82 | 757.4 | 51.8 | 11.0 | 61 | Calm | 0 | 0 | ..... | 10c | ..... | W | ..... | 0 | 0 | Sligh'y foggy | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 50.5 | 10.3 | 64 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy ..... | M. V. de Leon, M. E. |
| Puebla | 23.36 | 593 3 | 30.13 | 765.3 | 43.3 | 6.3 | 82 | E | 4.0 | 1.8 | ..... | 0 | 10n | ..... | ..... | 0 | 0 | Cloudy..... | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 30.08 | 764.2 | 30.10 | 764.5 | 65.3 | 18.5 | 92 | S | 0.9 | 0.4 | ..... | 3c | 3k | ..... | S | 0 | 0 | Foggy ..... | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 30.15 | 765.8 | 30.18 | 766.5 | 68.0 | 20.0 | 81 | NW | 1.8 | 0.8 | ..... | 0 | 8sk | ..... | ..... | 0 | 0 | Foggy ..... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 50.9 | 10.5 | 49 | S | 11.0 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.58 | 593.9 | 30.18 | 766.6 | 44.1 | 6.7 | 66 | E | ..... | ..... | ..... | 1c | 0 | NNW | ..... | 0 | 0 | Hazy..... | P. Spina. [M.M. D. D. |
| Morelia | 24.10 | 612.0 | ..... | ..... | 46.4 | 8.0 | 60 | S | 6.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Slightly hazy | M. Tena, F. L. Param. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.90 | 759.4 | 29.90 | 759.4 | 46.4 | 8.0 | ..... | W | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 29.84 | 757.8 | 29.89 | 759.2 | 46.2 | 7.9 | ..... | SE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.016 | 0.4 | ..... | |
| Helder | 29.87 | 758.6 | 29.87 | 758.6 | 45.5 | 7.5 | ..... | ESE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 29.87 | 758.8 | 29.87 | 758 8 | 50.0 | 10.0 | 70 | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.84 | 757.8 | 29.88 | 759.0 | 48.7 | 9.3 | 63 | S | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy..... | H. v d Brink. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.75 | 755.7 | 29.81 | 757.1 | 46.4 | 8.0 | 69 | SSW | 19.7 | 8.8 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.63 | 752.5 | 29.67 | 753.5 | 39.6 | 4.2 | 68 | S | 11 | 5 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.63 | 752.7 | 29.78 | 756.4 | 47.1 | 8.4 | 47 | SW | 7 | 3 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.57 | 751.0 | 29.61 | 752.1 | 36.7 | 2.6 | 69 | S | 11 | 5 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.20 | 741.7 | 29.39 | 746.6 | 61.9 | 16.6 | 85 | W | 4.2 | 1.9 | ..... | ..... | 3 | ..... | ..... | 2.087 | 53.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.97 | 735.9 | 29.99 | 761.8 | 64.4 | 18.0 | 71 | S | 10.5 | 4.7 | ..... | ..... | 10 | S | ..... | 0.083 | 2.1 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 29.82 | 757.3 | 29.90 | 759.5 | 64.9 | 18.3 | 91 | W | 8.7 | 3.9 | ..... | ..... | 10 | ..... | ..... | 0.067 | 1.7 | Rain & fog.. | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.62 | 752.3 | 29.98 | 761.4 | 59.2 | 15.1 | 97 | SSW | 17.4 | 7.8 | ..... | ..... | 10 | ..... | ..... | 0.181 | 4.6 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 29.38 | 746.3 | 29.45 | 748.1 | 65.5 | 18.6 | 81 | SSW | 16.8 | 7.5 | ..... | ..... | 3 | ..... | ..... | 0.252 | 6.4 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.74 | 755.5 | 29.75 | 755.7 | 86.0 | 30.0 | ..... | S | ..... | ..... | 5 | ..... | 3 | ..... | S | 2 | ..... | D. clouds. | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Rio Douro, S. 25° 58′, E. 32° 37′ | ..... | ..... | 30.14 | 765.6 | 79.7 | 26.5 | ..... | ESE | ..... | ..... | 3 | ..... | 3 | ..... | SE | 1 | ..... | D. clouds | J. T. d'Oliveria, Com'd't. |
| Sado, Porto Praya, Cape Verde Islands | 30.04* | 763.0* | 30.05* | 763.3* | 85.1 | 29.5 | ..... | NE | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 3 | NE | Blue sky | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.72 | 754.9 | 29.73 | 755.1 | ..... | ..... | ..... | W | ..... | ..... | 2 | ..... | 4 | ..... | W | 1 | ..... | Blue sky | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreina, dos Amas, Com' |

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.60 | 751.7 | 30.02 | 762.5 | 50.5 | 10.3 | 63 | ESE | 4 | 2 | ..... | ..... | 7ks;n | ..... | ..... | ..... | ..... | Light rain | Astronomical Obs. |
| Wilna | 29.66 | 753.3 | 30.08 | 764.1 | 46.4 | 8.0 | 75 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy clouds | Astronomical Obs. |
| Dorpat | 29.82 | 757.3 | 30.07 | 763.6 | 44.8 | 7.1 | 77 | S | 7 | 3 | ..... | ..... | 10n;ks | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.08 | 764.1 | 30.10 | 764.5 | 40.6 | 4.8 | 87 | SSE | 22 | 10 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.59 | 751.6 | 29.92 | 760.0 | 36.0 | 2.2 | 98 | S | 27 | 12 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Ch. Forsten. |
| Kieff | 29.45 | 748.0 | 30.08 | 764.0 | 57.9 | 14.4 | 56 | SE | 7 | 3 | ..... | ..... | 5k;ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 30.05 | 763.2 | 30.12 | 765.0 | 60.8 | 16.0 | 48 | NW | 4 | 2 | ..... | ..... | 8s | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.02 | 762.5 | 30.04 | 763.0 | 62.1 | 16.9 | 75 | ENE | 2 | 1 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | Light clouds | Lagorio. |
| Moscow | 29.85 | 758.1 | 30.41 | 772.5 | 45.3 | 7.3 | 73 | S | 7 | 3 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.88 | 759.0 | 30.08 | 764.1 | 63.9 | 17.7 | 37 | ESE | 22 | 10 | ..... | ..... | 2ck | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 30.26 | 768.7 | 30.28 | 769.2 | 43.7 | 6.5 | 70 | SE | 13 | 6 | ..... | ..... | 7k | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.66 | 727.9 | 30.07 | 763.8 | 57.4 | 14.1 | 63 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.35 | 770.8 | 30.26 | 768.7 | 59.2 | 15.1 | 33 | ENE | 13 | 6 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Krotkowo* | 30.03 | 762.7 | 30.50 | 774.7 | 60.4 | 15.8 | 28 | E | 7 | 3 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Light clouds | Cand. Fatjanow. |
| Kasan | 30.26 | 769.0 | 30.55 | 775.9 | 57.4 | 14.1 | 34 | NNE | 2 | 1 | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 29.58 | 751.4 | 30.49 | 774.4 | 61.5 | 16.4 | 14 | Calm | 0 | 0 | ..... | ..... | 7cs | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Nukuss | 29.96 | 761.0 | 30.19 | 766.5 | 63.9 | 17.7 | 75 | NE | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.62 | 726.9 | 30.33 | 770.4 | 56.5 | 13.6 | 56 | NW | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.68 | 753.9 | 30.24 | 768.0 | 24.3 | — 4.3 | 57 | NW | 31 | 14 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.78 | 756.3 | 30.13 | 765.2 | 14.7 | — 9.6 | 72 | NW | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 30.11 | 764.8 | 30.25 | 768.4 | 56.3 | 13.5 | 20 | Calm | 0 | 0 | ..... | ..... | 5ks | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.95 | 710.0 | 30.15 | 765.9 | 18.5 | — 7.5 | 72 | SW | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 30.09 | 764.2 | 30.19 | 766.7 | 31.1 | — 0.5 | 86 | NNW | 4 | 2 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 9.1 | —12.7 | 69 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.90 | 759.4 | 30.00 | 762.1 | 57.7 | 14.3 | 68 | E | 3.0 | 1.33 | ..... | 2c | 1k | W | ..... | 0 | 0 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.95 | 760.6 | 30.00 | 762.0 | 66.9 | 19.4 | 70 | SW | 1.3 | 0.58 | ..... | 3 | 5 | SW | ..... | 0.012 | 0.3 | Almost cov. | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.04 | 686.9 | ..... | ..... | 64.0 | 17.8 | 71 | SW | 5.8 | 2.59 | ..... | ..... | 8 | ..... | ..... | 0.059 | 1.5 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.78 | 705.6 | 29.97 | 761.2 | 64.9 | 18.3 | 55 | SW | 13.4 | 6.00 | ..... | 2 | 7 | ..... | ..... | Inap. | Inap. | Cloudy | The Staff. |
| Murcia, Met. Obs'y | 29.81 | 757.2 | 29.96 | 760.9 | 82.0 | 27.8 | 41 | SSW | 1.7 | 0.75 | ..... | 1 | 3 | E | ..... | 0 | 0 | Almost clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.00 | 736.6 | 29.87 | 758.8 | 66.2 | 19.0 | 71 | SE | 5.0 | 2.22 | ..... | 4 | 0 | S | ..... | 0.012 | 0.3 | Cloudy | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.91 | 759.7 | 29.98 | 761.4 | 71.7 | 22.1 | 44 | NW | 16.8 | 7.5 | ..... | 1cs | 3k | SW | NNW | 0 | 0 | Fair | Benito Vines, S. J. |
| San Fernando, Naval Obs'y | 29.97 | 761.2 | 30.07 | 763.7 | 66.7 | 19.3 | 69 | SSW | 8.6 | 3.9 | ..... | 2 | 7 | W | WNW | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.80 | 756.8 | 29.85 | 758.1 | 78.8 | 26.0 | 82 | SE | 0 | 0 | ..... | 2k | 0 | SE | ..... | 0 | 0 | Clear. | Leonardo de Tejeda, Chief of Engineers. |

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATION. | Barometer, corrected for instrum'tal error and temperature. Inches. | Barometer, corrected for instrum'tal error and temperature. Millimeters. | Barometer, reduced to sea-level. Inches. | Barometer, reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.77 | 756.1 | 29.81 | 757.1 | 34.9 | 1.6 | ..... | ESE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.64 | 752.8 | 29.69 | 754.1 | 34.9 | 1.6 | 100 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.335 | 8.5 | Snowing | |
| Hernosand | 29.54 | 750.2 | 29.59 | 751.5 | 35.2 | 1.8 | 96 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0.642 | 16.3 | ..... | |
| Stockholm | 29.60 | 751.8 | 29.78 | 756 3 | 41.4 | 5.2 | 42 | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.287 | 7.3 | ..... | |
| Wisby | 29.80 | 756.8 | 29.85 | 758.3 | 43.9 | 6.6 | 65 | W | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0.311 | 7.9 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.66 | 753.4 | 29.74 | 755.3 | 40.1 | 4.5 | 82 | WSW | 11.4 | 5.1 | ..... | ..... | 6 | ..... | W | 0.002 | 0.01 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.55 | 725.1 | 29.98 | 761.4 | 53.4 | 11.9 | 70 | SSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.138 | 3.5 | Covered | The Observatory. |
| Zurich | 28.31 | 719.0 | 29.97 | 761.1 | 48.6 | 9.2 | 90 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.606 | 15.4 | Raining | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +0.9 mm.; Thermometer, +1.4 cent.; Relative Humidity, +12 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.14 | 765.6 | 58.8 | 14.9 | 79 | ENE | 9 | 4.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stéfanidès. |
| Valona | ..... | ..... | 30.11 | 764.7 | 63.5 | 17.5 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | A. Bertrand. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Covered | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria.) Lee Obs'y | 29.77 | 756.1 | 29.89 | 759.1 | 64.0 | 17.8 | 61 | SW | ..... | ..... | 4 | ..... | 8n | ..... | SW | 0 | 0 | Thunder; lightn'g | Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.38 | 746.2 | 29.45 | 748.0 | 35.5 | 1.9 | ..... | NE | 26 | 11.6 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Storm | Hon. J. Ferguson. |
| Brockville, Ontario | 29.15 | 740.4 | 29.45 | 748.0 | 37 | 2.8 | ..... | N | 1 | 0.4 | ..... | 5c | 5s | Calm | N | 0 | 0 | Cloudy | W. R. Bigg. |
| *Chatham, N B | 29.31 | 744.5 | 29.37 | 746.0 | 34 | 1.1 | 94 | NE | 19 | 8.5 | ..... | ..... | 10n | ..... | NE | 0.79 | 20.1 | Light rain | G. A. Blair. |
| Charlottetown, P. E. Island | 29.26 | 743.2 | 29.30 | 744.2 | 36 | 2.2 | 95 | NE | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.050 | 1.27 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.17 | 740.9 | 29.36 | 745.7 | 35.7 | 2.1 | 93 | NE | ..... | ..... | 1 | ..... | 10n | ..... | ..... | ..... | ..... | Drizzling | James Smith, M. A. |
| Dalhousie, N. B | 29.41 | 747.0 | 29.44 | 747.8 | 35.7 | 2.1 | 100 | E | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | Raining | H. A. Johnson. |
| Esquimault, B. C | 30.02 | 762.5 | 30.07 | 763.8 | 41.3 | 5.2 | 100 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | W. H. Bevis. |
| *Father Point, Quebec | 29.47 | 748.5 | 29.50 | 749.3 | 32 | 0.6 | 100 | E | 43 | 19.2 | ..... | ..... | 10n | ..... | E | 0.31 | 7.9 | Threatening | J. McWilliams. |
| Fredericton, N. B | 29.23 | 742.4 | 29.30 | 744.2 | 35.0 | 1.7 | 90 | N | 11 | 4.9 | ..... | ..... | 10n | ..... | ..... | 0.19 | 4.8 | Light rain | Prof. Harrison. |
| *Fort Garry Manitoba | 29.03 | 737.3 | 29.90 | 759.4 | 25 | — 3.9 | 94 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.42 | 721.9 | 29.54 | 750.3 | 36 | 2.2 | 90 | NE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Grant. |
| *Halifax, N. S | 29.05 | 737.9 | 29.19 | 741.4 | 33 | 0.6 | 98 | E | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | 0.061 | 1.55 | Heavy snow | F. Allison, M. A. |
| Hamilton, Ontario | 29.12 | 739.6 | 29.49 | 749.0 | 43.2 | 6.2 | 58 | W | ..... | ..... | 1 | 0 | ..... | ..... | ..... | 0 | 0 | Clear | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.39 | 746.5 | 29.42 | 747.3 | 40 | 4.4 | 100 | E | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 1.16 | 29.5 | Overcast | E. Weedon. |
| *Kingston, Ontario | 29.09 | 738.9 | 29.43 | 747.5 | 38 | 3.3 | 76 | NE | 5 | 2.2 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.32 | 744.7 | 29.36 | 745.7 | 32.5 | 0.3 | ..... | NE | 2 | 0.9 | ..... | ..... | 10n | ..... | ..... | 0.42 | 10.7 | Raining | C. H. Rigby. |
| *Montreal, Quebec | 29.16 | 740.7 | 29.36 | 745.7 | 34 | 1.1 | 93 | NE | 14 | 6.3 | ..... | ..... | 10n | ..... | ..... | 0.14 | 3.6 | Light snow | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 28.78 | 731.0 | 29.48 | 748.8 | 34 | 1.1 | 70 | N | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Rev. R. Mosley. |
| Peterboro, Ontario | 28.70 | 729.0 | 29.45 | 748.0 | 39.7 | 4.3 | 82 | Calm | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Bright | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 28.80 | 731.5 | 29.49 | 749.0 | 39 | 3.9 | 55 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | H. Morgan. |
| Port Hastings, N. S | 29.04 | 737.6 | 29.10 | 739.1 | 36.4 | 2.4 | ..... | E | 3 | 1.3 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Foggy | Peter Grant. |
| Port Stanley, Ontario | 28.90 | 734.0 | 29.56 | 750.8 | 38 | 3.3 | 61 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | M. Payne. |
| *Quebec, Quebec | 29.08 | 738.6 | 29.40 | 746.7 | 33 | 0.6 | 100 | NE | ..... | ..... | 6 | ..... | 10n | ..... | NE | 0.80 | 20.3 | Heavy snow | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.00 | 736.6 | 29.46 | 748.3 | 36 | 2.2 | 57 | NW | 5 | 2.2 | ..... | 2c | 0 | NW | ..... | 0 | 0 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 29.15 | 740.4 | 29.20 | 741.7 | 36 | 2.2 | 86 | NE | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0.10 | 2.5 | Cloudy | Dr. Gove. |
| St. John, N. B | 29.05 | 737.9 | 29 22 | 742.2 | 35 | 1.7 | 94 | NE | 5 | 2.2 | ..... | ..... | 10ks | ..... | ..... | 0.250 | 6.35 | Drizzling | G. Murdock, C. E. |
| *Saugeen, Ontario | 28.79 | 731.3 | 29.50 | 749.3 | 40 | 4.4 | 91 | Calm | 0 | 0 | ..... | 2cs | 0 | ..... | ..... | 0 | 0 | Clear | K. Stewart. |
| Stayner, Ontario | 28.69 | 728.7 | 29.46 | 748.3 | 44 | 6.7 | 44 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | R. J. Cole. |
| Stratford, Ontario | 28.22 | 716.8 | 29.52 | 749.8 | 35.4 | 1.9 | 75 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.35 | 745.5 | 29.38 | 746.2 | 36 | 2.2 | 96 | NE | 7 | 3.1 | ..... | ..... | 10n | ..... | ..... | 0.58 | 14.7 | Cloudy | T. C. Hill. |
| *Toronto, Ontario | 29.09 | 738.9 | 29.47 | 748.5 | 44 | 6.7 | 43 | N | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Magnetic Observatory. |
| Windsor, N. S | 29.10 | 739.1 | 29.20 | 741.7 | 36.0 | 2.2 | 90 | E | 16 | 7.2 | ..... | 0 | 10n | ..... | ..... | 0.12 | 3.0 | Fair | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 36.0 | 2.2 | 100 | NE | ..... | ..... | ..... | 5 | 5n | ..... | ..... | 0.53 | 13.5 | Foggy | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,017 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0–10. | CLOUDS. Amount. Up'er 0–10 | CLOUDS. Amount. Low'r 0–10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.06 | 738.1 | 29.28 | 743.7 | 34 | 1.1 | 95 | N | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.01 | 0.3 | Light snow.. | |
| Alpena, Michigan | 28.84 | 732.5 | 29.48 | 748.8 | 39 | 3.9 | 47 | NW | 4 | 1.8 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| Atlantic City, New Jersey | 29.27 | 743.4 | 29.29 | 744.0 | 45 | 7.2 | 84 | NW | 9 | 4.0 | ..... | 8k | 2s | NW | Calm | 0.01 | 0.3 | Cloudy | |
| Augusta, Georgia | 29.56 | 750.8 | 29.75 | 755.6 | 48 | 8.9 | 85 | Calm | 0 | 0 | ..... | 0 | Haze | ..... | Calm | 0.32 | 8.1 | Hazy | |
| Baltimore, Maryland | 29.35 | 745.5 | 29.40 | 746.7 | 48 | 8.9 | 56 | NW | 10 | 4.5 | ..... | 2cs | Haze | Calm | Calm | 0 | 0 | Fair | |
| Barnegat, New Jersey | 29.26 | 743.2 | 29.28 | 743.7 | 45 | 7.2 | 75 | N | 14 | 6 3 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Bismarck, Dakota | 27.99 | 710.9 | 29.85 | 758.2 | 38 | 3.3 | 72 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Boise City, Idaho | 27.17 | 690.1 | 30.05 | 763.3 | 43 | 6.1 | 83 | W | 4 | 1.8 | ..... | 5c | 0 | Calm | ... ..... | 0 | 0 | Fair | |
| Boston, Massachusetts | 29.02 | 737.1 | 29.17 | 740.9 | 37 | 2 8 | 90 | N | 12 | 5.4 | ..... | ..... | 10n;fg | ..... | N | 0.12 | 3.3 | Light rain.. | |
| Brackettville, Texas | 28.92 | 734.6 | 29.96 | 761.0 | 56 | 10.0 | 64 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 28.79 | 731.3 | 29.82 | 757.4 | 28 | — 2.2 | 88 | N | 6 | 2.7 | ..... | 8cs | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Brownsville, Texas | 30.06 | 763.5 | 30.13 | 765.3 | 60 | 15.6 | 70 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Buffalo, New York | 28.75 | 730.2 | 29.43 | 747.5 | 39 | 3.9 | 91 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 60 | 15.6 | 44 | Calm | ..... | ..... | 0 | 5cs | 0 | SW | ..... | 0 | 0 | Fair | |
| Burlington, Vermont | 29.06 | 738.1 | 29.32 | 744.7 | 33 | 0.6 | 100 | N | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.10 | 2.5 | Light snow.. | |
| Cairo, Illinois | 29.47 | 748.5 | 29.86 | 758.4 | 49 | 9.4 | 64 | SW | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Camp Grant, Arizona | 25.11 | 637.8 | 29.91 | 759.7 | 65 | 18.3 | 47 | E | ..... | ..... | 3 | 2c | 0 | E | ..... | 0 | 0 | Fair | |
| Camp Verde, Arizona | 26.72 | 678.7 | 30.20 | 767.1 | 47 | 8.3 | 62 | NW | ..... | ..... | 3 | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Campo, California | 27.19 | 690 6 | 29.76 | 755.9 | 35 | 3.9 | 81 | Calm | 0 | 0 | ..... | 5c | 0 | SE | ..... | 0 | 0 | Fair | |
| Cape Hatteras, N. Carolina | 29.45 | 748.0 | 29.46 | 748.3 | 50 | 10.0 | 86 | NW | 18 | 8.0 | ..... | 2k | 2s | NW | Calm | 0.06 | 1.5 | Fair | |
| Cape Henry, Virginia | 29.37 | 746.0 | 29.40 | 746.7 | 49 | 9.4 | 78 | NW | 22 | 9.8 | ..... | 5cs | 0 | W | ..... | 1.21 | 30.7 | Fair | |
| Cape Lookout, N. Carolina | 29.49 | 749.0 | 29.51 | 749.5 | 50 | 10.0 | 86 | NW | 28 | 12.5 | ..... | 2c | 0 | N | ..... | Inap. | Inap. | Fair | |
| Cape May, New Jersey | 29.28 | 743.7 | 29.31 | 744.5 | 46 | 7.8 | 77 | NW | 32 | 14.3 | ..... | 2c | 0 | W | ..... | 0 | 0 | Fair | |
| Charleston, South Carolina | 29.67 | 753 6 | 29.74 | 755.4 | 50 | 10.0 | 79 | W | 9 | 4.0 | ..... | 0 | 0 | .. ..... | ..... | 0.01 | 0.3 | Clear | |
| Cheyenne, Wyoming | 23.95 | 608.3 | 29 89 | 759.2 | 38 | 3.3 | 63 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 28.88 | 733.5 | 29.56 | 750.8 | 47 | 8.3 | 70 | S | 9 | 4.0 | ..... | 10k | 0 | S | ..... | 0 | 0 | Cloudy | |
| Cincinnati, Ohio | 29.01 | 736.8 | 29.66 | 753.4 | 45 | 7.2 | 42 | W | 6 | 2.7 | ..... | 2cs | 0 | W | ..... | 0 | 0 | Clear | |
| Cleveland, Ohio | 28.84 | 732.5 | 29.56 | 750.8 | 41 | 5.0 | 57 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Concho, Texas | 28.09 | 713.5 | 29.75 | 755.6 | 56 | 13.3 | 52 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.55 | 750.6 | 30.03 | 762.7 | 48 | 8.9 | 49 | SW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Davenport, Iowa | 29.01 | 736.8 | 29.64 | 752.8 | 47 | 8.3 | 62 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Deadwood, Dakota | 25.22 | 640.6 | ..... | ..... | 46 | 7.8 | 54 | SE | 3 | 1.3 | ..... | 5cs | 0 | W | ..... | 0 | 0 | Fair | |
| Denison, Texas | 29.14 | 740.1 | 29.94 | 760.5 | 54 | 12.2 | 61 | S | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denver, Colorado | 24.72 | 627.9 | 29.94 | 760.5 | 39 | 3.9 | 55 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Detroit, Michigan | 28.87 | 733.3 | 29.53 | 750.0 | 38 | 3.3 | 72 | NW | 3 | 1.3 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Dodge City, Kansas | 27.27 | 692.6 | 29.56 | 750.8 | 43 | 6.1 | 75 | N | 28 | 12.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 28.91 | 734.3 | 29.60 | 751.8 | 45 | 7.2 | 53 | N | 8 | 3.6 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Duluth, Minnesota | 28.99 | 736.3 | 29.68 | 753.9 | 36 | 2.2 | 53 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Eagle Pass, Texas | 29.29 | 744.0 | 30.04 | 763.0 | 51 | 10.6 | 72 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 29.12 | 739 6 | 29.19 | 741.4 | 36 | 2.2 | 100 | NE | 16 | 7.2 | ..... | ..... | 10n | ..... | ..... | 0.58 | 14.7 | Light rain... | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 62 | 16.7 | 44 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 28.77 | 730.7 | 29.47 | 748.5 | 41 | 5.0 | 74 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Escanaba, Michigan | 28.86 | 733.0 | 29.50 | 749.3 | 38 | 3.3 | 72 | W | 3 | 1.3 | ..... | ..... | 10n | ..... | W | 0.01 | 0.3 | Light rain... | |
| Florence, Arizona | 28.13 | 714.5 | 29.73 | 755.1 | 67 | 19.4 | 37 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | 24.11 | 612.4 | 30.11 | 764.8 | 49 | 9.4 | 25 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25 49 | 647.4 | ..... | ..... | 42 | 5.6 | 50 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.13 | 638.3 | 30.00 | 764.3 | 58 | 14.4 | 53 | W | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.32 | 744.7 | 29.86 | 758.4 | 44 | 6.7 | 68 | E | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.66 | 728.0 | 29.95 | 760.7 | 45 | 7.2 | 61 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.23 | 742.4 | 29.56 | 743.2 | 14 | —10.6 | 100 | SE | 28 | 12.5 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Fort Sill, Indian Territory | 28.68 | 728.5 | 29.79 | 756.7 | 49 | 9.4 | 64 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Galveston, Texas | 30.05 | 763.3 | 30.09 | 764.3 | 56 | 13.3 | 62 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... ... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 28.90 | 734.0 | 29.53 | 750.0 | 45 | 7.2 | 68 | W | 8 | 3.6 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Indianapolis, Indiana | 28.89 | 733.8 | 29.66 | 753.4 | 46 | 7.8 | 54 | W | 4 | 1.8 | ..... | 8cs | 2s | Calm | Calm | 0 | 0 | Cloudy | |
| Indianola, Texas | 30.06 | 763.5 | 30.09 | 764.3 | 62 | 16.7 | 61 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.80 | 731.5 | 29.94 | 760.5 | 50 | 10.0 | 52 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 29.89 | 756.9 | 29.83 | 757.7 | 57 | 13.9 | 58 | NW | 10 | 4.5 | ..... | 2k | 0 | NW | ..... | 0 | 0 | Fair | |
| Keokuk, Iowa | 29.06 | 738 1 | 29.66 | 753.4 | 51 | 10.6 | 53 | W | 4 | 1.8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Key West, Florida | 29.92 | 760.0 | 29.95 | 760.7 | 67 | 19.4 | 64 | NW | 28 | 12.5 | ..... | 2c | 5ks | W | NW | 0.04 | 1.0 | Fair | |
| Kittyhawk, North Carolina | 29.40 | 746.7 | 29.42 | 747.3 | 49 | 9.4 | 85 | W | 18 | 8.0 | ..... | 8cs | 0 | N | ..... | 0.88 | 22.4 | Fair | |
| Knoxville, Tennessee | 28.77 | 730.7 | 29.78 | 756.4 | 42 | 5.6 | 91 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | |
| La Crosse, Wisconsin | 28.88 | 733.5 | 29.60 | 751.8 | 44 | 6.7 | 60 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | |
| La Mesilla, New Mexico | 26.07 | 662.2 | 30.22 | 767.6 | 43 | 6.1 | 67 | Calm | 0 | 0 | ..... | 0 | 0 | ..... ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.61 | 752.8 | 29.99 | 761.7 | 55 | 12.8 | 74 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 28.99 | 734.0 | 29.73 | 755.1 | 46 | 7.8 | 69 | NW | 6 | 2.7 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.41 | 747.0 | 29.75 | 755.6 | 50 | 10.0 | 79 | N | 6 | 2.7 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.16 | 740.7 | 29.71 | 754.6 | 48 | 8.9 | 43 | SW | 6 | 2.7 | ..... | 8c;ck | Sm'e | SW | Calm | 0 | 0 | Fair | |
| Lynchburg, Virginia | 28.90 | 734.0 | 29.56 | 750.8 | 53 | 11.7 | 42 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.83 | 21.1 | Clear | |
| Marquette, Michigan | 28.79 | 731.3 | 29.48 | 748.8 | 41 | 5.0 | 82 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.04 | 1.0 | Light snow. | |
| Mason, Texas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Memphis, Tennessee | 29.61 | 752.1 | 29.93 | 760.2 | 50 | 10.0 | 71 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 28.82 | 732.0 | 29.52 | 749.8 | 48 | 8.9 | 85 | SW | 10 | 4.5 | ..... | 10cs | Haze | ..... | ..... | 0 | 0 | Cloudy | |
| Mobile, Alabama | 29.97 | 761.2 | 30.92 | 762.5 | 51.5 | 10 8 | 69 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Montgomery, Alabama | 29.70 | 754.4 | 29.94 | 760.5 | 48 | 8.9 | 77 | W | 3 | 1.3 | ..... | 0 | Haze | ..... | Calm | 0.05 | 1.3 | Clear | |
| Morgantown, West Virginia | 28.50 | 723.9 | 29.53 | 750.0 | 43 | 6.1 | 67 | Calm | 0 | 0 | ..... | 9 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| Mt. Washington, N. H. | 22.98 | 583.7 | 29.34 | 745.2 | 24 | — 4.4 | 100 | NE | 42 | 18.8 | ..... | ..... | 10n | ..... | NE | 0.32 | 8.1 | Sleeting | |
| Nashville, Tennessee | 29.30 | 744.2 | 29.83 | 757.7 | 49 | 9.4 | 57 | W | 4 | 1.8 | ..... | Haze | 5s | Calm | Calm | 0.03 | 0.8 | Fair | |
| New Haven, Connecticut | 29.12 | 739.6 | 29.23 | 742.4 | 43 | 6.1 | 75 | N | 8 | 3.6 | ..... | ..... | 10n | ..... | N | 0.10 | 2.5 | Light rain... | |
| New London, Connecticut | 29.16 | 740.7 | 29.21 | 741.9 | 38 | 3.3 | 91 | NW | 4 | 1.8 | ..... | ..... | 10n | ..... | N | 0.06 | 1.5 | Light rain... | |
| New Orleans, Louisiana | 29.99 | 761.7 | 30.05 | 763.3 | 53 | 11.7 | 67 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Newport, Rhode Island | 29.13 | 739.9 | 29.18 | 741.2 | 38 | 3.3 | 100 | NE | 14 | 6.3 | ..... | ..... | 10ks | ..... ... | NE | 0.12 | 3.0 | Threatening | |
| New York, New York | 29.11 | 739.4 | 29.28 | 743.7 | 44 | 6.7 | 67 | NW | 5 | 2.2 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Norfolk, Virginia | 29.40 | 746.7 | 29.45 | 748 0 | 46 | 7.8 | 92 | NW | 9 | 4.0 | ..... | 5c | 0 | W | ..... | 0.89 | 22.6 | Fair | |
| North Platte, Nebraska | 27.04 | 685.8 | 29.62 | 752.3 | 35 | 1.7 | 85 | W | 8 | 3.6 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Hazy | |
| Olympia, Washington Ter. | 30.05 | 763.3 | 30.09 | 764.3 | 45 | 7.2 | 92 | S | 1 | 0.4 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Omaha, Nebraska | 28.68 | 728.5 | 29.75 | 755.6 | 44 | 6.7 | 69 | NW | 6 | 2.7 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Oswego, New York | 29.12 | 739.6 | 29.44 | 747.8 | 38 | 3.3 | 81 | NE | 12 | 5.4 | ..... | 0 | 8s | ..... ... | NE | 0 | 0 | Fair | |
| Pembina, Dakota | 28.99 | 736.3 | 29.85 | 758.2 | 25 | — 3.9 | 87 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Philadelphia, Pennsylvania | 29.27 | 743.4 | 29.32 | 744.7 | 47 | 8.3 | 62 | NW | 16 | 7.2 | ..... | 10c | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Phœnix, Arizona | 28.58 | 725.9 | 30.32 | 770.1 | 63 | 17.2 | 47 | W | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.77 | 451.4 | 29.98 | 761.5 | 16 | — 8.9 | 66 | N | 12 | 5.4 | ..... | 0 | 0 | ..... ..... | ..... | 0 | 0 | Clear | |
| Pioche, Nevada | 24 06 | 611.1 | 29.83 | 757.7 | 48 | 8.9 | 36 | NW | 6 | 2.7 | ..... | 2k | 2s | Calm | Calm | 0 | 0 | Fair | |
| Pittsburg, Pennsylvania | 28.70 | 729.0 | 29.50 | 749.3 | 41 | 5.0 | 57 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Port Huron, Michigan | 28.85 | 732.8 | 29.59 | 749.3 | 41 | 5.0 | 49 | W | 5 | 2.2 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Portland, Maine | 29.15 | 740 4 | 29.20 | 741.7 | 40 | 4.4 | 82 | N | 16 | 7.2 | ..... | ..... | 10n | ..... | NE | 0.17 | 4.3 | Light rain... | |
| Portland, Oregon | 30.03 | 762.7 | 30.14 | 765.5 | 50 | 10.0 | 86 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Prescott, Arizona | 24.71 | 627.6 | 30.07 | 763.8 | 39 | 3.9 | 64 | Calm | ..... | ..... | ..... | 2k | 5s | Calm | Calm | 0 | 0 | Fair | |
| Punta Rassa, Florida | 29.92 | 760.0 | 29.93 | 760.2 | 63 | 17.2 | 57 | NW | 28 | 12.5 | ..... | 5k | 0 | W | ..... | Inap. | Inap. | Fair | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Red Bluff, California | 29.52 | 749.8 | 29.88 | 758.9 | 52 | 11.1 | 93 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Rochester, New York | 28.80 | 731.5 | 29.40 | 746.7 | 43 | 6.1 | 75 | SE | 1 | 0.4 | ..... | 2c | Haze | NW | Calm | 0 | 0 | Fair | |
| Roseburg, Oregon | 29.52 | 749.8 | 30.10 | 764.5 | 48 | 8.9 | 100 | Calm | 0 | 0 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear. | |
| Sacramento, California | 29.79 | 756.7 | 29.87 | 758.7 | 58 | 14.4 | 88 | N | 4 | 1.8 | ..... | 1k | 0 | E | ..... | 0 | 0 | Clear. | |
| St. Louis, Missouri | 29.20 | 741.7 | 29.76 | 755.9 | 52 | 11.1 | 47 | SW | 9 | 4.0 | ..... | 0 | 5s | ..... | W | 0 | 0 | Fair | |
| St. Marks, Florida | 29.91 | 759.7 | 29.92 | 760.0 | 50 | 10.0 | 78 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| St. Paul, Minnesota | 28.85 | 732.8 | 29.68 | 753.9 | 36 | 2.2 | 62 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.67 | 652.0 | 30.00 | 762.0 | 45 | 7.2 | 68 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| San Antonio, Texas | 29.39 | 746.5 | 29.99 | 761.7 | 46 | 7.8 | 69 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| San Diego, California | 29.72 | 754.9 | 29.80 | 756.9 | 52 | 11.1 | 86 | N | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy. | |
| Sandusky, Ohio | 28.92 | 734.6 | 29.59 | 751.6 | 43 | 6.1 | 59 | SW | 10 | 4.5 | ..... | 8cs | Haze | Calm | Calm | 0 | 0 | Fair. | |
| Sandy Hook, New Jersey | 29.26 | 743.2 | 29.28 | 743.7 | 44 | 6.7 | 84 | N | 16 | 7.2 | ..... | ..... | 10ks | ..... | NW | 0 | 0 | Cloudy | |
| San Francisco, California | 29.85 | 758.2 | 29.91 | 759.7 | 55 | 12.8 | 87 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Santa Fé, New Mexico | 23.30 | 591.8 | 29.84 | 757.9 | 38 | 3.3 | 38 | E | 2 | 0.9 | ..... | 1cs | 0 | Calm | ..... | 0 | 0 | Clear. | |
| Savannah, Georgia | 29.68 | 753.9 | 29.77 | 756.1 | 54 | 12.2 | 74 | W | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Shreveport, Louisiana | 29.82 | 757.4 | 30.04 | 763.0 | 48 | 8.9 | 63 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 29.58 | 751.3 | 29.61 | 752.1 | 50 | 10.0 | 72 | W | 13 | 5.8 | ..... | 1c | 0 | N | ..... | 0.03 | 0.8 | Clear. | |
| Springfield, Massachusetts | 29.06 | 738.1 | 29.18 | 741.2 | 39 | 3.9 | 82 | N | 6 | 2.7 | ..... | ..... | 10n | ..... | N | 0.11 | 2.8 | Light rain | |
| Stockton, Texas | 26.94 | 684.3 | 29.94 | 760.5 | 54 | 12.2 | 55 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Thatcher's Island, Mass | 29.11 | 739.4 | 29.16 | 740.7 | 37 | 2.8 | 90 | NE | 24 | 10.7 | ..... | ..... | Fog | ..... | NE | 0.22 | 5.6 | Foggy | |
| Toledo, Ohio | 28.89 | 733.8 | 29.55 | 750.6 | 44 | 6.7 | 52 | Calm | 0 | 0 | ..... | 2c | Haze | Calm | Calm | 0 | 0 | Fair. | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 50 | 10.0 | 53 | SE | ..... | ..... | 1 | 2cs | 0 | Calm | ..... | 0 | 0 | Fair. | |
| Tybee Island, Georgia | 29.73 | 755.1 | 29.76 | 755.9 | 51 | 10.6 | 79 | W | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear. | |
| Umatilla, Oregon | 29.66 | 753.4 | ..... | ..... | 51 | 10.6 | 93 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Vicksburg, Mississippi | 29.77 | 756.1 | 30.04 | 763.0 | 50 | 10.0 | 74 | SW | 4 | 1.8 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Virginia City, Montana | 24.24 | 615.7 | 29.72 | 754.9 | 46 | 7.8 | 52 | NE | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy. | |
| Visalia, California | 29.51 | 749.5 | 29.89 | 759.2 | 46 | 7.8 | 92 | E | 1 | 0.4 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Washington, D. C. | 29.33 | 745.0 | 29.44 | 747.8 | 48.5 | 9.2 | 53 | NW | 16 | 7.2 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 55 | 12.8 | 68 | S | ..... | ..... | 1 | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 29.51 | 749.5 | 29.59 | 751.6 | 46 | 7.8 | 85 | W | 12 | 5.4 | ..... | 2c | 0 | W | ..... | 0.07 | 1.8 | Fair | |
| Winnemucca, Nevada | 25.68 | 652.3 | 30.04 | 763.0 | 34 | 1.1 | 79 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wood's Holl, Mass | 29.07 | 738.4 | 29.13 | 739.9 | 41 | 5.0 | 82 | N | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0.12 | 3.0 | Cloudy. | |
| Yankton, Dakota | 28.56 | 725.4 | 29.87 | 758.7 | 36 | 2.2 | 61 | NW | 8 | 3.6 | ..... | 1c | 0 | NW | ..... | Inap | Inap. | Clear. | |
| Yuma, Arizona | 29.55 | 750.6 | 29.71 | 754.6 | 57 | 13.9 | 39 | SW | 5 | 2.2 | ..... | 0 | 5ks | ..... | Calm | 0 | 0 | Fair | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 29.26 | 743.2 | 29.31 | 744.5 | 8.0 | —13.3 | 100 | SW | 11 | 4.9 | ..... | ..... | 10n | ..... | ..... | 0.01 | 0.3 | Snowing | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 29.93 | 760.2 | 29.95 | 760.7 | 73 | 22.8 | 45 | NW | 21.6 | 9.7 | ..... | 8k | 0 | NW | ..... | 0 | 0 | Fair | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 29.98 | 761.5 | 29.99 | 761.7 | 79 | 26.1 | 90 | NW | 5 | 2.2 | ..... | 8c | 8n | N | S | 0.13 | 3.3 | ..... | James Gall. |
| Navassa, W. I. | 29.78 | 756.4 | 29.86 | 758.4 | 78.5 | 25.8 | ..... | W | 15 | 6.7 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy. | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | 29.97 | 761.2 | 29.97 | 761.2 | 83 | 28.3 | 83 | E | ..... | ..... | 3 | ..... | 8ks | ..... | ..... | 1.030 | 26.16 | Cloudy. | C. J. Hering. |
| Batavia, Dutch Guiana, S. A. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.24 | 641.1 | ..... | ..... | 70.0 | 21.1 | 83 | Calm | ..... | ..... | 0 | 5cs | 3ks | ..... | ..... | 0 | 0 | ..... | Thomas Herran. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,823 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,488 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,560 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m., Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,176.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 1—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.88 | 758.9 | 55 | 12.8 | 53 | 11.7 | 80 | Calm | 0 | 0 | ..... | ..... | 2 | ..... | Calm | 0 | 0 | ..... | ..... | Fair | |
| Navy Yard, Pensacola, Fla. | 29.84 | 757.9 | 59 | 15.0 | 59 | 15.0 | 88 | WNW | 8 | 3.6 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Fair | |
| Navy Yard, Portsmouth, N.H | 29.33 | 745.0 | 79 | 26.1 | 38 | 3.3 | 90 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.3 | 8. | ..... | ..... | Cloudy | |
| Naval Hospital, Yokohama, Japan | 30.18* | 766.6* | 54 | 12.2 | 43.5 | 6.4 | 88 | NNE | ..... | ..... | 3 | ..... | 10s | ..... | ENE | 0.09 | 2.3 | ..... | ..... | Overcast | |
| Adams, Panama | 29.97 | 761.2 | 82 | 27.8 | 82 | 27.8 | 79 | NW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | Smooth | ..... | Misty | |
| Alliance, Naples, Italy | 30.04‡ | 763.0‡ | ..... | ..... | 60 | 15.6 | 88 | WSW | ..... | ..... | 2 | ..... | 4 | ..... | N&E | ..... | ..... | None | ..... | Pleasant | |
| Ashuelot, Shanghai, China | 30.40 | 772.1 | 47 | 8.3 | 45 | 7.2 | 92 | E | ..... | ..... | 2 | ..... | 10 | ..... | E | ..... | ..... | ..... | ..... | Drizzling | |
| Canonicus, New Orleans, La | 30.03 | 762.7 | 45 | 7.2 | 56 | 13.3 | 69 | WNW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Colorado, New York, N. Y. | 29.25‡ | 742.9‡ | ..... | ..... | 44 | 6.7 | 68 | NW | 10 | 4.5 | ..... | ..... | 10 | ..... | NNW | 0 | 0 | ..... | ..... | Hazy | |
| Constellation, N. 42° 19′ W. 58° 04′ | 29.29‡ | 744.0‡ | ..... | ..... | 39 | 3.9 | 100 | E | ..... | ..... | 6 | ..... | 10 | ..... | SE | ..... | ..... | Mod'ate | SE | Foggy | |
| Constitution, Havre, France | 29.92‡ | 760.0‡ | ..... | ..... | 60 | 10.0 | 79 | WSW | ..... | ..... | 1 | ..... | 1 | ..... | Calm | ..... | ..... | ..... | ..... | Clear | |
| Despatch, Constantinople, Turkey | 30.15‡ | 765.8‡ | ..... | ..... | 58 | 14.4 | 70 | NE | ..... | ..... | 2 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Clear | |
| Enterprise, N. 32° 58′, W. 76° | 29.64† | 752.8† | ..... | ..... | 69 | 15.0 | 82 | NW | ..... | ..... | 8 | ..... | 8 | ..... | NW | Heavy | Heavy | Very rough | NW | Squally | |
| Franklin, Norfolk, Va. | 29.56 | 750.8 | 59 | 15.0 | 47 | 8.3 | 77 | WNW | 3 | 1.3 | ..... | ..... | 2 | ..... | WNW | 1.2 | 30. | ..... | ..... | Fair | |
| Gettysburg Valetta, Malta | 30.06‡ | 763.5‡ | ..... | ..... | 70 | 21.1 | 100 | SSW | ..... | ..... | 1 | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Cloudy | |
| Guard, Porto Grande, Cape Verde Islands. | 30.08 | 764.0 | 76 | 24.4 | 75 | 23.9 | 72 | NE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear | |
| Hartford, Montevideo, Uraguay | 29.89 | 759.2 | 69 | 20.6 | 66 | 18.9 | 84 | ENE | 13 | 5.8 | ..... | ..... | 10 | ..... | ENE | ..... | ..... | Smooth | ..... | Cloudy | |
| Marion, Smyrna, Turkey | 30.09 | 764.3 | 64 | 17.8 | 65 | 18.3 | 63 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear | |
| Michigan, Erie, Pa. | 28.98 | 736.1 | 54 | 12.2 | 41 | 5.0 | 65 | WSW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Monocacy, Shanghai, China | 30.28‡ | 769.1‡ | ..... | ..... | ..... | ..... | 92 | SE | ..... | ..... | 2 | ..... | 10 | ..... | E | ..... | ..... | ..... | ..... | Overcast | |
| New Hampshire, Port Royal, S. C. | 29.90 | 759.4 | 51 | 10.6 | 50 | 10.0 | 93 | WNW | 15 | 6.7 | ..... | ..... | 0 | ..... | ..... | 0.07 | 1.8 | ..... | ..... | Clear | |
| Omaha, St. Thomas, W. I. | 29.98* | 761.5* | 82 | 27.8 | 82 | 27.8 | 71 | S | 2 | 0.9 | ..... | ..... | 4 | ..... | S | 0 | 0 | Smooth | ..... | Bright | |
| Onward, Callao, Peru | 30.00† | 762.0† | ..... | ..... | 70 | 21.1 | 90 | SSE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Long | W | Misty | |
| Ossipee, Pensacola, Fla. | 30.01‡ | 762.2‡ | ..... | ..... | 55 | 12.8 | 74 | WNW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Palos, Shanghai, China | 30.43* | 772.9* | 53 | 11.7 | 45 | 7.2 | 92 | NE | ..... | ..... | 2-3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Rainy | |
| Pensacola, Honolulu, H. I. | 30.17 | 766.3 | 74 | 23.3 | 71 | 21.7 | 71 | NE | 2 | 0.9 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | ..... | Clear | |
| Plymouth, Norfolk, Va. | 29.50‡ | 749.3‡ | ..... | ..... | 48 | 8.9 | 85 | WNW | ..... | ..... | 2-3 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Powhatan, Norfolk, Va. | 29.49‡ | 749.0‡ | ..... | ..... | 47 | 8.3 | 100 | NW | 4.2 | 1.9 | ..... | ..... | 2 | ..... | NW | 0.94 | 23.9 | ..... | ..... | Clear | |
| Ranger, Amoy, China | 30.33* | 770.4* | ..... | ..... | 62 | 16.7 | 88 | NE | ..... | ..... | 0-1 | ..... | 7 | ..... | Calm | ..... | ..... | Smooth | ..... | D. clouds | |
| Rio Bravo, Brownsville, Texas | 30.05 | 763.3 | 54 | 12.2 | 53 | 11.7 | 100 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear | |
| Santee, Annapolis, Md | 29.48‡ | 748.8‡ | ..... | ..... | 50 | 10.0 | 52 | NW | ..... | ..... | 5 | ..... | 2 | ..... | NW | 0 | 0 | ..... | ..... | Fair | |
| Saratoga, Washington, D. C. | 29.44* | 747.8* | ..... | ..... | 52 | 11.1 | 47 | NW | ..... | ..... | 2 | ..... | 2 | ..... | N&W | 0 | 0 | ..... | ..... | Clear | |
| St. Louis, League Island, Pa | 29.30 | 744.2 | 63 | 17.2 | 51 | 10.6 | 65 | NW | 12 | 5.4 | ..... | ..... | 8 | ..... | NW | 0 | 0 | ..... | ..... | Fair | |
| Supply, Havre, France | 30.00 | 762.0 | 52 | 11.1 | 50 | 10.0 | 72 | W | ..... | ..... | 1 | ..... | 5? | ..... | W | ..... | ..... | ..... | ..... | Clear? | |
| Swatara, Aspinwall | 30.01 | 762.2 | 84 | 28.9 | 83 | 28.3 | 83 | NNW | ..... | ..... | 3 | ..... | 2 | ..... | N&E | ..... | ..... | ..... | ..... | Fair | |
| Tennessee, N. 9° 49′ E. 63° 32′ | 29.89* | 759.2* | 85 | 29.4 | 84 | 28.9 | 75 | ENE | 2 | 0.9 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | Slight | ESE | D. clouds | |
| Trenton, N. 38° 35′, E. 15° 30′ | 30.04‡ | 763.0‡ | ..... | ..... | 70 | 21.1 | 75 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | NW | 0 | 0 | Smooth | ..... | Misty | |
| Tuscarora, N. 22° 10′, W. 107° 40′ | 29.71 | 754 6 | 71 | 21.7 | 72 | 22.2 | 62 | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear | |
| Vandalia, Villefranche, France | 29.98‡ | 761.5‡ | ..... | ..... | 60 | 15.6 | 76 | E | ..... | ..... | 1 | ..... | 8 | ..... | NNW | ..... | ..... | Long | SSW | Cloudy | |
| Wabash, Boston, Mass. | 29.23‡ | 742.4‡ | ..... | ..... | 38 | 3.3 | 90 | N | 5 | 2.2 | ..... | ..... | 10 | ..... | Calm | 0.16 | 4.1 | ..... | ..... | Light rain | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ——————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | |
| S. S. City of Peking, N. 37° 14′, W. 140° 36′ | | | 30.38† | 771.6† | 52 | 11.1 | 86 | NNE | 17.0 | 7.6 | | 6 | | NNE | | Smooth | Calm | D. clouds | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, N. 35° 27′, E. 139° 39′ | | | | | 46 | 7.8 | | ENE | | | 2 | | 10 | | NNE | | | D. clouds | Capt. Maury. |
| S. S. Colima, N. 14° 34′, W. 94° 17′ | | | 29.92† | 760.0† | 79 | 26.1 | 74 | NNW | | | 6 | | 7 | | NNW | Heavy | NW | D. clouds | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic, N. 40° 49′, W. 23° 47′ | | | 29.97* | 761.2* | | | | S | | | 4 | | 3 | | SW | Light | S | Clear | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. W. H. Thompson. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. *Aneroid; corrected for elevation; instrumental error not known.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, N. 39° 59′, W. 143° 34′ | | | 30.40* | 772.1* | | | | SE | | | 2 | | Light | | SSE | Smooth | | D. clouds | Capt. John Metcalf. |
| S. S. Gaelic, Hong-Kong, China | | | 30.03† | 762.7† | 73 | 22.8 | ?? | S | | | 3 | | | | | | | Foggy | Capt. W. H. Kidley |
| S. S. Oceanic, N. 35° 03′, E. 163° 41′ | | | 29.97 | 761.2 | 59 | 15.0 | 94 | S | | | 6 | | 6 | | SSW | | WSW | D. clouds | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsc... |
| S. S. Nürnberg, N. 27° 56′, W. 58° 07′ | | | 29.69 | 754.1 | 75.0 | 23.9 | 79 | SW | | | 5 | | d | | | Rough sea. | SW | Blue sky | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | Character | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois, N. 41° 20′, W. 65° 46′ | | | 28 78* | 731.0* | 39 | 3.9 | 91 | NE | | | 6 | | 10 | | S | Mod'ate | ENE | Misty | Captain Shackelford. |
| S. S. Indiana, N. 51° 05′, W. 14° 40′ | | | 30.08* | 764.0* | 51 | 10.6 | 86 | NNW | | | 5 | | 3 | | NW | Mod'ate | N | Clear | Captain Sargent. |
| S. S. Ohio, Philadelphia, Pa. | | | 29.44 | 747.8 | 50 | 10.0 | 86 | NW | | | 1 | | 7 | | Calm | | | Clear? | Captain Morrison. |
| S. S. Pennsylvania | | | | | | | | | | | | | | | | | | | Captain Harris. |

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Corrected for temperature and elevation, instrumental error not known.

## RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland, N. 47° 53′, W. 31° 07′ | | | 29.62* | 752.3* | | | | E | 20 | 8.9 | | | 10 | | ESE | Heavy | ESE | Misty | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |

*Aneroid; regulated to standard at Antwerp.

## ALLAN LINE MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| S. S. Scandinavian, N. 44° 37′, W. 47° 24′ | | | 29.45 | 748.0 | 53 | 11.7 | | SSE | | | 3 | | 10 | | S | Swell | E | D. clouds | Capt. W. Richardson. |

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

## MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Crisfield, Md. | | | 29.33 | 745.0 | 50 | 10.0 | 72 | NW | 17 | 7.6 | | | 2c;hz | | NW | | | Clear | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.85 | 758.2 | 19 | —17.2 | 94 | SE | 26 | 11.6 | | | 10s | | | | | Snowing | O. T. Sherman. |

Note.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Asst.) Chief Signal Officer, U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 6, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 29.93 | 760.3 | 64.6 | 18.1 | 76 | SW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Dr. Ollive. |
| Nemours | ..... | ..... | 29.85 | 758.1 | 66 2 | 19.0 | 81 | Calm | ..... | ..... | 0 | ..... | 7 | ..... | ..... | 0 | 0 | Very cloudy | Michel. |
| Algiers | ..... | ..... | 29.88 | 759.0 | 66 2 | 19.0 | 84 | NE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Towiliere. |
| La Calle | ..... | ..... | 29.95 | 760.6 | 62 2 | 16.8 | 77 | NE | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Boulangeot. |
| Tunis | ..... | ..... | 30.03 | 762.7 | 72.3 | 22.4 | 48 | E | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 0 | 0 | Covered | Jacques. |
| Sfax | ..... | ..... | 30.06 | 763.5 | 68 0 | 20.0 | ..... | W | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Gau. |
| Saida | ..... | ..... | 29.99 | 761.7 | 82.0 | 27.8 | ..... | SW | ..... | ..... | 5 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair | Herbin. |
| Tebessa | ..... | ..... | 30.01 | 762.3 | ..... | ..... | ..... | W | ..... | ..... | 6 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Watrin. |
| Geriville | ..... | ..... | 30.12 | 765.0 | 63.7 | 17.6 | 82 | S | ..... | ..... | 6 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Lemaitlot. |
| Laghouat | ..... | ..... | 30.11 | 764.8 | 80.6 | 27.0 | 15 | W | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Bertrand. |
| Biskra | ..... | ..... | 30.04 | 763.1 | 86.7 | 30.4 | 17 | E | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.47 | 748.6 | 30.02 | 762.5 | 57.7 | 14.3 | 58 | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.035 | 0.9 | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.24 | 742.8 | 30.06 | 763.5 | 49.3 | 9.6 | 84 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.283 | 7.2 | ..... | Dr. Wierzbiski. |
| Eperies | 29.06 | 738.2 | 29.93 | 760.3 | 56.5 | 13.6 | 86 | Calm | ..... | ..... | 0 | ..... | 10m;s | ..... | Calm | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.81 | 731.8 | 30.08 | 763.9 | 48.9 | 9.4 | 74 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.220 | 5.6? | ..... | Andreas Rospini. |
| Hermannstadt | 28.52 | 724.5 | 29.93 | 760.3 | 57.9 | 14.4 | 46 | NNW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.71 | 729.2 | 30.06 | 763.5 | 50.7 | 10.4 | 60 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.213 | 5.4 | ..... | Prof. C. Wagner |
| Lemberg | 28.96 | 735.5 | 29.93 | 760.2 | 58.6 | 14.8 | 60 | S | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Dr. T. Stanecki. |
| Pola | 29.91 | 759.6 | 30.02 | 762.4 | 56.5 | 13.6 | 83 | ESE | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0.189 | 4.8 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.55 | 750.5 | 30.00 | 762.1 | 61.0 | 16.1 | 56 | N | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.65 | 753.1 | 29.93 | 760.2 | 59.0 | 15.0 | 75 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Karl Stancel. |
| Trieste | 29.95 | 760.7 | 30.05 | 763.3 | 57.2 | 14.0 | 96 | W | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0.024 | 0.6 | Raining | P. Busin. |
| Vienna | 29.34 | 745.1 | 30.06 | 763.4 | 54.0 | 12.2 | 42 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met.Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.61 | 726.7 | 30.18 | 766.6 | 47.3 | 8.5 | 60 | W | ..... | ..... | 1 | ..... | 8 | ..... | ..... | Inap. | Inap. | ..... | Prof. M. Passau. |
| Brussels | 29.06 | 761.0 | 30.17 | 766.3 | 43.0 | 6.1 | 78 | WNW | ..... | ..... | 1 | ..... | 10 | ..... | W | 0 | 0 | ..... | Royal Observatory. |
| Furnes | 30.16 | 766.1 | 30.19 | 766.7 | 51.3 | 10.7 | 61 | WNW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | M. E. de Cae. |
| Maeseyck | 30.04 | 763.0 | 30.17 | 766.2 | 44.1 | 6.7 | 85 | WSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.028 | 0.7 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 ? eet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.99 | 761.7 | 30.09 | 764.3 | 45.3 | 7.4 | ..... | SSE | 14 | 6.3 | ..... | ..... | 2 | ..... | ..... | 0.015 | 0.38 | Blue sky..... | W. B swell. |
| Ardrossan | 30.05 | 763.3 | 30.07 | 763.8 | 50 | 10.0 | ..... | SW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.10 | 764.5 | 52.2 | 11.2 | ..... | SSW | 8 | 3.6 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.11 | 764.8 | 50.0 | 10.0 | ..... | WNW | 11 | 4.9 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 30.11 | 764.8 | 53.7 | 12.1 | ..... | SSE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | J. L. E. Dreyer. |
| Bradford, Yorkshire | 29.72 | 754.9 | 30.11 | 764.8 | 46.5 | 8.1 | ..... | W | ..... | ..... | 0 | ..... | 5 | ..... | ..... | 0 | 0 | D. clouds..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.91 | 759.7 | 29.94 | 760.5 | 82.5 | 28.1 | ..... | NE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 30.14 | 765.5 | 56.0 | 13.3 | ..... | S | ..... | ..... | 1 | ..... | 7 | ..... | ..... | Blank | Blank | D. clouds..... | H. Todd. [H. C. |
| Cardington | ..... | ..... | 30.14 | 765.5 | 52.0 | 11.1 | ..... | S | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | John McLaren. |
| Chatham, School M. E | 30.02 | 762.5 | 30.16 | 766.1 | 46.2 | 7.9 | ..... | N | ..... | ..... | 1 | ..... | 4 | ..... | ..... | Blank | Blank | Blue sky..... | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.43 | 722.1 | 29.91 | 759.7 | 45.0 | 7.2 | ..... | NW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | Fine..... | Alexander Watt. |
| Donaghadee | 30.07 | 763.8 | 30.10 | 764.5 | 50 | 10.0 | ..... | SE | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 30.13 | 765.3 | 30.16 | 766.1 | 45 | 7.2 | ..... | ESE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Misty..... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 30.10 | 764.5 | 52.6 | 11.4 | ..... | NW | ..... | ..... | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Thomas Mackereth. |
| Falmouth, Observatory | 29.90 | 759.4 | 30.13 | 765.3 | 49.5 | 9.7 | ..... | ESE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff. |
| Fort Napier, (Natal) | 27.67 | 702.8 | 29.86 | 758.4 | 91.6 | 32.8 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.66 | 753.4 | 29.90 | 759.4 | 87 | 30.6 | ..... | N | ..... | ..... | 0 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's College | ..... | ..... | 30.03 | 762.7 | 56 | 13.3 | ..... | SW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.83 | 757.7 | 29.88 | 758.9 | 67.2 | 19.6 | ..... | E | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy..... | Corpl. Wm. Allen, A. H. C. |
| Glasgow, Observatory | 29.89 | 759.2 | 30.09 | 764.3 | 44.9 | 7.2 | ..... | S | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | Blue sky..... | D. G. Maclean. |
| Great Yarmouth | 30.14 | 765.5 | 30.14 | 765.5 | 44 | 6.7 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Hazy..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.97 | 761.2 | 30.14 | 765.5 | 52.2 | 11.2 | ..... | SE | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff, for G. B. Airy. |
| Guernsey | 29.89 | 759.2 | 30.11 | 764.8 | 51.5 | 10.8 | ..... | ENE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Dr. S. E. Hoskins, F. R. S. |
| Helston | ..... | ..... | 30.12 | 765.0 | 54 | 12.2 | ..... | E | ..... | ..... | 2 | ..... | 3c | ..... | ..... | 0 | 0 | Fine..... | M. P. Moyle. |
| Holyhead | 30.09 | 764.3 | 30.14 | 765.5 | 51 | 10.6 | ..... | SSW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | John Tilston. |
| Jersey | 29.85 | 758.2 | 30.15 | 765.8 | 54.0 | 12.2 | ..... | SE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 30.14 | 765.5 | 52.6 | 11.4 | ..... | E | 28 | 12.5 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | Hazy..... | The Staff. |
| Kingstown | 30.09 | 764.3 | 30.12 | 765.0 | 46 | 7.8 | ..... | E | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 30.12 | 765.0 | 50.0 | 10.0 | ..... | NW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Wm. J. Harrison, F. G. S. |
| Malta, (Mediterranean) | 29.94 | 760.5 | 30.02 | 762.5 | 72.0 | 22.2 | ..... | SW | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Sgt. Fred. Travis, A. H. |
| Nairn | 29.95 | 760.7 | 30.05 | 763.3 | 49 | 9.4 | ..... | WSW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Clear..... | W. D. Penny. [O. |
| Nassau, (Bahamas) | ..... | ..... | 29.97 | 761.2 | 69.5 | 20.8 | ..... | NW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 29.94 | 760.5 | 30.13 | 765.3 | 55.1 | 12.8 | ..... | S | ..... | ..... | 1 | ..... | 5k | ..... | NNW | 0 | 0 | D. clouds..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.59 | 751.6 | 30.12 | 765.0 | 50.0 | 10.0 | ..... | SE | ..... | ..... | 0-1 | ..... | 10k | ..... | ..... | ..... | ..... | Overcast..... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.14 | 765 5 | 51 | 10.6 | ..... | SSE | ..... | ..... | 0 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Mr. Lucas. |
| Plymouth | 29.95 | 760.7 | 30.12 | 765.0 | 52.0 | 11.1 | ..... | ESE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | John Merrifield. |
| Roche's Point | 30.05 | 763.3 | 30.10 | 764.5 | 49 | 9.4 | ..... | SE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | Hazy..... | W. Kennedy. |
| Saint Ann's Head | 29.96 | 761.0 | 30.12 | 765.0 | 50 | 10.0 | ..... | SW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | John C. Walker. |
| Sandwick Manse, (Orkneys | ..... | ..... | 30.05 | 763.3 | 45.3 | 7.4 | ..... | S | 16 | 7.2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 29.98 | 761.5 | 61.2 | 17.9 | ..... | NE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | Sergt. W. H. Lyne. |
| Sheffield | 29.88 | 758.9 | 30.16 | 766.1 | 50.4 | 10.2 | ..... | W | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Blue sky..... | W. F. Cooper. |
| Silloth Rectory | 30.08 | 764.0 | 30.12 | 765.0 | 51.4 | 10.8 | 67 | SW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | D. clouds..... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.72 | 754.9 | 30.13 | 765.3 | 47.1 | 8.4 | ..... | SW | ..... | ..... | 0 | ..... | 4 | ..... | ..... | ..... | ..... | Hazy ..... | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 29.99 | 761.7 | 44 | 6.7 | ..... | S | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded.. | John Sutherland. |
| Stratfield Turgiss | 29.91 | 759.7 | 30.13 | 765.3 | 51.0 | 10.6 | ..... | SW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky.... | Rev. C. H. Griffith, F. M. |
| Thurso | ..... | ..... | 30.02 | 762.5 | 50 | 10.0 | ..... | SSW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 30.09 | 764.3 | 57 | 13.9 | ..... | E | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 30.06 | 763.5 | 52.1 | 11.2 | ..... | SSE | 13 | 5.8 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.21 | 767.3 | 62.0 | 16.7 | 87 | S | ..... | ..... | 1 | ..... | 9k | ..... | ..... | 0 | 0 | Sultry..... | Francis Abbott, F. R. A. S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.76 | 755.9 | 29.94 | 760.6 | 80.0 | 26.7 | 67 | SE | 25.0 | 11.2 | ..... | 2 | 3 | ..... | ESE | 0.04 | 1.0 | Squally..... | C. Meldrum. |
| Melbourne, Observatory | 30.02 | 762.5 | 30.11 | 764.8 | 60.5 | 15.8 | 79 | NE | 5 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Very fine..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

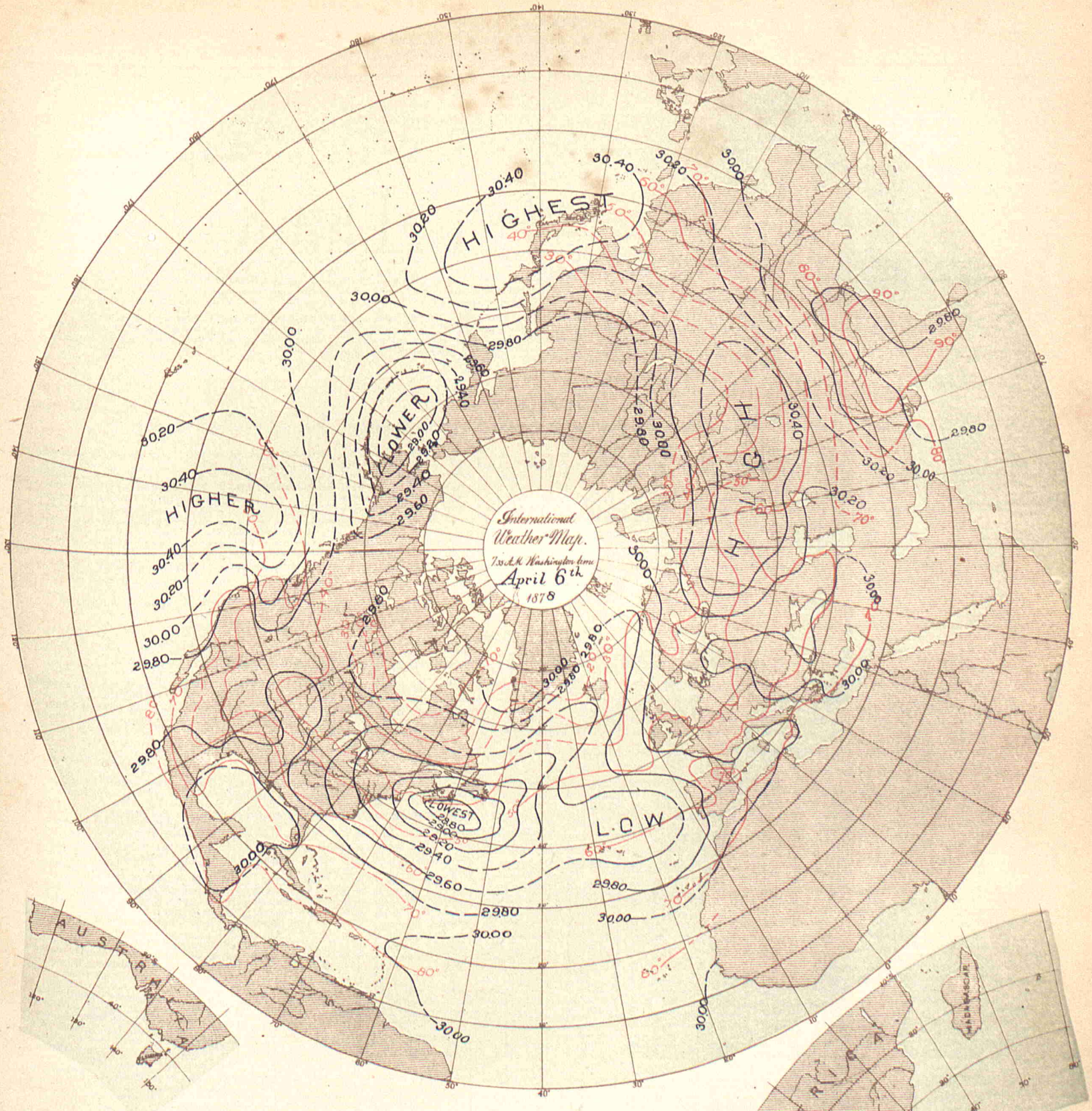
NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft, or 670.6 m.

## MARINE SERIES.

### VESSELS.

| | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather | Observer. |
|---|---|---|---|---|
| S. S. Algeria, N. 43° 35′ W. 48° 40′ | 10* | ENE; SSW | Rain; fog | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | Capt. C. C. Prehn. [R. |
| S. S. Peruvian | ..... | ..... | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | Capt. Alex Simpson. |
| S. S. Yorkshire, N. 47° 40′ W. 28° 15′ | 6 | ENE | D. clouds | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.25 | 666.7 | | | 68.4 | 20.2 | 81 | SE | | | 5 | 1c | 6s;d | | | 0 | 0 | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.02 | 762.6 | 30.07 | 763.8 | 36.0 | 2.2 | 93 | NE | | | 4 | | 10 | | | | | | |
| Fanöe | 30.08 | 764.1 | 30.10 | 764.6 | 45 1 | 7.3 | 69 | W | | | 4 | | 5 | | | | | | |
| Godthaab, (Greenland) | 30.06 | 763.5 | 30.10 | 764.6 | 29.7 | — 1.3 | 92 | Calm | | | 0 | | 9 | | | | | | |
| Stykkisholm, (Iceland) | 29.59 | 751.6 | 29.63 | 752.7 | 19.6 | — 6.9 | 100 | NE | | | 7 | | 10 | | | | | Snowing | |
| Thorshavn, (Faröe) | 29.91 | 759.7 | 29.95 | 760.6 | 44.4 | 6.9 | 81 | S | | | 2 | | 6 | | | | | Raining | |
| Vestervig | 29.95 | 760.6 | 30.11 | 764.9 | 43.2 | 6.2 | 85 | SW | | | 2 | | 5 | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.71 | 754.5 | 30.26 | 768.5 | 50.0 | 10 | 59 | NE | | | 1 | | 2 | | NE | 0 | 0 | Slightly cl'dy | Collignon, Director. |
| Amiens, Normal School | | | | | | | | | | | | | | | | | | | Bonvarne, Director. |
| Avignon, Normal School | 29.95 | 760.6 | 30.02 | 762.6 | 66.2 | 19 | 46 | N | | | 1 | | 10 | | | 0 | 0 | Covered | Mr. Giraud, Director |
| Bar-sur-Seine | 29.58 | 751.2 | 30.14 | 765.5 | 53.1 | 11.7 | 49 | E | | | 2 | | 2kn | | | Inap. | Inap. | Slightly cl'dy | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 49.1 | 9.5 | 48 | E | | | 1 | | 2 | | | 0 | 0 | Slightly cl'dy | Normal School. |
| Besançon | 29.18 | 741.2 | 30.07 | 763.7 | 55.4 | 13 | 66 | N | | | 4 | | 2 | | NE | 0.362 | 9.2 | Slightly cl'dy | Normal School. |
| Bourg-en-Bresse | 29.23 | 742.5 | 30.14 | 765.6 | 57.7 | 14.3 | 52 | N | | | 2 | 5c | | SW | | 0.35 | 9. | Cloudy | Normal School. |
| Bourges, Normal School | 29.54 | 750.4 | 30.10 | 764.6 | 50.9 | 10.5 | 70 | NE | | | 1 | | 2 | | NE | 0 | 0 | Slightly cl'dy | A. Wagner, Director. |
| Brest, Naval Observatory | 29.77 | 756.1 | 29.98 | 761.6 | 57.6 | 13.9 | 43 | ESE | | | 2 | | 3k | | ESE | 0.020 | 0.50 | | The Staff. |
| Carcassonne, Normal School | 29.55 | 750.6 | 29.96 | 761.0 | 62.6 | 17 | 70 | NE | | | 4 | | 2 | | N | 0 | 0 | Slightly cl'dy | Vateau, Director. |
| Caen | 30.06 | 763.5 | 30.13 | 765.4 | 55 2 | 12.9 | 68 | S | | | 8 | | 0 | | | 0.094 | 2.4 | Clear | Normal School. |
| Chartres, Normal School | 29.50 | 749.3 | 30.07 | 763.8 | 52.7 | 11.5 | 90 | E | | | 2 | | 0 | | | 0 | 0 | Clear | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.63 | 752.5 | 29.95 | 760.7 | 50.5 | 10.3 | 68 | S | | | 2 | | 5k | | S | 0 | 0 | Cloudy | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.67 | 728.2 | 30.02 | 762.4 | 57.2 | 14.0 | 48 | NE | | | 2 | | 5 | | SW | 0.079 | 2.0 | Cloudy | Alluard, Director. |
| Commercy, Normal School | 29.28 | 743.8 | 30.19 | 766.7 | 47.5 | 8.6 | 63 | NW | | | 2 | | 1 | | NW | 0.031 | 0.8 | Clear | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.93 | 734.7 | 30.07 | 763.7 | 67.5 | 19.7 | 43 | NW | | | 2 | | 8 | | NW | 0 | 0 | ¾ covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 29.82 | 757.4 | 30.04 | 762.9 | 59.0 | 15 | 55 | E | | | 2 | | 5 | | NE | 0 | 0 | Cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.80 | 756.9 | 30.11 | 764.8 | 53.2 | 11.8 | 54 | E | | | 1 | | 2 | | E | 0 | 0 | Slightly cl'dy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.15 | 740.5 | 30.07 | 763.8 | 55.0 | 12.8 | 53 | NE | | | | | 0 | | | 0.20 | 5. | Clear | Voudez, Director. |
| Lorient, Naval Observatory | 29.97 | 761.2 | 30.07 | 763.8 | 55.4 | 13.0 | 55 | E | | | 4 | | 2 | | E | 0 | 0 | ¼ covered | T. Carré, Director. |
| Mâcon, Normal School | 29.41 | 746.9 | 30.07 | 763.6 | 53.1 | 11.7 | 75 | WSW | | | 2 | | 2 | | WSW | 0.24 | 6. | Slightly cl'dy | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | | | | | | | | | | | | | | | | | | | Normal School. |
| Nismes, Normal School | 29.03 | 737.4 | 30.10 | 764.4 | 48.9 | 9.4 | 78 | NE | | | 1 | | 1 | | SW | 0 | 0 | Clear | Boyer, Director. |
| Orleans, Normal School | 29.85 | 758.1 | 30.05 | 763.2 | 70.5 | 21.4 | 47 | NW | | | 2 | | 10 | | S | 0 | 0 | Covered | Bernard, Director. |
| Paris, Observatory | 29.67 | 753.7 | 30.04 | 763.1 | 77.0 | 25 | 48 | NE | | | 2 | | 2 | | N | 0 | 0 | Slightly cl'dy | National Observatory. |
| Privas | 29.90 | 759.5 | 30.15 | 765.7 | 52.2 | 11.2 | 48 | E | | | 1 | | 8 | | E | 0.037 | 0.95 | Very cloudy | Normal School |
| Puy de Dome (Summit) | 29.02 | 737.2 | 30.10 | 764.4 | 55.4 | 13 | 73 | SE | | | 2 | | 1 | | SE | 0 | 0 | Clear | Alluard, Director. |
| Rochefort, Naval Obs'y | | | | | | | | | | | | | | | | | | | Lt. Decante, Director. |
| Rouen, Normal School | 30.00 | 762.1 | 30.04 | 762.9 | 60.1 | 15.6 | 78 | E | | | 4 | | 0 | | | 0 | 0 | Clear | F. Lucard, Director. |
| Saint Malo (Port) | 30.08 | 763.9 | 30.16 | 766.1 | 55.4 | 13.0 | 36 | WNW | | | 3 | | 0 | | | 0 | 0 | Clear | M. H. Hercouet. |
| Tarbes, Normal School | | | | | | | | | | | | | | | | | | | T. Hugues, Director. |
| Villefranche | 28.84 | 732.5 | 29.89 | 759.2 | 66.6 | 19.2 | 63 | W | | | 1 | | 10 | | | 0 | 0 | Covered | Vilot, Director |
| SUB-SERIES. | 29.34 | 745.3 | 30.06 | 763.4 | 58.3 | 14.6 | 83 | NE | | | 1 | | 5 | | W | 0 | 0 | Cloudy | |
| Fort de France, Martinique | 29.79 | 756.6 | 29.82 | 757.3 | 81.0 | 27.2 | | | | | | | | | | 0 | 0 | | L'Abbé Marchési. |
| Lyons | | | 30.12 | 765.1 | 58.1 | 14.5 | | | | | | | 5 | | | 0.71 | 18. | | M. Jeys. |
| Marseilles, Observatory | | | 30.01 | 762.3 | 65.1 | 18.4 | 62 | WSW | | | 1 | | 9 | | | 0 | 0 | Cloudy | The Staff. |
| Mont-Louis | 24.87 | 631.6 | 30.18 | 766.6 | 50.9 | 10.5 | 60 | SSW | 18.6 | 8.33 | | | 4 | | SSW | 0.295 | 7.5 | | Mr. Falguère. |
| Nice | | | 30.02 | 762.6 | 64.4 | 18.0 | 88 | WSW | | | 2 | | 8 | | | 0 | 0 | Very cloudy | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.85 | 758.3 | 30.13 | 765.3 | 54.9 | 12.7 | 41 | ESE | | | 2 | | 4 | | | 0.016 | 0.4 | | Marié Davy, Director |
| Perpignan | | | 30.04 | 763.0 | 60.6 | 15.9 | 72 | SE | 7.4 | 3.33 | | | 4 | | E | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.48 | 571.1 | | | 39.6 | 4.2 | | SSW | | | 2 | | 9 | | | 0.193 | 4.9 | Snowy | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.98 | 761.5 | 30.15 | 765.7 | 55.4 | 13.0 | 41 | E | | | 1 | | 4 | | ENE | 0 | 0 | Fair | E. Renou. |
| Toulouse, Observatory | 29.29 | 743.9 | 30.01 | 762.3 | 63.0 | 17.2 | 66 | SSE | | | 3 | | 8 | | | 0 | 0 | | The Staff. |
| Tours | 29.89 | 759.1 | 30.08 | 764.1 | 55.9 | 13.3 | 50 | E | | | 2 | | 5 | | E | 0 | 0 | | C. Marquet. |
| Versailles, (near Paris) | | | 30.14 | 765.6 | 51.1 | 10.6 | 52 | NE | | | 2 | | 0 | | | 0.009 | 0.22 | Hazy | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.27 | 768.8 | 30.29 | 769.4 | 48.4 | 9.1 | 92 | E | 4.5 | 2.0 | | | 10 | | | 0.114 | 2.9 | Covered | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 29.88 | 758.9 | 30.05 | 763.3 | 48.2 | 9.0 | 70 | NW | | | 1 | | 10 | | | 0.106 | 2.7 | | Prof. Arndt. |
| Breslau | 29.51 | 749.6 | 30.04 | 763.1 | 51.4 | 10.8 | 55 | W | | | 4 | | 4 | | | 0.463 | 11.75 | | Royal University Obs'y |
| Carlsruhe | 29.68 | 753.9 | 30.12 | 765.0 | 51.4 | 10.8 | 59 | WSW | | | 1 | | 2 | | | 0 | 0 | | Albert Senz. |
| Cassel | 29.54 | 750.3 | 30.15 | 765.8 | 48.6 | 9.2 | 52 | N | | | 4 | | 7 | SW | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.97 | 761.1 | 30.13 | 765.2 | 47.3 | 8.5 | 70 | W | | | 2 | | 7к | | | 0 | 0 | | Director Lose. |
| Emden | 30.14 | 765.6 | 30.18 | 766.5 | 46.6 | 8.1 | 59 | NW | | | 1 | | 6 | | | 0.319 | 8.1 | | Prof. Prestel. |
| Frankfort on the Main | 29.79 | 756.6 | 30.16 | 766.0 | 51.4 | 10.8 | 38 | NW | | | 3 | | 5 | | | 0.028 | 0.7 | | Physical Society. |
| Friedrichshafen | 28.68 | 728.5 | 30.13 | 765.4 | 50.4 | 10.2 | 79 | S | | | 3 | | 7 | WSW | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 30.02 | 762.4 | 30.09 | 764.2 | 44.8 | 7.1 | 81 | ESE | | | 1 | | 7k | | | 0.169 | 4.3 | Showery | Captain F. Hegemann. |
| Kiel | 30.09 | 764.2 | 30.10 | 764.6 | 43.7 | 6.5 | 74 | SE | | | 2 | | 6 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.83 | 757.7 | 29.91 | 759.8 | 45.7 | 7.6 | 88 | W | | | 3 | | 8 | | | 0.665 | 16.9 | | Prof. E Luther |
| Köslin | | | 29.97 | 761.1 | 40.8 | 4.9 | | NE | | | 2 | | 4 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.67 | 753.6 | 30.10 | 764.5 | 45.9 | 7.7 | 75 | NW | | | 2 | | 9 | W | | 0.098 | 2.5 | Sprinkling | Prof. Bruhns. |
| Memel, Naval School | 29.89 | 759.1 | 29.93 | 760.3 | 47.5 | 8.6 | 93 | SSE | | | 1 | | 10n | | | | | Raining | Reinbrecht von Skalweit. |
| Neufahrwasser | 29.93 | 760.3 | 29.95 | 760.7 | 39.4 | 4.1 | 93 | NNW | | | 2 | | 10 | | | 0.260 | 6.6 | Foggy | A. Lothes. |
| Posen | 29.75 | 755.6 | 30.04 | 763.1 | 47.5 | 8.6 | 75 | W | | | 8 | | 10 | | | 0.260 | 6.6 | | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.60 | 751.8 | 30.15 | 765.9 | 52.2 | 11.2 | 47 | N | | | 2 | | 4 | SW | | 0.074 | 1.87 | | Dr. Schur. |
| Stuttgart | 29.14 | 740.2 | 30.10 | 764.4 | 50.5 | 10.3 | 47 | NW | | | 1 | | 2 | W | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | 29.52 | 749.8 | 30.04 | 763.1 | 49.3 | 9.6 | 60 | W | | | 4 | | 5 | | | 0.002 | 0.05 | Foggy | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.60 | 726.5 | 30.12 | 765.1 | 45.0 | 7.2 | 72 | S | 2 | 1 | | | 6ck | | W | 0.508 | 12.9 | Raining | Dr. Von Bebber. |
| Wustrow, Naval School | 30.10 | 764.5 | 30.14 | 765.5 | 39.9 | 4.4 | 84 | NNE | | | 2 | | 3 | | | 0 | 0 | | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.64 | 752.8 | 30.02 | 762.6 | 68.4 | 20.2 | | SW | | | 1.5 | | k | | | | | Clear. | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.80 | 756.9 | 29.85 | 758.2 | 79.2 | 26.2 | 78 | WSW | 30? | 13.4? | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.39 | 746.4 | 29.85 | 758.3 | 94.0 | 34.4 | 23 | SSW | | | | | 1 | SSW | | 0 | 0 | D. clouds | |
| Bombay | 29.75 | 755.7 | 29.79 | 756.6 | 89.2 | 31.8 | 51 | NNW | 22 | 9.8 | | | | | | 0 | 0 | Blue sky | |
| Poona | 27.77 | 705.4 | 29.72 | 754.9 | 91.5 | 33.1 | 37 | E | | | | | 6 | | ESE | 0.02 | 0.5 | D. clouds | |
| Lahore | 29.11 | 739.5 | 29.84 | 758.0 | 88.1 | 31.2 | 32 | Calm | 1.1 | 0.5 | | | 8 | | | 0 | 0 | Cloudy | |
| Belgaum | 27.30 | 693.3 | 29.79 | 756.8 | 84 | 28.9 | 51 | W | 9 | 4.0 | | | 2 | | | 0 | 0 | D. clouds | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.93 | 734.9 | 29.82 | 757.5 | 84.8 | 29.3 | 23 | NW | 0.6 | 0.3 | | | 4 | | | 0 | 0 | | |
| Agra | 29.28 | 743.7 | 29.83 | 757.7 | 92.6 | 33.7 | 23 | NW | | | | | | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.78 | 731.0 | 29.83 | 757.7 | 74.9 | 23.8 | 65 | S | 5.5 | 2.5 | | | 10 | | NE | 1.05 | 26.7 | Thunder-storm | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.45 | 748.0 | 29.81 | 757.2 | 92.4 | 33.6 | 32 | SE | 2.7 | 1.2 | | | 7 | ESE | | 0 | 0 | D. clouds | |
| Allahabad | 29.50 | 749.3 | 29.80 | 757.0 | 91 | 32.8 | 21 | Calm | 1.4 | 0.6 | | | 3 | W | | 0 | 0 | D. clouds | |
| Patna | 29.60 | 751.9 | 29.78 | 756.3 | 96.2 | 35.7 | 7 | W | 1.7 | 0.8 | | | 4 | W | W | 0 | 0 | D clouds | |
| Hazaribagh | 27.83 | 706.8 | 29.80 | 757.0 | 88.3 | 31.3 | 16 | WNW | 8 | 3.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.76 | 755.9 | 29.84 | 758.0 | 90.1 | 32.3 | 55 | SSE | 2.3 | 1.0 | | | 4 | | | 0 | 0 | D. clouds | |
| Calcutta (Alipore) | 29.78 | 756.3 | 29.80 | 756.9 | 85.6 | 29.8 | 65 | S | 7 | 3.1 | | | 10 | | SW | 0 | 0 | Thunder | |
| Goalpara | 29.38 | 746.3 | 29.77 | 756.1 | 84.8 | 29.3 | 42 | SSW | 3.7 | 1.6 | | | 3 | | W | 0 | 0 | D. clouds | |
| Chittagong | 29.52 | 757.3 | 29.91 | 759.6 | 84.4 | 29.1 | 81 | SW | 5.9 | 2.6 | | | 6 | | | 0 | 0 | D. clouds | |
| Sibsagar | 29.48 | 748.8 | 29.82 | 757.4 | 78.1 | 25.6 | 65 | ENE | 3.7 | 1.6 | | | 4 | | | 0 | 0 | Blue sky | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.45 | 722.6 | 29.78 | 756.4 | 92.8 | 33.8 | 24 | NE | 2.8 | 1.2 | | | 1 | | W | 0 | 0 | D. clouds | |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.60 | 751.7 | 30.01 | 762.2 | 57.2 | 14.0 | 71 | SW | 0.7 | 0.3 | ..... | ..... | 10 | ..... | ..... | 0.031 | 0.8 | ..... | Prof. Giovanni Codig. |
| Padua | 29.89 | 759.2 | 30.00 | 762.0 | 58.8 | 14.9 | 74 | SSE | 1.6 | 0.8 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.80 | 756.9 | 29.99 | 761.8 | 57.4 | 14.1 | 76 | SE | 0.7 | 0.3 | ..... | ..... | 3 | W | ..... | 0.110 | 2.8 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.69 | 728.7 | 30.01 | 762.3 | 59.7 | 15.4 | 59 | S | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0.047 | 1.2 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.50 | 749.3 | 30.02 | 762.6 | 58.1 | 14.5 | ..... | NW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.12 | 739.7 | 30.04 | 762.9 | 58.3 | 14.6 | 56 | SSE | 1.3 | 0.6 | ..... | ..... | 5 | NE | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 28.10 | 713.8 | 30.03 | 762.7 | 55.2 | 12.9 | 55 | NW | ..... | ..... | 4 | ..... | 5 | WNW | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.83 | 757.6 | 30.05 | 763.3 | 60.3 | 15.7 | 76 | SSW | ..... | ..... | 2 | ..... | 9 | W | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.87 | 758.6 | 30.04 | 762.9 | 59.5 | 15.3 | 66 | SW | 3.8 | 1.7 | ..... | ..... | 6 | SW | ..... | 0.106 | 2.7 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.74 | 755.4 | 30.06 | 763.5 | 59.0 | 15.0 | 68 | NNE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0.134 | 3.4 | ..... | Prof. P. Pigorini. |
| Florence | 29.77 | 756.2 | 30.03 | 762.7 | 66.2 | 19.0 | 57 | SW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 29.95 | 760.6 | 30.03 | 762.8 | 60.6 | 15.9 | 78 | SW | 1.8 | 0.8 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 30.00 | 762.1 | 30.06 | 763.4 | 55.6 | 13.1 | ..... | NW | 6.3 | 2.8 | ..... | ..... | 10 | NW | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.47 | 723.2 | 30.04 | 762.9 | 54.1 | 12.3 | 73 | NE | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.93 | 760.2 | 30.04 | 763.0 | 64.0 | 17.8 | 74 | NNW | ..... | ..... | 2 | ..... | 3 | NW | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.85 | 758.3 | 30.03 | 762.8 | 66.4 | 19.1 | 60 | SW | 8.1 | 3.6 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U | 29.86 | 758.4 | 30.06 | 763.5 | 65.8 | 18.8 | 64 | SW | ..... | ..... | 2 | ..... | 2 | SSW | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 68.0 | 20.6 | 63 | SSW | 4.9 | 2.2 | ..... | ..... | 5 | NNW | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.80 | 756.9 | 29.99 | 761.7 | 62.6 | 17.0 | 73 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.14 | 740.2 | 30.03 | 762.7 | 73.4 | 23.0 | 71 | SW | 3.8 | 1.7 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.73 | 755.2 | 29.98 | 761.6 | 64.4 | 18.0 | 48 | NE | 2.5 | 1.1 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.87 | 758.8 | 29.95 | 760.7 | 71.8 | 22.1 | 56 | SSW | ..... | ..... | 4 | ..... | 8 | W | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.42 | 747.2 | 30.05 | 763.2 | 61.2 | 16.2 | 75 | WSW | 0 | 0 | ..... | ..... | 3 | SE | ..... | 0 | 0 | ..... | Prof. F. Brioschi |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nagasaki | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Tokei (Yeddo) | 30.45 | 773.4 | 30.52 | 775.2 | 40.3 | 4.6 | 69 | ENE | 4.0 | 1.8 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy..... | The Observatory. |
| Tokei (Yeddo) University | 30.40 | 772.1 | 30.51 | 774.7 | 42.5 | 5.6 | 66 | ENE | 3 | 1.3 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Cloudy..... | Prof. P. V. Veeder. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The data are published as given. The rain-fall at the Obsezvatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 64.8 | 18.2 | 41 | N | 0.9 | 0.4 | ..... | 4c | 4c | NW | W | 0 | 0 | Cloudy ..... | L. Castillo, A. E. |
| Guadalajara | 25.04 | 636.1 | 30.04 | 762.9 | 57.2 | 14.0 | 65 | SE | 0.9 | 0.4 | ..... | 0 | 9 | ..... | SE | 0 | 0 | Cloudy..... | Prof. L. Perez. |
| Guanajuato | 23.65 | 601.6 | 29.88 | 759.1 | 62.2 | 16.8 | 57 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair ..... | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 61.3 | 16.3 | 79 | NW | 0.9 | 0.4 | ..... | 6ck | 0 | SW | ..... | 0 | 0 | ½ cloudy..... | Prof. M. Leal. |
| Mexico | 23.10 | 586.7 | 29.81 | 757.3 | 53.2 | 11.8 | 51 | Calm | 0 | 0 | ..... | 10c | 0 | W | ..... | 0 | 0 | Slightly fo'gy | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 59.9 | 15.5 | 68 | Calm | 0 | 0 | ..... | 0 | 8ks | ..... | SW | 0 | 0 | Cloudy..... | M. V. de Leon, M. E. |
| Puebla | 23.38 | 593.7 | 30.14 | 765.4 | 48.0 | 8.9 | 71 | E | ..... | ..... | ..... | 10cs | 0 | ..... | ..... | 0 | 0 | Cloudy.. ..... | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. F. R. Bayly. |
| San Luis Potosi | 29.96 | 760.9 | 29.97 | 761.2 | 65.3 | 18.5 | 82 | S | 1.8 | 0.8 | ..... | 10cs | ..... | W | ..... | 0 | 0 | Covered ..... | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Zacatecas | 29.99 | 761.7 | 30.02 | 762.4 | 64.4 | 18.0 | 71 | NW | ..... | ..... | ..... | 2c | 5s | SW | ..... | 0 | 0 | Hazy ..... | Prof. J. Rossell. |
| Puebla, (Catholic Institute) | ..... | ..... | ..... | ..... | 54.5 | 12.5 | 45 | S | 11.0 | 4.9 | ..... | ..... | 10 | ..... | S | 0.43 | 11.0 | Covered ..... | J. A. Bonilla, M. E. |
| Morelia | 23.37 | 593 8 | 30.16 | 766.0 | 46.2 | 7.9 | 64 | E | 2.7 | 1.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy ..... | P. Spina. [M.M. D. D. |
| Durango | 23.97 | 611.0 | ..... | ..... | 58.1 | 14.5 | 55 | S | 0.9 | 0.4 | ..... | ..... | 1 | ..... | S | 0 | 0 | Sl'tly hazy. | M. Tena, F. L. Param. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.17 | 766.4 | 30.17 | 766.4 | 48.2 | 9.0 | ..... | W | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 30.07 | 763.8 | 30.13 | 765 2 | 46.4 | 8.0 | ..... | N | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.110 | 2.8 | ..... | |
| Helder | 30.13 | 765 2 | 30.13 | 765.2 | 45.0 | 7.2 | ..... | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 30.15 | 765.8 | 30.15 | 765 8 | 51.4 | 10.8 | 70 | WNW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 30.10 | 764.5 | 30.15 | 765.7 | 52.0 | 11.1 | 60 | W | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy..... | H. v d Brink. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; tor Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instru'tal error and temperature. Inches. | Barometer. Corrected for instru'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.03 | 762.8 | 30.09 | 764.2 | 41.0 | 5.0 | 72 | SW | 4.3 | 1.9 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Rain & Snow | |
| Brönö | 29.98 | 761.6 | 30.02 | 762.6 | 39.2 | 4.0 | 72 | SSW | 18 | 8 | ..... | ..... | 9 | ..... | ..... | 0.063 | 1.6 | ..... | |
| Christiania | 29.95 | 760.8 | 30.10 | 764.6 | 39.6 | 4 2 | 77 | SSW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.80 | 756.9 | 29.84 | 758.0 | 40.3 | 4.6 | 56 | S | 7 | 3 | ..... | ..... | 10 | ..... | ..... | 0.098 | 2.5 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.36 | 745.7 | 29.55 | 750.6 | 59.7 | 15.4 | 89 | W | 16.1 | 7.2 | ..... | ..... | 8 | ..... | ..... | 0.276 | 7.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.87 | 733.3 | 29.91 | 759.6 | 56.7 | 13.7 | 93 | SE | 8.0 | 3.6 | ..... | ..... | 10 | SSW | ..... | 0.406 | 10.3 | Light rain... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 29.63 | 752.6 | 29.72 | 754.8 | 65.5 | 18.6 | 84 | W | 6.3 | 2.8 | ..... | ..... | 10 | ..... | ..... | 0.472 | 12.0 | Rain & fog.. | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.44 | 747.7 | 29.80 | 756.9 | 59.9 | 15.5 | 87 | S | 22.4 | 10.0 | ..... | ..... | 10 | ..... | ..... | 0.669 | 17.0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 29.47 | 748.5 | 29.64 | 750.3 | 64.4 | 18.0 | 80 | W | 11.2 | 5.0 | ..... | ..... | 3 | ..... | ..... | 0.228 | 5.8 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.71 | 754.6 | 29.72 | 754.8 | 85.1 | 29.5 | ..... | S | ..... | ..... | 5 | ..... | 2 | ..... | S | 2 | ..... | Blue sky | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Rio Douro, S. 26° 58′, E. 32° 37′ | ..... | ..... | 30.04 | 762.9 | 80.6 | 27.0 | ..... | ESE | ..... | ..... | 4 | ..... | 2 | ..... | SE | 2 | SE | D. clouds | J. T. d'Oliveria, Com'd't. |
| Sado, Porto Praya, Cape Verde Island | 30.04* | 763.0* | 30.05* | 763.3* | 86.0 | 30.0 | ..... | NE | ..... | ..... | 3 | ..... | 1 | ..... | NE | 2 | NE | D. clouds | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.72 | 754.9 | 29.73 | 755.1 | ..... | ..... | ..... | W | ..... | ..... | 3 | ..... | 5 | ..... | W | 1 | ..... | Blue sky | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreira, dos Amas, Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.54 | 750.4 | 29.97 | 761.2 | 50.7 | 10.4 | 95 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.61 | 752.1 | 30.02 | 762.6 | 57.7 | 14.3 | 53 | SSE | 11 | 5 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 29.87 | 758.8 | 30.12 | 765.1 | 46.0 | 7.8 | 89 | ESE | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Foggy | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.23 | 767.9 | 30.25 | 768.3 | 40.5 | 4.7 | 96 | E | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Light rain | Central Physical Obs. |
| Kuopio | 29.85 | 758.2 | 30.18 | 766.6 | 40.1 | 4.5 | 97 | S | 13 | 6 | ..... | ..... | 10 [n | ..... | ..... | Blank | Blank | ..... | Ch. Forsten. |
| Kieff | 29.40 | 746.8 | 30.03 | 762.7 | 58.5 | 14.7 | 55 | SE | 18 | 8 | ..... | ..... | 9c;k;ks; | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.93 | 760.3 | 30.00 | 762.1 | 56.1 | 13.4 | 62 | S | 9 | 4 | ..... | ..... | 8n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.00 | 762.0 | 30.02 | 762.5 | 58.8 | 14.9 | 73 | N | 2 | 1 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.90 | 759.4 | 30.46 | 773.7 | 49.6 | 9.8 | 66 | S | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.91 | 759.6 | 30.11 | 764.7 | 60.8 | 16.0 | 29 | ESE | 22 | 10 | ..... | ..... | 9ck | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 30.26 | 768.5 | 30.28 | 769.0 | 44.4 | 6.9 | 72 | SSE | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.62 | 727.0 | 30.05 | 763.2 | 53.4 | 11.9 | 90 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Physical Observatory |
| Astrakhan | 30.35 | 771.0 | 30.27 | 768.9 | 58.1 | 14.5 | 34 | E | 11 | 5 | ..... | ..... | 8s | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Krotkowo* | 30.00 | 761.9 | 30.47 | 773.9 | 60.8 | 16.0 | 29 | ENE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 30.22 | 767.5 | 30.49 | 774.4 | 58.1 | 14.5 | 42 | Calm | 0 | 0 | ..... | ..... | 3ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 29.54 | 750.3 | 30.48 | 774.2 | 61.7 | 16.5 | 18 | W | 4 | 2 | ..... | ..... | 2c | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Nukuss | 29.91 | 759.8 | 30.14 | 765.6 | 66.0 | 18.9 | 75 | ENE | 22 | 10 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.60 | 726.3 | 30.29 | 769.4 | 61.3 | 16.3 | 37 | NNW | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.92 | 760.0 | 30.47 | 774.0 | 29.7 | — 1.3 | 51 | W | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.91 | 759.7 | 30.25 | 768.4 | 23.2 | — 4.9 | 68 | W | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 30.07 | 763.8 | 30.21 | 767.4 | 58.5 | 14.7 | 39 | Calm | 0 | 0 | ..... | ..... | 9n | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.53 | 699.3 | 29.65 | 753.1 | 28.4 | — 2.0 | 74 | SW | 2 | 1 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 30.09 | 764.2 | 30.19 | 766.7 | 32.2 | 0.1 | 73 | S | 2 | 1 | ..... | ..... | 3c | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.27 m., or 1,621.37 ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.07 m., or 1,942.22 ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.90 | 759.4 | 30.00 | 762.1 | 59.0 | 15 | 70 | E | 1.0 | 0.44 | ..... | 6ck | 2k | W | ..... | 0 | 0 | Misty | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.82 | 757.4 | 29.87 | 758.8 | 75.7 | 24.3 | 58 | SE | 2.8 | 1.27 | ..... | 8 | 4 | S | ..... | 0.122 | 3.1 | Cloudy | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.97 | 684.9 | ..... | ..... | 64.8 | 18.2 | 77 | SW | 4.7 | 2.12 | ..... | ..... | 8 | ..... | ..... | 0.039 | 1.0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.72 | 704.0 | 29.91 | 759.8 | 60.8 | 16.0 | 65 | S | 17.9 | 8.00 | ..... | 0 | 10 | ..... | ..... | 0 | 0 | Covered | The Staff. |
| Murcia, Met. Obs'y | 29.81 | 757.1 | 29.96 | 760.9 | 67.6 | 19.8 | 71 | NE | 3.4 | 1.53 | ..... | 5 | 5 | E | ..... | 0 | 0 | Covered | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.85 | 732.9 | 29.74 | 755.4 | 57.9 | 14.4 | 96 | SE | 5.3 | 2.36 | ..... | ..... | 10 | ..... | ..... | 0.780 | 19.8 | Rainy | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.96 | 761.0 | 30.03 | 762.6 | 72.1 | 22.3 | 54 | NNW | 6.3 | 2.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 29.74 | 755.4 | 29.84 | 757.8 | 76.8 | 24.9 | 42 | E | 23.4 | 10.5 | ..... | 0 | 10 | ..... | SE | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.88 | 759.0 | 29.97 | 761.3 | 78.8 | 26.0 | 89 | W | 0 | 0 | ..... | 6kn | 4kn | S | S | 0.010 | 0.25 | Cloudy | Leonardo de Tejeda, Chief of Engineers. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATION. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.04 | 763.1 | 30.08 | 764.1 | 35.2 | 1.8 | ..... | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.354 | 9.0 | ..... | |
| Umea | 30.03 | 762.7 | 30.08 | 764.0 | 39.6 | 4.2 | 84 | SW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0.209 | 5.3 | ..... | |
| Hernosand | 30.09 | 764.2 | 30.14 | 765.5 | 45.3 | 7.4 | 57 | S | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0.122 | 3.1 | ..... | |
| Stockholm | 29.91 | 759.6 | 30.08 | 764.1 | 45.7 | 7.6 | 67 | ESE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.95 | 760.6 | 30.00 | 762.1 | 39.2 | 4.0 | 87 | SSW | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 30.00 | 761.9 | 30.07 | 763.8 | 46.2 | 7.9 | 60 | E | 2.5 | 1.1 | ..... | ..... | 10 | ..... | ESE | 0.001 | 0.02 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.65 | 727.7 | 30.09 | 764.2 | 50.5 | 10.3 | 71 | N | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0.358 | 9.1 | Clear | The Observatory. |
| Zurich | 28.48 | 723.3 | 30.12 | 765.0 | 52.2 | 11.2 | 64 | W | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | The Observatory. |
| ..... | | | | | | | | | | | | | | | | | | | |
| ..... | | | | | | | | | | | | | | | | | | | |
| ..... | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +3.5 mm.; Thermometer, —0.3 cent.; Relative Humidity, +13 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.05 | 763.3 | 60.4 | 15.8 | 35 | NE | 2 | 1.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stéfanides. |
| Varna | ..... | ..... | 30.06 | 763.5 | 64.2 | 17.9 | ..... | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | Imperial Observatory. |
| Beirut, (Syria,) Lee Obs'y | 29.83 | 757.8 | 29.95 | 760.7 | 68.5 | 20.3 | 68 | SW | ..... | ..... | 2 | ..... | 1ks | ..... | ..... | 0.76 | 19.3 | D. clouds | Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.18 | 741.2 | 29.25 | 742.9 | 33.7 | 0.9 | ..... | NE | 44 | 19.7 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Sleeting | Hon. J. Ferguson. |
| Brockville, Ontario | 29.08 | 738.6 | 29.38 | 746.2 | 37 | 2.8 | ..... | NE | 3 | 1.3 | ..... | ..... | 10s | ..... | E | 0.24 | 6.1 | Light rain | W. R. Bigg. |
| *Chatham, N B | 29.12 | 739.6 | 29.16 | 741.2 | 34 | 1.1 | 94 | NE | 19 | 8.5 | ..... | ..... | 10n | ..... | NE | 0.79 | 20.1 | Light snow | G. A. Blair. |
| Charlottetown, P. E. Island | 28.91 | 734.3 | 28.95 | 735.3 | 36 | 2.2 | 95 | NE | 18 | 8.0 | ..... | ..... | 10n | ..... | Calm | 0.135 | 3.43 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.10 | 739.1 | 29.30 | 744.2 | 37.8 | 3.2 | 94 | NE | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0.390 | 9.91 | Drizzling | James Smith, M. A. |
| Dalhousie, N. B | 29.27 | 743.4 | 29.31 | 744.5 | ..... | ..... | ..... | N | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.2 | 5. | Gloomy | H. A. Johnson. |
| Esquimault, B. C | 29.93 | 760.2 | 29.97 | 761.2 | 49.8 | 9.9 | 89 | SW | ..... | ..... | ..... | 1cs | ..... | ..... | ..... | 0 | 0 | Clear | W. H. Revis. |
| *Father Point, Quebec | 29.33 | 745.0 | 29.36 | 745.7 | 34 | 1.1 | 86 | E | 49 | 21.9 | ..... | ..... | 10n | ..... | NE | 0.01 | 0.3 | Threatening | J. McWilliams. |
| Fredericton, N. B | 29.08 | 738.6 | 29.14 | 740.1 | 35.9 | 2.2 | 77 | N | 15 | 6.7 | ..... | ..... | 10n | ..... | ..... | 0.05 | 1.3 | Drizzling | Prof. Harrison. |
| *Fort Garry Manitoba | 28.92 | 734.6 | 29.77 | 756.1 | 32 | 0.0 | 90 | NE | 4 | 1.8 | ..... | 5k | 5k | NW | ..... | 0 | 0 | Cloudy | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Granton, Ontario | 28.95 | 720.1 | 29.46 | 748.3 | 37 | 2.8 | 90 | NW | ..... | ..... | 2 | ..... | 10n | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| *Halifax, N. S | 28.70 | 729.0 | 28.83 | 732.3 | 37 | 2.8 | 98 | N | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | James Grant. |
| Hamilton, Ontario | 29.03 | 737.3 | 29.40 | 746.7 | 42.2 | 5.7 | 73 | SW | ..... | ..... | 1 | 10ck | ..... | ..... | ..... | 0.159 | 4.04 | Light rain | F. Allison, M. A. |
| Heart's Content, N. F | 29.20 | 741.7 | 29.22 | 742.2 | 36 | 2.2 | 90 | E | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Cloudy | Geo. Dickson, M. A. |
| *Kingston, Ontario | 28.94 | 735.1 | 29.29 | 744.0 | 39 | 3.9 | 88 | NE | 2 | 0.9 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | E. Weedon. |
| Little Glace Bay, N. S | 29.86 | 758.4 | 29.90 | 759.4 | 33 | 0.6 | ..... | E | 14 | 6.3 | ..... | ..... | 10n | ..... | Calm | 0.02 | 0.5 | Light rain | S. Woods, M. A. |
| *Montreal, Quebec | 29.10 | 739.1 | 29.30 | 744.2 | 36 | 2.2 | 95 | NE | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | 0.51 | 13.0 | Raining | C. H. Rigby. |
| *Parry Sound, Ontario | 28.69 | 728.7 | 29.39 | 746.5 | 34 | 1.1 | 79 | W | 2 | 0.9 | ..... | 2cs | 0 | W | ..... | 0.27 | 6.9 | Heavy rain | C. H. McLeod, C. E. |
| Peterboro, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | Rev. R. Mosley. |
| Port Dover, Ontario | 28.71 | 729.2 | 29.41 | 747.0 | 40 | 4.4 | 84 | NW | 14 | 6.3 | ..... | 8k | 0 | NW | ..... | ..... | ..... | ..... | J. F. Jeffers, B. A. |
| Port Hastings, N. S | 28.78 | 731.0 | 28.83 | 732.3 | 36.8 | 2.7 | ..... | NE | 6 | 2.7 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | H. Morgan. |
| Port Stanley, Ontario | 28.79 | 731 3 | 29.44 | 747.8 | 40 | 4.4 | 75 | W | 18 | 8.0 | ..... | 10k | 0 | NW | ..... | 0 | 0 | Foggy | Peter Grant. |
| *Quebec, Quebec | 29.02 | 737.1 | 29 34 | 745.2 | 34 | 1.1 | 90 | NE | ..... | ..... | 3 | ..... | 10n | ..... | NE | 0 | 0 | Cloudy | M. Payne. |
| *Rockliffe, Ontario | 28.93 | 734.8 | 29.39 | 746.5 | 38 | 3.3 | 90 | NW | 4 | 1.8 | ..... | ..... | 10k | ..... | NE | 0.10 | 2.5 | Light snow | Capt. Ashe, R. N. |
| St. Andrews, N. B | 29.02 | 737.1 | 29.07 | 738.4 | 35 | 1.7 | 89 | N | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | Inap. | Inap. | Light rain | W. H. McIntyre. |
| St. John, N. B | 28.86 | 733.0 | 29.02 | 737.1 | 34 | 1.1 | 94 | NE | 11 | 4.9 | ..... | ..... | 10n | ..... | ..... | 0.07 | 1.8 | Halling | Dr. Gove. |
| *Saugeen, Ontario | 28.70 | 729.0 | 29.42 | 747.3 | 39 | 3.9 | 95 | N | 10 | 4.5 | ..... | 2cs | 0 | ..... | ..... | 0.120 | 3.05 | Overcast | G. Murdock, C. E. |
| Stayner, Ontario | 28.59 | 726.2 | 29.37 | 746.0 | 39 | 3.9 | 69 | NW | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | K. Stewart. |
| Stratford, Ontario | 28.14 | 714.7 | 29.42 | 747.3 | 38.0 | 3.3 | 86 | NW | 18 | 8.0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear | R. J. Cole. |
| *Sydney, C. B | 28.88 | 733.5 | 28.91 | 734.3 | 36 | 2.2 | 97 | NE | 18 | 8.0 | ..... | 10s | 10n | ..... | ..... | 0 | 0 | Cloudy | C. J. MacGregor, M. A. |
| *Toronto, Ontario | 29.01 | 736.8 | 29.39 | 746.5 | 40 | 4.4 | 51 | NW | 5 | 2.2 | ..... | 5cs | 0 | W | NE | 0.83 | 21.1 | Light rain | T. C. Hill. |
| Windsor, N. S | 28.81 | 731.8 | 28.90 | 734.0 | 37.0 | 2.8 | 90 | N | 18 | 8.0 | ..... | ..... | 10n | ..... | ..... | 0.06 | 1.5 | Light rain | Magnetic Observatory. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | J. Montgomery. |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 33.0 | 0.6 | 100 | NE | ..... | ..... | ..... | 5 | 5n | ..... | ..... | 0.06 | 1.5 | Foggy | John Delany. |
| ..... | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0–10 | CLOUDS. Amount. Up'er 0–10 | CLOUDS. Amount. Low'r 0–10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.02 | 737.1 | 29.24 | 742.7 | 40 | 4.4 | 87 | NW | 2 | 0.9 | ..... | ..... | 10ks | ..... | NW | 0.48 | 12.2 | Cloudy | |
| Alpena, Michigan | 28.84 | 732.5 | 29.48 | 748.8 | 36 | 2.2 | 70 | NW | 16 | 7.2 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Atlantic City, New Jersey | 29.31 | 744.5 | 29.33 | 745.0 | 50 | 10.0 | 58 | W | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Augusta, Georgia | 29.48 | 748.8 | 29.66 | 753.4 | 53 | 11.7 | 73 | S | 3 | 1.3 | ..... | 5ck | 5s | NW | Calm | 0 | 0 | Cloudy | |
| Baltimore, Maryland | 29.31 | 744.5 | 29.36 | 745.7 | 51 | 10.6 | 59 | W | 4 | 1.8 | ..... | 5ck | Haze | NW | Calm | 0 | 0 | Fair | |
| Barnegat, New Jersey | 29.27 | 743.4 | 29.29 | 744.0 | 51 | 10.6 | 45 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Bismarck, Dakota | 27.89 | 708.4 | 29.75 | 755.6 | 40 | 4.4 | 82 | SE | 2 | 0.9 | ..... | ..... | Sm'e | ..... | ..... | Inap. | Inap. | Dense smoke | |
| Boise City, Idaho | 27.01 | 686.0 | 29.89 | 759.2 | 46 | 7.8 | 68 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Boston, Massachusetts | 29.04 | 737.6 | 29.19 | 741.4 | 38 | 3.3 | 91 | N | 8 | 3.6 | ..... | ..... | 10n;fg | ..... | NE | 0.16 | 4.1 | Light rain | |
| Brackettville, Texas | 28.70 | 729.0 | 29.71 | 754.6 | 64 | 17.8 | 58 | E | 4 | 1.8 | ..... | 2c | 2s | S | Calm | 0 | 0 | Fair | |
| Breckenridge, Minnesota | 28.74 | 730.0 | 29.75 | 755.6 | 33 | 0.6 | 89 | S | 4 | 1.8 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Brownsville, Texas | 29.80 | 756.9 | 29.87 | 758.7 | 66 | 18.9 | 84 | SE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 28.64 | 727.4 | 29.32 | 744.7 | 40 | 4.4 | 91 | SW | 7 | 3.1 | ..... | 1ck | 0 | Calm | ..... | 0 | 0 | Clear | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 55 | 12.8 | 56 | SW | ..... | ..... | 1 | 5cs | 5ks | Calm | SE | 0 | 0 | Fair | |
| Burlington, Vermont | 29.01 | 736.8 | 29.27 | 743.4 | 35 | 1.7 | 90 | N | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.24 | 6.1 | Light rain | |
| Cairo, Illinois | 29.38 | 746.2 | 29.77 | 756.1 | 54 | 12.2 | 61 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Grant, Arizona | 25.12 | 638.0 | 29.92 | 760.0 | 57 | 13.9 | 36 | NE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | 26.59 | 675.4 | 30.08 | 764.0 | 54 | 12.2 | 67 | Calm | 0 | 0 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.22 | 691.4 | 29.79 | 756.7 | 48 | 8.9 | 92 | Calm | 0 | 0 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Cape Hatteras, N. Carolina | 29.52 | 749.8 | 29.53 | 750.0 | 56 | 13.3 | 69 | W | 8 | 3.6 | ..... | 8cs | 0 | W | ..... | 0 | 0 | Fair | |
| Cape Henry, Virginia | 29.40 | 746.7 | 29.42 | 747.5 | 52 | 11.1 | 54 | SW | 12 | 5.4 | ..... | 5cs | 2s | SW | SW | 0 | 0 | Cloudy | |
| Cape Lookout, N. Carolina | 29.53 | 750.0 | 29.54 | 750.3 | 59 | 15.0 | 65 | W | 13 | 5.8 | ..... | 8cs | 0 | W | ..... | 0 | 0 | Cloudy | |
| Cape May, New Jersey | 29.34 | 745.2 | 29.37 | 746.0 | 48 | 8.9 | 70 | NW | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 29.64 | 752.8 | 29.71 | 754.6 | 57 | 13.9 | 63 | W | 12 | 5.4 | ..... | 8ck;cs | 0 | W | ..... | 0 | 0 | Fair | |
| Cheyenne, Wyoming | 23.85 | 605.8 | 29.79 | 756.7 | 42 | 5.6 | 42 | NW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.00 | 736.6 | 29.69 | 754.1 | 40 | 4.4 | 73 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cincinnati Ohio | 28.94 | 735.1 | 29.58 | 751.3 | 47 | 8.3 | 55 | N | 8 | 3.6 | ..... | 1k | 0 | NW | ..... | Inap. | Inap. | Clear | |
| Cleveland, Ohio | 28.77 | 730.7 | 29.49 | 749.0 | 40 | 4.4 | 82 | W | 13 | 5.8 | ..... | ..... | 10s | ..... | W | 0.15 | 3.8 | Cloudy | |
| Concho, Texas | 27.89 | 708.4 | 29.53 | 750.0 | 56 | 13.3 | 73 | S | ..... | ..... | 5 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.33 | 745.0 | 29.74 | 755.7 | 59 | 15.0 | 70 | SW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Davenport, Iowa | 29.11 | 739.4 | 29.76 | 755.9 | 36 | 2.2 | 71 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Deadwood, Dakota | 25.21 | 640.3 | ..... | ..... | 39 | 3.9 | 82 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Denison, Texas | 28.96 | 735.6 | 29.73 | 755.1 | 62 | 16.7 | 56 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denver, Colorado | 24.60 | 624.8 | 29.82 | 757.4 | 42 | 5.6 | 42 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Detroit, Michigan | 28.82 | 732.0 | 29.48 | 748.8 | 40 | 4.4 | 82 | NW | 9 | 4.0 | ..... | ..... | 10s | ..... | NW | 0.01 | 0.3 | Cloudy | |
| Dodge City, Kansas | 27.18 | 690.4 | 29.47 | 748.5 | 41 | 5.0 | 82 | N | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 29.05 | 737.9 | 29.76 | 755.9 | 36 | 2.2 | 61 | N | 2 | 0.9 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Duluth, Minnesota | 29.06 | 738.1 | 29.74 | 755.4 | 36 | 2.2 | 53 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eagle Pass, Texas | 29.05 | 737.9 | 29.78 | 756.4 | 56 | 13.3 | 87 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 28.98 | 736.1 | 29.04 | 737.6 | 38 | 2.2 | 90 | N | 17 | 7.6 | ..... | ..... | 10n | ..... | ..... | 0.44 | 11.2 | Light rain | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 65 | 18.3 | 35 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 28.68 | 728.5 | 29.37 | 746.0 | 44 | 6.7 | 76 | W | 4 | 1.8 | ..... | ..... | 10s | ..... | ..... | 0.02 | 0.5 | Cloudy | |
| Escanaba, Michigan | 29.02 | 737.1 | 29.68 | 753.9 | 33 | 0.6 | 70 | NW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Florence, Arizona | 28.17 | 715.5 | 29.77 | 756.1 | 58 | 14.4 | 53 | Calm | 0 | 0 | ..... | 5cs | 0 | E | ..... | 0 | 0 | Fair | |
| Fort Bayard, New Mexico | 23.99 | 609.5 | 29.99 | 761.7 | 46 | 7.8 | 39 | N | 2 | 0.9 | ..... | 5k | 0 | ..... | ..... | 0 | 0 | Fair | |
| Fort Craig, New Mexico | 25.32 | 643.1 | ..... | ..... | 45 | 7.2 | 46 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.04 | 636.0 | 30.01 | 762.0 | 61 | 16.1 | 44 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.16 | 740.7 | 29.69 | 754.1 | 51 | 10.6 | 86 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.46 | 722.9 | 29.70 | 754.4 | 61 | 16.1 | 55 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 28.92 | 734.6 | 28.96 | 735.6 | 22 | — 5.6 | 86 | E | 43 | 19.2 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Fort Sill, Indian Territory | 28.51 | 724.1 | 29.59 | 751.6 | 57 | 13.9 | 52 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Galveston, Texas | 29.86 | 758.4 | 29.90 | 759.4 | 64 | 17.8 | 89 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 28.99 | 736.3 | 29.64 | 752.8 | 40 | 4.4 | 65 | N | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianapolis, Indiana | 28.86 | 733.0 | 29.63 | 752.6 | 44 | 6.7 | 68 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianola, Texas | 29.87 | 758.7 | 29.99 | 759.4 | 65 | 18.3 | 84 | S | 5 | 2 2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.62 | 726.9 | 29.71 | 754.6 | 62 | 16.7 | 41 | SW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 29.81 | 757.2 | 29.83 | 757.7 | 64 | 17.8 | 63 | SW | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.12 | 739.6 | 29.73 | 755 1 | 45 | 7.2 | 68 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Key West, Florida | 29.98 | 761.5 | 30.01 | 762.2 | 69 | 20.6 | 61 | NW | 12 | 5.4 | ..... | 5k | 0 | NW | ..... | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 29.47 | 748.5 | 29.49 | 749.0 | 52 | 11.1 | 66 | W | 14 | 6.3 | ..... | 5k | 0 | N | ..... | 0 | 0 | Fair | |
| Knoxville, Tennessee | 28.66 | 728.0 | 29.64 | 752.8 | 52 | 11.1 | 54 | SW | 2 | 0.9 | ..... | 8ck | 0 | SW | ..... | 0 | 0 | Cloudy | |
| La Crosse, Wisconsin | 29.02 | 737.1 | 29.76 | 755.9 | 37 | 2.8 | 63 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 25.90 | 657.8 | 30.05 | 763.3 | 44 | 6.7 | 67 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.39 | 746.5 | 29.73 | 755.1 | 60 | 15.6 | 88 | SE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 28.95 | 735.3 | 29.80 | 756.9 | 42 | 5.6 | 74 | Calm | 0 | 0 | ..... | Haze | Haze | ..... | ..... | 0 | 0 | Hazy | |
| Los Angeles, California | 29.48 | 748.8 | 29.82 | 757.4 | 54 | 12.2 | 87 | E | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Louisville, Kentucky | 29.07 | 738.4 | 29.61 | 752.1 | 50 | 10.0 | 32 | NW | 15 | 6.7 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Lynchburg, Virginia | 28.80 | 731.5 | 29.46 | 748.3 | 50 | 10.0 | 57 | S | 1 | 0.4 | ..... | 0 | 8ks | ..... | Calm | 0 | 0 | Cloudy | |
| Marquette, Michigan | 28.99 | 736.3 | 29.70 | 754.4 | 35 | 1.7 | 80 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.12 | 3.0 | Clear | |
| Mason, Texas | 28.19 | 716.0 | 29.92 | 760.0 | 53 | 11.7 | 73 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.44 | 747.8 | 29.75 | 755.6 | 55 | 12.8 | 73 | Calm | 0 | 0 | ..... | 0 | 2ks;sm' | ..... | NW;Calm | 0 | 0 | Fair | |
| Milwaukee, Wisconsin | 28.96 | 735.6 | 29.69 | 754.1 | 38 | 3.3 | 81 | NW | 7 | 3.1 | ..... | c | Haze | ..... | ..... | 0 | 0 | Clear | |
| Mobile, Alabama | 29.83 | 757.7 | 29.87 | 758.7 | 60 | 15.6 | 71 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Montgomery, Alabama | 29.55 | 750.6 | 29.78 | 756.4 | 58 | 14.4 | 55 | SW | 10 | 4.5 | ..... | 5ck | Haze | NW | Calm | 0 | 0 | Fair | |
| Morgantown, West Virginia | 28.41 | 721.6 | 29.43 | 747.5 | 47 | 8.3 | 70 | W | 16 | 7.2 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Mt. Washington, N. H. | 22.95 | 582.9 | 29.31 | 744.5 | 26 | — 3.3 | 100 | NE | 21 | 9.4 | ..... | ..... | Fog | ..... | NE | 0.39 | 9.9 | Foggy | |
| Nashville, Tennessee | 29.17 | 740.9 | 29.70 | 754.4 | 52 | 11.1 | 66 | W | 2 | 0.9 | ..... | ..... | Haze | ..... | Calm | 0 | 0 | Hazy | |
| New Haven, Connecticut | 29.14 | 740.1 | 29.25 | 742.9 | 47 | 8.3 | 62 | NW | 12 | 5.4 | ..... | 5cs | 0 | ..... | ..... | 0.02 | 0.5 | Fair | |
| New London, Connecticut | 29.17 | 740.9 | 29.22 | 742.2 | 45 | 7.2 | 76 | W | 8 | 3.6 | ..... | 2ck | 5s | W | W | 0.02 | 0.5 | Fair | |
| New Orleans, Louisiana | 29.82 | 757.4 | 29.88 | 758.9 | 60 | 15.6 | 77 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Newport, Rhode Island | 29.16 | 740.7 | 29.20 | 741.7 | 42 | 5.6 | 74 | NW | 10 | 4.5 | ..... | 8c;k | 0 | NW | ..... | 0.14 | 3.6 | Fair | |
| New York, New York | 29.12 | 739.6 | 29.29 | 744.0 | 44 | 6.7 | 60 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Norfolk, Virginia | 29.39 | 746 5 | 29.45 | 748.0 | 53 | 11.7 | 48 | SW | 5 | 2.2 | ..... | 5cs | 2ks | Calm | Calm | 0 | 0 | Fair | |
| North Platte, Nebraska | 26.96 | 684.8 | 29.57 | 751.1 | 35 | 1.7 | 85 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 29.94 | 760.5 | 29.98 | 761.5 | 50 | 10.0 | 88 | S | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Omaha, Nebraska | 28.72 | 729.5 | 29.82 | 757.4 | 36 | 2.2 | 90 | W | 4 | 1.8 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Oswego, New York | 29.03 | 737.3 | 29.34 | 745.2 | 43 | 6.1 | 75 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Pembina, Dakota | 28.87 | 733.3 | 29.71 | 754.6 | 35 | 1.7 | 70 | SE | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Philadelphia, Pennsylvania | 29.28 | 743.7 | 29.33 | 745.0 | 50 | 10 0 | 38 | W | 12 | 5.4 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Phœnix, Arizona | 28.63 | 727.2 | 30.42 | 772.7 | 57 | 13.9 | 52 | S | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.71 | 449.8 | 29.92 | 760.0 | 17 | — 8.3 | 67 | W | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pioche, Nevada | 23.92 | 607.6 | 29.69 | 754.1 | 48 | 8.9 | 40 | NW | 3 | 1.3 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 28.61 | 726.7 | 29.39 | 746.5 | 46 | 7.8 | 77 | NW | 10 | 4.5 | ..... | 10k | 0 | NW | ..... | 0.03 | 0.8 | Cloudy | |
| Port Huron, Michigan | 28.80 | 731.5 | 29.45 | 748.0 | 40 | 4.4 | 91 | NW | 11 | 4.9 | ..... | ..... | 10ks | ..... | NW | 0.11 | 2.8 | Cloudy | |
| Portland, Maine | 29.12 | 739.6 | 29.17 | 740.9 | 40 | 4.4 | 82 | N | 14 | 6.3 | ..... | ..... | 10n | ..... | N | 0.10 | 2.5 | Light rain | |
| Portland, Oregon | 30.01 | 762.2 | 30.12 | 765.0 | 47 | 8.3 | 85 | Calm | 0 | 0 | ..... | ..... | 8s | ..... | Calm | 0 | 0 | Cloudy | |
| Prescott, Arizona | 24.62 | 625.3 | 29.98 | 761.5 | 43 | 6.1 | 51 | S | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Punta Rassa, Florida | 29.98 | 761.5 | 30.00 | 762.0 | 69 | 20.6 | 61 | W | 12 | 5.4 | ..... | 5k | 0 | W | ..... | 0 | 0 | Fair | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Red Bluff, California | 29.41 | 747.0 | 29.76 | 755.9 | 61 | 16.1 | 66 | E | 4 | 1.8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear. | |
| Rochester, New York | 28.71 | 729.2 | 29.31 | 744.5 | 39 | 3.9 | 91 | W | 1 | 0.4 | ..... | 2c | Fog | Calm | Calm | 0 | 0 | Fair | |
| Roseburg, Oregon | 29.49 | 749.0 | 30.06 | 763.5 | 46 | 7.8 | 88 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sacramento, California | 29.67 | 753.6 | 29.75 | 755.6 | 59 | 15.0 | 88 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.19 | 741.4 | 29.76 | 755.9 | 49 | 9.4 | 51 | NW | 9 | 4.0 | ..... | 0 | Sm'e | ..... | ..... | Inap. | Inap. | Clear | |
| St. Marks, Florida | 29.65 | 753.1 | 29.87 | 758.7 | 60 | 15 6 | 82 | W | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul, Minnesota | 28.92 | 734.6 | 29.70 | 755.9 | 33 | 0.6 | 69 | Calm | 0 | 0 | ..... | 5k | 0 | NW | ..... | 0 | 0 | Fair | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.47 | 646.9 | 29.80 | 756.9 | 48 | 8.9 | 43 | SE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| San Antonio, Texas | 29.19 | 741.4 | 29.77 | 756.1 | 54 | 12.2 | 87 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Diego, California | 29.80 | 756.9 | 29.87 | 758.7 | 57 | 13.9 | 87 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 28.88 | 733.5 | 29.54 | 750.3 | 41 | 5.0 | 91 | NW | 22 | 9.8 | ..... | ..... | 10s | ..... | NW | 0.27 | 6.9 | Cloudy | |
| Sandy Hook, New Jersey | 29.27 | 743.4 | 29.29 | 744.0 | 46 | 7.8 | 69 | W | 21 | 9.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Francisco, California | 29.73 | 755.1 | 29.79 | 756.7 | 54 | 12.2 | 87 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Santa Fé, New Mexico | 23.16 | 588.3 | 29.70 | 754.4 | 45 | 7.2 | 24 | SE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 29.63 | 752.6 | 29.72 | 754.9 | 62 | 16.7 | 61 | W | 11 | 4.9 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Shreveport, Louisiana | 29.62 | 752.3 | 29.83 | 757.7 | 63 | 17.2 | 67 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Smithville, North Carolina | 29.58 | 751.3 | 29.61 | 752.1 | 57 | 13.9 | 69 | SW | 14 | 6.3 | ..... | ..... | 10ks | ..... | W | 0 | 0 | Cloudy | |
| Springfield, Massachusetts | 29.06 | 738.1 | 29.18 | 741.2 | 43 | 6.1 | 67 | N | 3 | 1.3 | ..... | ..... | 10s | ..... | N | 0.09 | 2.3 | Cloudy | |
| Stockton, Texas | 26.74 | 679.2 | 29.74 | 755.4 | 46 | 7.8 | 54 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.13 | 739.9 | 29.18 | 741.2 | 38 | 3.3 | 91 | N | 16 | 7.2 | ..... | ..... | 10n | ..... | N | 0.07 | 1.8 | Light rain | |
| Toledo, Ohio | 28.86 | 733.0 | 29.52 | 749.8 | 42 | 5.6 | 66 | W | 12 | 5.4 | ..... | ..... | 10s | ..... | W | 0.04 | 1.0 | Cloudy | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 56 | 13.3 | 87 | W | 1 | 0.4 | ..... | ..... | 8a | ..... | S | Inap | Inap. | Light rain | |
| Tybee Island, Georgia | 29.69 | 754.1 | 29.72 | 754.9 | 57 | 13.9 | 76 | SW | 8 | 3.6 | ..... | 5ck | Haze | W | Calm | 0 | 0 | Fair | |
| Umatilla, Oregon | 29.57 | 751.1 | ..... | ..... | 54 | 12.2 | 74 | E | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Vicksburg, Mississippi | 29.60 | 751.8 | 29.86 | 758.4 | 60 | 15.6 | 71 | SW | 5 | 2.2 | ..... | 2c | 0 | W | ..... | 0 | 0 | Fair | |
| Virginia City, Montana | 24.07 | 611.4 | 29.55 | 750.6 | 44 | 6.7 | 60 | N | 1 | 0.4 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Visalia, California | 29.42 | 747.3 | 29.79 | 756.7 | 53 | 11.7 | 86 | SE | 2 | 0.9 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Washington, D. C. | 29.28 | 743.7 | 29.39 | 746.5 | 51 | 10.6 | 50 | W | 4 | 1.8 | ..... | 5k | Sm'e | W | ..... | 0 | 0 | Fair | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 48 | 8.9 | 43 | S | ..... | ..... | 1 | 5ck | 0 | Calm | ..... | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 29.50 | 749.3 | 29.58 | 751.3 | 51 | 10.6 | 65 | SW | 6 | 2.7 | ..... | 8k | 0 | SW | ..... | 0 | 0 | Fair | |
| Winnemucca, Nevada | 25.52 | 648.2 | 29.88 | 758.9 | 40 | 4.4 | 73 | S | 3 | 1.3 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Wood's Holl, Mass | 29.14 | 740.1 | 29.19 | 741.4 | 43 | 6.1 | 83 | NW | 10 | 4.5 | ..... | ..... | 10s | ..... | NW | 0.01 | 0.3 | Cloudy | |
| Yankton, Dakota | 28.58 | 725.9 | 29.90 | 759.4 | 33 | 0.6 | 84 | SW | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Yuma, Arizona | 29.61 | 752.1 | 29.78 | 756.4 | 61 | 16.1 | 49 | SW | 6 | 2.7 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 29.83 | 757.7 | 29.88 | 758.9 | 6.5 | —14.2 | 88 | NW | 15 | 6.7 | ..... | 3c | 0 | W | ..... | 0 | 0 | Fair | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 29.97 | 761.2 | 29.99 | 761.7 | 72 | 22.2 | 52 | N | 8.4 | 3.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.11 | 764.8 | 30.12 | 765.0 | 76 | 24.4 | 81 | N | 9 | 4.0 | ..... | 8c | 2s | N | Calm | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.88 | 758.9 | 29.96 | 761.0 | 76.5 | 24.7 | ..... | NW | 10 | 4.5 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | 29.97 | 761.2 | 29.97 | 761.2 | 83 | 28.3 | 79 | NE | ..... | ..... | 3 | 4c | 5k | E | ..... | 0 | 0 | Fair | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.24 | 641.1 | ..... | ..... | 69.5 | 20.8 | 83 | Calm | ..... | ..... | 0 | 4k | 4s;ks | ..... | ..... | 0.05 | 1.3 | ..... | Thomas Herran. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 metres; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde, 2,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,456 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,362 ft., or 1,573.4 m.; Fodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,627.9 ft., or 813.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,916.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,810 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.77 | 756.1 | 56 | 13.3 | 55 | 12.8 | 87 | SW | 20 | 8.9 | ..... | ..... | 2 | ..... | SW | 0 | 0 | ..... | ..... | Stormy..... | |
| Navy Yard, Pensacola, Fla. | 30.00 | 762.0 | 63 | 17.2 | 63 | 17.2 | 94 | W | 19 | 8.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear ..... | |
| Navy Yard, Portsmouth, N.H | 29.32 | 744.7 | 76 | 24.4 | 40 | 4.4 | 82 | NNE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.3 | 8. | ..... | ..... | Cloudy..... | |
| Naval Hospital, Yokohama, Japan..... | 30.40* | 772.1* | 52 | 11.1 | 43 | 6.1 | 56 | ENE | ..... | ..... | 4 | ..... | 10ks | ..... | W | 0 | 0 | ..... | ..... | Gloomy..... | |
| Adams. Panama..... | 30.02 | 762.5 | 83 | 28.3 | 81 | 27.2 | 83 | NW | ..... | ..... | 0–1 | ..... | 5 | ..... | ..... | ..... | ..... | Smooth | ..... | Misty..... | |
| Alliance, Naples, Italy..... | 30.03‡ | 762.7‡ | ..... | ..... | 63 | 17.2 | 72 | SW | ..... | ..... | 1–2 | ..... | 5 | ..... | SW | ..... | ..... | None | ..... | Pleasant..... | |
| Ashuelot. Shanghai, China ..... | 30.30 | 769.6 | 51 | 10.6 | 51 | 10.6 | 93 | NE | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Drizzling..... | |
| Canonicus, New Orleans, La..... | 29.89 | 759.2 | 47 | 8.3 | 60 | 15.6 | 88 | SSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Colorado, New York, N. Y..... | 29.27‡ | 743.4‡ | ..... | ..... | 49 | 9.4 | 50 | WSW | 8 | 3.6 | ..... | ..... | 2 | ..... | W | 0 | 0 | ..... | ..... | Hazy..... | |
| Constellation, N. 42° 52′ W. 57° 58′..... | 29.74‡ | 755.4‡ | ..... | ..... | 41 | 5.0 | 91 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | SW | ..... | ..... | Heavy | SW | Foggy..... | |
| Constitution, Havre, France..... | 30.11‡ | 764.8‡ | ..... | ..... | 50 | 10.0 | 79 | NNW | ..... | ..... | 1 | ..... | 3 | ..... | Calm | ..... | ..... | ..... | ..... | Pleasant..... | |
| Despatch, Constantinople, Turkey. | 30.05‡ | 763.3‡ | ..... | ..... | 60 | 15.6 | 44 | NE | ..... | ..... | 2 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Clear..... | |
| Enterprise, N. 34° 01′, W. 74° 35′..... | 29.75† | 755.6† | ..... | ..... | 64 | 17.8 | 58 | WNW | ..... | ..... | 6 | ..... | 2 | ..... | WNW | ..... | ..... | Rough | W | Fair ..... | |
| Franklin, Norfolk, Va..... | 29.56 | 750.8 | 61 | 16.1 | 45 | 7.2 | 84 | WSW | 3 | 1.3 | ..... | ..... | 5 | ..... | WSW | 0 | 0 | ..... | ..... | D. clouds..... | |
| Gettysburg Valetta, Malta..... | 29.99‡ | 761.7‡ | ..... | ..... | 76 | 24.4 | 91 | WSW | ..... | ..... | 1 | ..... | 2 | ..... | Calm | 0 | 0 | ..... | ..... | Clear..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.08 | 764.0 | 78 | 25.6 | 79 | 26.1 | 51 | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear. ..... | |
| Hartford, Montevideo, Uraguay .... | 30.03 | 762.7 | 68 | 20.0 | 65 | 18.3 | 89 | ESE | ..... | ..... | ..... | ..... | 8 | ..... | ESE | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Marion. Off Vourlah Bay, Turkey | 30.12 | 765.0 | 62 | 16.7 | 64 | 17.8 | 68 | W | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | Smooth | ..... | Fair..... | |
| Michigan, Erie, Pa..... | 28.86 | 733.0 | 55 | 12.8 | 43 | 6.1 | 75 | W | ..... | ..... | 1 | ..... | 10 | ..... | W | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monocacy. Shanghai, China..... | 30.14‡ | 765.5‡ | ..... | ..... | 51 | 10.6 | 86 | E | ..... | ..... | 1–2 | ..... | 10 | ..... | E | ..... | ..... | ..... | ..... | Overcast..... | |
| New Hampshire, Port Royal, S. C..... | 29.87 | 758.7 | 62 | 16.7 | 60 | 15.6 | 65 | WSW | 18 | 8.0 | ..... | ..... | 8 | ..... | WNW | ..... | ..... | ..... | ..... | Fair ..... | |
| Omaha, St. Thomas, W. I..... | 30.02* | 762.5* | 83 | 28.3 | 83 | 28.3 | 71 | S | 2 | 0.9 | ..... | ..... | 4 | ... | S | 0 | 0 | Smooth | ..... | Bright ..... | |
| Onward, Callao, Peru..... | 30.02† | 762.5† | ..... | ..... | 70 | 21.1 | 90 | SE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, Pensacola, Fla..... | 29.91‡ | 759.7‡ | ..... | ..... | 64 | 17.8 | 83 | WSW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Palos, Shanghai, China ..... | 30.35* | 770.9* | 61 | 16.1 | 50 | 10.0 | 93 | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Rainy..... | |
| Pensacola, Honolulu, H. I..... | 30.10 | 764.5 | 72 | 22.2 | 69 | 20.6 | 65 | NE | 5 | 2.2 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Plymouth. Norfolk, Va..... | 29.51‡ | 749.5‡ | ..... | ..... | 53 | 11.7 | 61 | SW | ..... | ..... | 1–2 | ..... | 10 | .... | WNW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Powhatan, Norfolk, Va..... | 29.51‡ | 749.5‡ | ..... | ..... | 52 | 11.1 | 93 | W | 3.6 | 1.6 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | Pleasant..... | |
| Ranger. Amoy, China..... | 30.32* | 770.1* | ..... | ..... | 64 | 17.8 | 83 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Smooth | ..... | D. clouds..... | |
| Rio Bravo. Brownsville, Texas..... | 29.86 | 758.4 | 64 | 17.8 | 64 | 17.8 | 100 | S | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Santee, Annapolis, Md ..... | 29.42‡ | 747.3‡ | ..... | ..... | 54 | 12.2 | 49 | W | ..... | ..... | 2 | ..... | 8 | ..... | W | 0 | 0 | ..... | ..... | Cloudy..... | |
| Saratoga, Washington, D. C..... | 29.40* | 746.7* | ..... | ..... | 56 | 13.3 | 87 | NW | ..... | ..... | 3 | ..... | 7 | ..... | Calm | 0 | 0 | ..... | ..... | Cloudy..... | |
| St. Louis, League Island, Pa ..... | 29.32 | 744.7 | 57 | 13.9 | 49 | 9.4 | 57 | SW | 11 | 4.9 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear. ..... | |
| Supply, Havre, France..... | 30.23 | 767.8 | 55 | 12.8 | 50 | 10.0 | 86 | NW | ..... | ..... | 2 | ..... | 5? | ..... | W | ..... | ..... | ..... | ..... | Clear?..... | |
| Swatara, Aspinwall..... | 30.01 | 762.2 | 83 | 28.3 | 82 | 27.8 | 87 | N | ..... | ..... | 6 | ..... | 8 | .... | N | ..... | ..... | ..... | ..... | Cloudy..... | |
| Tennessee, N. 10° 1′ E. 62° 33′..... | 29.91* | 759.7* | 85 | 29.4 | 84 | 28.9 | 79 | NNE | 3 | 1.3 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | Mod'ate | NE | D. clouds..... | |
| Trenton, N. 39° 55′, E. 12° 18′..... | 30.04‡ | 763.0‡ | ..... | ..... | 64 | 17.8 | 73 | NW | ..... | ..... | 1 | ..... | 10 | ..... | NW | 0 | 0 | Smooth | ..... | Misty..... | |
| Tuscarora, N. 20° 30′, W. 105° 50′..... | 29.76 | 755.9 | 73 | 22.8 | 74 | 23.3 | 76 | ENE | ..... | ..... | 0–1 | ..... | 8 | ..... | Calm | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Vandalia, Villefranche, France..... | 30.00‡ | 762.0‡ | ..... | ..... | 60 | 15.6 | 76 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Cloudy..... | |
| Wabash, Boston, Mass..... | 29 22‡ | 742.2‡ | ..... | ..... | 40 | 4.4 | 91 | NNW | 4 | 1.8 | ..... | ..... | 10 | ..... | Calm | 0.15 | 3.8 | ..... | ..... | Light rain..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. Inches. | Barometer reduced to sea-level. Millimeters. | Temperature of the air. Fahrenheit. | Temperature of the air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | |
| S. S. City of Peking, N. 37° 17', W. 145° 47' | | | 30.38† | 771.6† | 55 | 12.8 | 87 | SE | 7.2 | 3.2 | | | 10 | | SE | Smooth | Calm | Drizzling | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, N. 34° 40', E. 142° 19' | | | | | 48 | 8.9 | | NNE | | | 7 | | 10 | | NNE | Rough | NE | Overcast | Capt. Maury. |
| S. S. Colima, N. 15° 34', W. 97° 45' | | | 29.96† | 761.0† | 80 | 26.7 | 96 | NNW | | | 2 | | 3 | | Calm | Small | E | D. clouds | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic, N. 48° 15', W. 32° 06' | | | 29.71* | 754.6* | | | | S | | | 2 | | 9 | | S | Light | SE | Overcast | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. W. H. Thompson. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic, New York, N. Y. | | | 29.21† | 741.9† | 47 | 8.3 | ?? | W | | | 2 | | | | NW | | | D. clouds | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. *Aneroid; corrected for elevation; instrumental error not known. †Aneroid.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, N. 39° 55', W. 142° 14' | | | 30.50* | 774.7* | | | | Var. | | | 1 | | Heavy | | SE | Smooth | | Overcast | Capt. John Metcalf. |
| S. S. Gaelic, Hong-Kong, China | | | 30.07† | 763.8† | 77 | 25.0 | 82 | S | | | 3 | | | | | | | Foggy | Capt. W. H. Kidley |
| S. S. Oceanic, N. 34° 42', E. 158° 23' | | | 29.94 | 760.5 | 48 | 8.9 | 100 | NNE | | | 5 | | 10 | | NE | | NW | D. clouds | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg, N. 27° 00', W. 62° 02' | | | 29.77 | 756.1 | 74.0 | 23.3 | 93 | WNW | | | 6 | | d | | | High sea. | W | Blue sky | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | Character | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois, N. 39° 43′, W. 72° 38′ | | | 29.15* | 740.4* | 46 | 7.8 | 100 | WNW | | | 4 | | 0 | | | Mod'ate | WSW | Foggy | Captain Shackelford. |
| S. S. Indiana, N. 50° 29′, W. 23° 12′ | | | 29.94* | 760.5* | 52 | 11.1 | 100 | ESE | | | 6 | | 9 | | SW | Mod'ate | SSW | Cloudy | Captain Sargent. |
| S. S. Ohio, Philadelphia, Pa | | | 29.38 | 746.2 | 49 | 9.4 | 85 | W | | | 1 | | 3 | | W | | | Clear | Captain Morrison. |
| S. S. Pennsylvania | | | | | | | | | | | | | | | | | | | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Corrected for temperature and elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Reudle. |
| S. S. Switzerland, N. 46° 47′, W. 37° 13′ | | | 29.62* | 752.3* | | | | SE | 10 | 4.5 | | | 4 | | SE | Mod'ate | ESE | Fine | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

*Aneroid; regulated to standard at Antwerp.

**ALLAN LINE MARINE SERIES.**

Furnished by the coöperation of A. Schumacher, & Co., Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| S. S. Scandinavian, N. 43° 38′, W. 53° 6′ | | | 28.93 | 734.8 | 44 | 6.7 | | ESE | | | 4 | | 8 | | W | Mod'ate | ESE | Misty | Capt. W. Richardson. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.)**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Off Cape Charles, Va | | | 29.40 | 746.7 | 54 | 12.2 | 67 | WSW | 8 | 3.6 | | | 8k | | W | Swell | NE | Cloudy | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.91 | 760.5 | 14 | —10.0 | 100 | Calm | 0 | 0 | | | 10s | | W | | | Cloudy | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assd't.) Chief Signal Officer, U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 7, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the last 24 hours. Inches. | Rain-fall or melted snow in the last 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 29.95 | 760.8 | 65.7 | 18.7 | 85 | SW | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0.433 | 11.0 | Cloudy | Dr. Ollive. |
| Nemours | ..... | ..... | 29.78 | 756.3 | 67.3 | 19.6 | 70 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Michel. |
| Algiers | ..... | ..... | 29.76 | 755.8 | 81.0 | 27.2 | 31 | SSW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Towiliere. |
| La Calle | ..... | ..... | 29.77 | 756.2 | 62.6 | 17.0 | 84 | NE | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0 | 0 | Very cloudy | Boulangeot. |
| Tunis | ..... | ..... | 29.87 | 758.7 | 72.3 | 22.4 | 53 | E | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 0 | 0 | Covered | Jacques. |
| Sfax | ..... | ..... | 29.88 | 759.0 | 69.8 | 21.0 | ..... | SE | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Gau. |
| Saida | ..... | ..... | 29.88 | 759.0 | 75.2 | 24.0 | ..... | SSE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair. | Herbin. |
| Tebessa | ..... | ..... | 29.87 | 758.8 | ..... | ..... | ..... | SW | ..... | ..... | 5 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Watrin. |
| Geriville | ..... | ..... | 29.97 | 761.3 | 61.2 | 16.2 | 87 | S | ..... | ..... | 7 | ..... | 9 | ..... | ..... | 0 | 0 | Covered | Lemaitlot. |
| Laghouat | ..... | ..... | 29.91 | 759.6 | 78.8 | 26.0 | 24 | W | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Bertrand. |
| Biskra | ..... | ..... | 29.82 | 757.4 | 86.0 | 30.0 | 17 | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair. | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.53 | 750.1 | 30.09 | 764.2 | 50.7 | 10.4 | 60 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.087 | 2.2 | Raining | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.31 | 744.5 | 30.10 | 764.6 | 41.0 | 5.0 | 90 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.039 | 1.0 | ..... | Dr. Wierzbiski. |
| Eperies | 29.10 | 739.2 | 30.09 | 762.0 | 44.6 | 7.0 | 67 | NW | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0.845 | 21.45 | ..... | Julius Mikolik. |
| Gratz | 28.80 | 731.6 | 30.06 | 763.4 | 53.1 | 11.7 | 36 | S | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 0.248 | 6.30 | ..... | Andreas Rospini. |
| Hermannstadt | 28.59 | 723.8 | 29.94 | 760.4 | 47.1 | 8.4 | 87 | NW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.161 | 4.10 | Raining | Prof. Reissenberg |
| Kremsmünster | 28.74 | 729.9 | 30.10 | 764.5 | 47.1 | 8.4 | 50 | NW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner |
| Lemberg | 28.87 | 733.3 | 29.88 | 758 9 | 41.2 | 5.1 | 83 | NW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.134 | 3.4 | ..... | Dr. T. Stanecki. |
| Pola | 29.90 | 759.5 | 30.02 | 762.4 | 58.6 | 14.8 | 53 | ENE | ..... | ..... | 2 | ..... | 3ks | ..... | ..... | 0.047 | 1.2 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.45 | 747.9 | 29.91 | 759.8 | 48.2 | 9.0 | 63 | NW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0.165 | 4.2 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.71 | 754.5 | 29.98 | 761.6 | 55.4 | 13.0 | 65 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0.006 | 0.15 | ..... | Karl Stancel. |
| Trieste | 29.96 | 761.0 | 30.07 | 763.6 | 55.0 | 12.8 | 55 | ENE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | Fair | P. Busin. |
| Vienna | 29 41 | 747.1 | 30.14 | 765.6 | 48.2 | 9.0 | 44 | N | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.65 | 727.8 | 30.18 | 766.6 | 48.4 | 9.1 | 52 | E | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. M. Passau. |
| Brussels | 30.01 | 762.2 | 30.21 | 767.4 | 50 5 | 10.3 | 50 | ESE | ..... | ..... | 4 | ..... | 1 | ..... | ESE | 0 | 0 | ..... | Royal Observatory. |
| Furnes | 30.20 | 767.1 | 30.23 | 767.7 | 53.8 | 12.1 | 56 | E | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | M. E. de Cae. |
| Maeseyck | 30.17 | 766.4 | 30.30 | 769.6 | 48.9 | 9.4 | 59 | SE | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0.035 | 0.9 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 ? feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

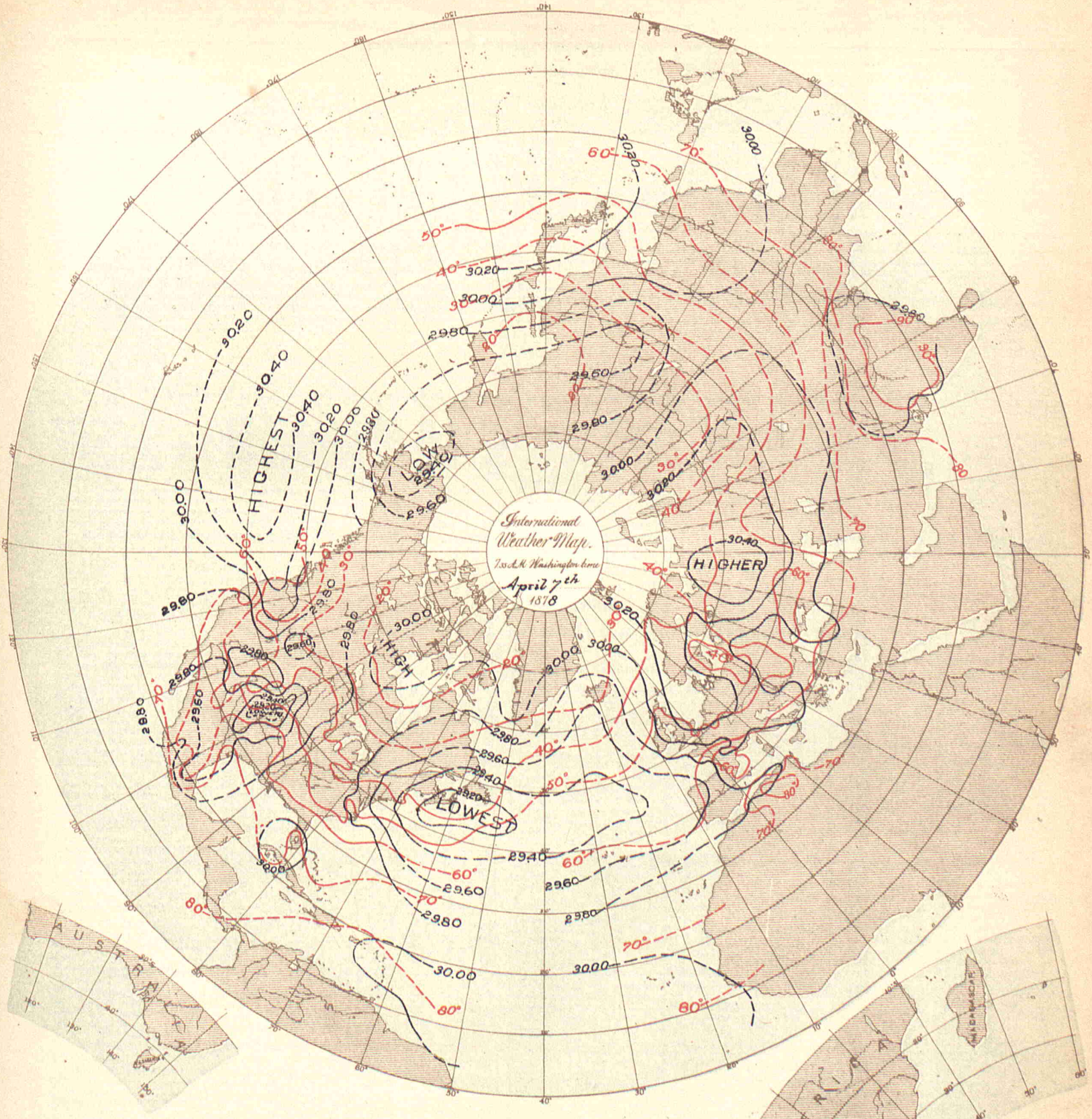
| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.08 | 764.0 | 30.18 | 766.6 | 47.2 | 8.4 | ..... | SSE | 19 | 8.5 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Hazy ..... | W. B swell. |
| Ardrossan | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.03 | 762.7 | 51.7 | 10.9 | ..... | SE | 28 | 12.5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.07 | 763.8 | 54.5 | 12.5 | ..... | ESE | 22 | 9.8 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 29.92 | 759.0 | 53.5 | 11.9 | ..... | E | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | J. L. E. Dreyer. |
| Bradford, Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.97 | 761.2 | 30.00 | 762.0 | 84.0 | 28.9 | ..... | NE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 30.21 | 767.3 | 57.0 | 13.9 | ..... | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | H. Todd. [H.C. |
| Cardington | ..... | ..... | 30.19 | 766.8 | 53.0 | 11.7 | ..... | SE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | John McLaren. |
| Chatham, School M. E | 30.11 | 764.8 | 30.25 | 768.3 | 46.2 | 7.9 | ..... | SE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.45 | 722.6 | 29.94 | 760.5 | 46.0 | 7.8 | ..... | E | ..... | ..... | 8 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | Alexander Watt. |
| Donaghadee | 30.04 | 763.0 | 30.08 | 763.5 | 50 | 10.0 | ..... | SSE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | J. Mac Gowan. |
| Dover | 30.15 | 765.8 | 30.18 | 766.6 | 45 | 7.2 | ..... | E | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Hazy..... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 30.13 | 765.3 | 55.0 | 12.8 | ..... | SE | 11.0 | 4.9 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Thomas Mackereth. |
| Falmouth, Observatory | 29.66 | 753.4 | 29.89 | 759.2 | 49.4 | 9.7 | ..... | E | ..... | ..... | 6 | ..... | 3 | ..... | ..... | ..... | ..... | Squally ..... | The Staff. |
| Fort Napier, (Natal) | 27.68 | 703.1 | 29.88 | 758.9 | 79.4 | 26.3 | ..... | NE | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.75 | 755.6 | 29.98 | 761.5 | 88 | 31.1 | ..... | N | ..... | ..... | 0 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's College | ..... | ..... | 29.81 | 757.2 | 54 | 12.2 | ..... | SE | ..... | ..... | 5 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.70 | 754.4 | 29.75 | 755.6 | 63.5 | 17.5 | ..... | W | ..... | ..... | 2 | ..... | 8 | ..... | ..... | Blank | Blank | D. clouds..... | Corpl. Wm. Allen, A. H. C. |
| Glasgow, Observatory | 29.91 | 759.7 | 30.12 | 765.0 | 53.5 | 11.9 | ..... | SSE | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | Blue sky..... | D. G. Maclean. |
| Great Yarmouth | 30.23 | 767.8 | 30.24 | 768.1 | 43 | 6.1 | ..... | ESE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 30.00 | 762.0 | 30.17 | 766.3 | 49.2 | 9.6 | ..... | E | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | The Staff, for G. B. Airy. |
| Guernsey | 29.70 | 754.4 | 29.93 | 760.2 | 53 | 11.7 | ..... | ENE | ..... | ..... | 5 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Dr. S. E. Hoskins, F. R. S. |
| Helston | ..... | ..... | 29.92 | 760 0 | 53 | 11.7 | ..... | E | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 0 | 0 | Fine..... | M. P. Moyle. |
| Holyhead | 29.99 | 761.7 | 30.04 | 763.0 | 57 | 13.9 | ..... | NNW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | Blue sky..... | John Tilston. |
| Jersey | 29.65 | 753.1 | 29.94 | 760.5 | 56.5 | 13.6 | ..... | E | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 30.16 | 766.1 | 49.8 | 9.9 | ..... | E | 28 | 12.5 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Hazy..... | The Staff. |
| Kingstown | 30.00 | 762.0 | 30.03 | 762.7 | 48 | 8.9 | ..... | SE | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 30.18 | 766.6 | 51.8 | 11.0 | ..... | SE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | Blue sky..... | Wm. J. Harrison, F. G. S. |
| Malta, (Mediterranean) | 29.80 | 756.9 | 29.88 | 758.9 | 62.0 | 16.7 | ..... | NE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | Sgt. Fred. Travis, A. H. |
| Nairn | 29.98 | 761.5 | 30.07 | 763.8 | 56 | 13.3 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Clear..... | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 29.95 | 760.7 | 67.0 | 19.4 | ..... | NW | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | C. S. Duncombe. |
| Nottingham, Observatory | 29.98 | 761.5 | 30.18 | 766.6 | 54.3 | 12.4 | ..... | SE | ..... | ..... | 5 | ..... | 1c;k | ..... | WSW; SE | 0 | 0 | Blue sky..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.61 | 752.1 | 30.14 | 765.5 | 53.1 | 11.7 | ..... | E | ..... | ..... | 5 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.14 | 765.5 | 52 | 11.1 | ..... | E | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Mr. Lucas. |
| Plymouth | 29.86 | 758.4 | 29.94 | 760.5 | 52.3 | 11.3 | ..... | E | ..... | ..... | 6 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds.... | John Merrifield. |
| Roche's Point | 29.83 | 757.7 | 29.87 | 758.7 | 50 | 10.0 | ..... | SE | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded... | W. Kennedy. |
| Saint Ann's Head | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 30.09 | 764.3 | 48.8 | 9.3 | ..... | S | 26 | 11.6 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 29.92 | 760.0 | 59.8 | 15 4 | ..... | Calm | ..... | ..... | 0 | ..... | 1 | ..... | ..... | ..... | ..... | Hazy..... | Sergt. W. H. Lynn. |
| Sheffield | 29.92 | 760.0 | 30.20 | 767.1 | 49.9 | 9.9 | ..... | SE | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | Blue sky..... | W. F. Cooper. |
| Silloth Rectory | 30.09 | 764.3 | 30.12 | 765.0 | 59.4 | 15.2 | 45 | S | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.75 | 755.6 | 30.16 | 766.1 | 51.2 | 10.7 | ..... | SE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 29.96 | 761.0 | 49 | 9.4 | ..... | SSE | ..... | ..... | 6 | ..... | 2 | ..... | ..... | ..... | ..... | ¼ clouded... | John Sutherland. |
| Strathfield Turgiss | 29.90 | 759.4 | 30.12 | 765.0 | 54.6 | 12.6 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Rev. C. H. Griffith, F. M. |
| Thurso | ..... | ..... | 30.07 | 763.8 | 50 | 10.0 | ..... | SSW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 29.86 | 758.4 | 53 | 11.7 | ..... | E | ..... | ..... | 10 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 29.75 | 755.6 | 55.1 | 12.8 | ..... | ESE | 41 | 18.3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Squally..... | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.87 | 758.7 | 62.0 | 16.7 | 82 | SE | ..... | ..... | 2 | ..... | 10c | ..... | ..... | 0 | 0 | Cloudy..... | Francis Abbott, F. R. A. S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.69 | 754.1 | 29.88 | 758.9 | 78.8 | 26.0 | 75 | SE | 15.5 | 6.9 | ..... | 8 | 2 | ..... | ..... | 0 | 0 | Cloudy..... | C. Meldrum. |
| Melbourne, Observatory | 30.12 | 765.0 | 30.21 | 767.3 | 63.6 | 17.6 | 74 | NE | 5 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Very fine.... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Bobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft, or 670.6 m.

## MARINE SERIES.

| VESSELS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Algeria, N. 42° 55′ W. 54° 20′ | ..... | ..... | 29.12 | 739 6 | 51 | 10.6 | ..... | SW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 15* | SW | Misty..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. C. Prehn. [R. |
| S. S. Peruvian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Alex Simpson. |
| S. S. Yorkshire, N. 48° 25′ W. 24° 45′ | ..... | ..... | 29.34 | 745.2 | 55 | 12.8 | ..... | ESE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 3 | ESE | D. clouds..... | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instru'tal error and temperature. Inches. | BAROMETER. Corrected for instru'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.20 | 665.5 | | | 69.4 | 20.8 | 82 | SE | | | 3 | 1c | | | | 0 | 0 | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.20 | 767.1 | 30.25 | 768.3 | 41.9 | 5.5 | 79 | NNW | | | 2 | | 5 | | | | | | |
| Fanöe | 30.29 | 769.4 | 30.31 | 769.9 | 44.2 | 6.8 | 78 | W | | | 4 | | 5 | | | | | | |
| Godthaab, (Greenland) | 30.02 | 762.4 | 30.06 | 763.5 | 28.6 | — 1.9 | 82 | Calm | | | 0 | | 1 | | | | | | |
| Stykkisholm, (Iceland) | 29.59 | 751.5 | 29.63 | 752.6 | 25.5 | — 3.6 | 98 | E | | | 6 | | 10 | | | | | | Snowing |
| Thorshavn, (Farôe) | 29.82 | 757.5 | 29.86 | 758.4 | 46.9 | 8.3 | 73 | SSW | | | 6 | | 10 | | | | | | |
| Vestervig | 30.13 | 765.2 | 30.30 | 769.5 | 45.3 | 7.4 | 86 | NW | | | 4 | | 4 | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.53 | 750.0 | 30.08 | 764.0 | 50.0 | 10 | 44 | NE | | | 3 | | 1 | | NE | 0 | 0 | Clear | Collignon, Director. |
| Amiens, Normal School | | | | | | | | | | | | | | | | | | | Bonvarne, Director. |
| Avignon, Normal School | 29.87 | 758.7 | 29.95 | 760.7 | 65.8 | 18.8 | 54 | NW | | | 1 | | 5 | | SSW | 0 | 0 | Cloudy | Mr. Giraud, Director |
| Bar-sur-Seine | 29.49 | 749.1 | 30.05 | 763.2 | 56.5 | 13.6 | 30 | SE | | | 3 | | 0 | | | 0 | 0 | Clear | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 53.8 | 12.1 | 39 | E | | | 3 | | 0 | | | 0 | 0 | Clear | Normal School. |
| Besançon | 29.15 | 740.3 | 30.03 | 762.8 | 57.2 | 14 | 62 | NE | | | 6 | | 0 | | | Inap | Inap. | Clear | Normal School. |
| Bourg-en-Bresse | 29.03 | 737.3 | 29.95 | 760.7 | 58.1 | 14.5 | 73 | N | | | 2 | | 0 | | | 0 | 0 | Clear | Normal School. |
| Bourges, Normal School | 29.36 | 745.8 | 29.90 | 759.5 | 60.8 | 16 | 96 | E | | | 4 | | 2 | | E | 0 | 0 | Slightly cl'dy | A. Wagner, Director. |
| Brest, Naval Observatory | 29.49 | 749.0 | 29.71 | 754.5 | 56.7 | 13.7 | 84 | E | | | 4 | | 9 | | E | 0 | 0 | | The Staff. |
| Carcassonne, Normal School | 29.51 | 749.6 | 29.85 | 758.1 | 55.0 | 12.8 | 92 | ENE | | | 2 | | 5 | | E | 0.028 | 0.7 | Cloudy | Vatean, Director. |
| Caen | 29.91 | 759.6 | 29.98 | 761.5 | 57.6 | 14.2 | 76 | SE | | | 6 | | 2 | | | 0 | 0 | Slightly cl'dy | Normal School. |
| Chartres, Normal School | 29.40 | 746.7 | 29.96 | 761.0 | 57.7 | 14.3 | 78 | E | | | 6 | | 0 | | | 0 | 0 | Clear | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.79 | 756.6 | 30.11 | 764.7 | 57.6 | 14.2 | 47 | E | | | 6 | | 0 | | | 0 | 0 | Clear | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.71 | 729.3 | 30.03 | 762.7 | 65.7 | 18.7 | 47 | E | | | 1 | | 5 | | | 0 | 0 | Cloudy | Alluard, Director. |
| Commercy, Normal School | 29.28 | 743.7 | 30.17 | 766.4 | 49.6 | 9.8 | 62 | E | | | 4 | | 1 | | E | 0 | 0 | Clear | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.86 | 733.0 | 30.00 | 762.0 | 63.9 | 17.7 | 67 | NE | | | 4 | | 8 | | SE | 0 | 0 | ¾ Covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 29.61 | 752.2 | 29.83 | 757.6 | 61.5 | 16.4 | 77 | E | | | 6 | | 8 | | E | 0 | 0 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.66 | 753.3 | 29.97 | 761.1 | 56.5 | 13.6 | 48 | SE | | | 2 | | 2 | | SE | 0 | 0 | Slightly cl'dy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.06 | 738.2 | 29.97 | 761.3 | 59.7 | 15.4 | 41 | NE | | | | | 0 | | | 0 | 0 | Clear | Voudez, Director. |
| Lorient, Naval Observatory | 29.69 | 754.2 | 29.80 | 756.8 | 58.3 | 14.6 | 58 | E | | | 7 | | 10 | | E | 0.028 | 0.7 | Covered | T. Carré, Director. |
| Mâcon, Normal School | 29.32 | 744.7 | 29.97 | 761.3 | 54.7 | 12.6 | 74 | Calm | | | 0 | | 0 | | | 0 | 0 | Clear | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | 29.04 | 737.7 | 30.10 | 764.6 | 59.4 | 10.2 | 39 | NE | | | 2 | | 0 | | | 0 | 0 | Clear | Normal School. |
| Nismes, Normal School | 29.77 | 756.2 | 29.97 | 761.3 | 67.6 | 19.8 | 46 | NW | | | 1 | | 5 | | S | 0.01 | 0.25 | Cloudy | Boyer, Director. |
| Orleans, Normal School | 29.60 | 751.9 | 29.98 | 761.6 | 60.8 | 16 | 35 | NE | | | 6 | | 2 | | N | 0 | 0 | Slightly cl'dy | Bernard, Director. |
| Paris, Observatory | 29.84 | 757.8 | 30.08 | 763.9 | 55.6 | 13.1 | 38 | E | | | 3 | | 0 | | | 0 | 0 | Clear | National Observatory. |
| Privas | 28.96 | 735.6 | 30.02 | 762.6 | 58.1 | 14.5 | 62 | SE | | | 2 | | 1 | | SE | 0 | 0 | Clear | Normal School |
| Puy de Dome (Summit) | | | | | | | | | | | | | | | | | | | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.77 | 756.2 | 29.89 | 757.0 | 59.9 | 15.5 | 87 | E | | | 3 | | 10 | | E | 0.04 | 1. | Raining | Lt. Decante, Director. |
| Rouen, Normal School | 29.99 | 761.7 | 30.08 | 763.9 | 59.7 | 15.4 | 28 | SE | | | 6 | | 0 | | | 0 | 0 | Clear | F. Lucard, Director. |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | M. H. Hercouet. |
| Tarbes, Normal School | 28.88 | 733.5 | 29.93 | 760.3 | 64.4 | 18 | 71 | SW | | | 1 | | 0 | | | 0 | 0 | Clear | T. Hugues, Director. |
| Villefranche | 29.25 | 743.0 | 29.95 | 760.8 | 64.0 | 17.8 | 91 | NE | | | 2 | | 5 | | NW | 0 | 0 | Cloudy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.84 | 758.0 | 29.87 | 758.7 | 82.4 | 28 | | | | | | | | | | 0 | 0 | | L'Abbé Marchési. |
| Lyons | | | 30.02 | 762.5 | 60.4 | 15.8 | | | | | | | 2 | | | 0 | 0 | | M. Jeys. |
| Marseilles, Observatory | | | 29.93 | 760.2 | 61.0 | 16.1 | 86 | S | | | 0-1 | | 10 | | | Inap | Inap | Rainy | The Staff. |
| Mont-Louis | 24.76 | 628.9 | 30.08 | 763.9 | 52.5 | 11.4 | 56 | WSW | 13.3 | 5.93 | | | 4 | | SW | 0.059 | 1.5 | | Mr. Falguère. |
| Nice | | | 29.98 | 761.6 | 62.8 | 17.1 | 78 | NE | | | 2 | | 1 | | | 0 | 0 | Clear | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.78 | 756.3 | 30.05 | 763.3 | 56.8 | 13.8 | 39 | ENE | | | 2-3 | 1c | | W | | 0 | 0 | | Marié Davy, Director |
| Perpignan | | | 29.92 | 760.0 | 57.6 | 14.2 | 82 | SE | 14.9 | 6.66 | | | 10 | | E | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Paylac. |
| Pic du Midi, (Plantade,) H. P. | 22.39 | 568.7 | | | 39.6 | 4.2 | | SW | | | 1 | | 10 | | | 0 | 0 | Covered | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.90 | 759.5 | 30.07 | 763.7 | 57.9 | 14.4 | 34 | E | | | 3 | 1 | | W | | 0 | 0 | Clear | E. Renou. |
| Toulouse, Observatory | 29.15 | 740.5 | 29.87 | 758.8 | 56.7 | 13.7 | 79 | SSE | | | 6 | | 10 | | | 0 | 0 | | The Staff. |
| Tours | 29.69 | 754.2 | 29.89 | 759.2 | 62.1 | 16.7 | 50 | E | | | 5 | | 5 | | W | 0 | 0 | | C. Marquet. |
| Versailles, (near Paris) | | | 30.05 | 763.3 | 57.9 | 14.4 | 34 | E | | | 4 | | 0 | | | 0 | 0 | Very clear | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.09 | 764.3 | 30.12 | 765.0 | 52.2 | 11.2 | 97 | SE | 8.5 | 3.8 | | | 10 | | | 0.646 | 16.4 | Covered | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | |
| Berlin | | | | | | | | | | | | | | | | | | | |
| Breslau | 30.09 | 764.2 | 30.26 | 768.7 | 46.2 | 7.9 | 70 | N | | | | | | | | | | | Prof. Dr. Hoh. |
| Carlsruhe | 29.65 | 753.1 | 30.19 | 766.7 | 39.9 | 4.4 | 82 | WNW | | | 1 | | 7 | | | 0.012 | 0.3 | Light ram.. | Prof. Arndt. |
| Cassel | 29.73 | 755.2 | 30.17 | 766.3 | 51.1 | 10.6 | 56 | E | | | 3 | | 10 | | | Inap | Inap. | | Royal University Obs'y |
| Crefeld | 29.72 | 754.8 | 30.33 | 770.4 | 47.5 | 8.6 | 61 | N | | | 2 | | 2 | | | 0 | 0 | | Albert Senz. |
| Emden | 30.08 | 764.0 | 30.24 | 768.1 | 52.7 | 11.5 | 47 | E | | | 3 | | 5 | NNE | | 0 | 0 | | Dr. H. Möhl. |
| Frankfort on the Main | 30.35 | 771.0 | 30.39 | 771.9 | 49.1 | 9.5 | 70 | NE | | | 3 | | 5k | | | 0.08 | 2. | | Director Lose. |
| Friedrichshafen | 29.90 | 759.4 | 30.27 | 768.9 | 51.4 | 10.8 | 33 | NE | | | 1 | | 1 | | | 0 | 0 | | Prof. Prestel. |
| Hamburg | 28.70 | 728.9 | 30.15 | 765.7 | 51.4 | 10.8 | 38 | NE | | | 3 | | 4 | | | 0 | 0 | | Physical Society. |
| Kiel | 30.23 | 767.8 | 30.30 | 769.6 | 47.3 | 8.5 | 52 | NNE | | | 7 | | 2 | N | | 0 | 0 | | M. Wilhelm. |
| Königsberg, (Prussia) | 30.28 | 769.1 | 30.30 | 769.5 | 45.1 | 7.3 | 51 | SE | | | 3 | | 7k | | | 0.106 | 2.7 | Fine | Captain F. Hegemann. |
| Köslin | 29.99 | 761.7 | 30.08 | 763.9 | 37.6 | 3.1 | 79 | NW | | | 1 | | 2 | | | 0 | 0 | | Prof. G. Karsten. |
| Leipsic, Observatory | | | 30.15 | 765.9 | 41.5 | 5.3 | | NW | | | 4 | | 8 | | | 0 | 0 | | Prof. E Luther |
| Memel, Naval School | 29.56 | 758.5 | 30.29 | 769.4 | 44.2 | 6.8 | 63 | N | | | 4 | | 1 | | | 0.106 | 2.7 | | H. Müller. |
| Neufahrwasser | 30.03 | 762.7 | 30.08 | 763.9 | 37.4 | 3.0 | 93 | NW | | | 2 | | 9 | NNW | | 0 | 0 | | Prof. Bruhns. |
| Posen | 30.13 | 765.2 | 30.14 | 765.6 | 39.0 | 3.9 | 84 | N | | | 2 | | 10ks | | | | | | Reinbrecht von Skalweit. |
| Strassburg Obs., (in Alsace | 29.90 | 759.5 | 30.20 | 767 0 | 47.3 | 8.5 | 43 | NNW | | | 3 | | 10 | | | 0 | 0 | | A. Lothes. |
| Stuttgart | 29.62 | 752.3 | 30.17 | 766.4 | 52.9 | 11.6 | 41 | NE | | | 6 | | 10 | | | | | | Dr. Magener. |
| Treves, (Trier) | 29.22 | 742.1 | 30.17 | 766.3 | 50.9 | 10.5 | 40 | E | | | 4 | | 0 | | | 0 | 0 | | Dr. Schur. |
| Weissenburg, (Bavaria) | 29.58 | 751.3 | 30.10 | 764.6 | 53.4 | 11.9 | 42 | E | | | 2 | | 3 | E | | 0 | 0 | | Prof. Schoder. |
| Wustrow, Naval School | 28.69 | 728.6 | 30.21 | 767.3 | 46.6 | 8.1 | 55 | NE | 4 | 2 | 5 | | 4 | | | 0 | 0 | Foggy | Prof. Flesch. |
| | 30.27 | 768.9 | 30.31 | 769.9 | 42.6 | 5.9 | 66 | N | | | | | 8k | NE | | 0 | 0 | | Dr. Von Bebber. |
| German Naval Series. | | | | | | | | | | | 2 | | 7 | | | 0 | 0 | | E. F. Schütz. |
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NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.58 | 751.3 | 29.97 | 761.1 | 66.7 | 19.3 | | SW | | | 2.0 | | | | | | | Clear | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.76 | 755.9 | 29.81 | 757.2 | 79.5 | 26.4 | 81 | WSW | 32? | 14.3? | | | 7 | | WSW | 0 | 0 | D. clouds | |
| Deesa | 29 33 | 745.0 | 29.80 | 756.8 | 91.5 | 33.1 | 23 | SW | | | | | 7 | WNW | | 0 | 0 | D. clouds | |
| Bombay | 29.74 | 755.3 | 29.77 | 756.2 | 86.1 | 30.1 | 58 | NW | 25 | 11.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.75 | 704.9 | 29.70 | 754.3 | 92.7 | 33.7 | 37 | NE | | | | | 3 | | NE | 0 | 0 | D. clouds | |
| Lahore | 29.01 | 736.8 | 29.74 | 755.4 | 87.0 | 30.6 | 34 | NE | 3 | 1.3 | | | 8 | | | 0 | 0 | Cloudy | |
| Belgaum | 27.30 | 693.4 | 29.82 | 757.4 | 79.5 | 26.4 | 71 | W | 6 | 2.7 | | | 5 | | S | 0 | 0 | D. clouds | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.83 | 732.4 | 29.72 | 754.8 | 87.8 | 31.0 | 20 | Calm | 0.8 | 0.4 | | | 5 | | | 0 | 0 | | |
| Agra | 29.20 | 741.6 | 29.75 | 755.6 | 92.6 | 33.7 | 25 | W | | | | | 8 | W | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.73 | 729.8 | | | | | | W | 6.4 | 2.9 | | | 9 | | E | 0 | 0 | Gloomy | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.38 | 746.2 | 29.74 | 755.5 | 92.2 | 33.4 | 32 | W | 1.9 | 0.8 | | | 9 | ESE | | 0 | 0 | D. clouds | |
| Allahabad | 29.42 | 747.3 | 29.72 | 755.0 | 95.1 | 35.1 | 21 | Calm | 0.9 | 0.4 | | | 10 | SW | | 0 | 0 | Overcast | |
| Patna | 29.55 | 750.6 | 29.73 | 755.0 | 94.5 | 34.7 | 17 | W | 1.4 | 0.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.77 | 705.4 | 29.73 | 755.2 | 90.3 | 32.4 | 14 | NW | 6.6 | 3.0 | | | 6 | | SW | 0 | 0 | | |
| Cuttack | 29.71 | 754.6 | 29.79 | 756.6 | 87.3 | 30.7 | 64 | SSW | 3.3 | 1.5 | | | 9 | | | 0 | 0 | Threatening | |
| Calcutta (Alipore) | 29.76 | 756.0 | 29.78 | 756.5 | 86.5 | 30.3 | 73 | SSW | 12 | 5.4 | | | 5 | SW | NE | 0 | 0 | D. clouds | |
| Goalpara | 29.39 | 746.6 | 29.78 | 756.4 | 81.8 | 27.7 | 61 | NE | 3.9 | 1.7 | | | | | | 0 | 0 | Blue sky | |
| Chittagong | 29.80 | 756.9 | 29.89 | 759.3 | 82.9 | 28.3 | 66 | Calm | 6.0 | 2.7 | | | 2 | | | 0 | 0 | Misty | |
| Sibsagar | 29.55 | 750.6 | 29.90 | 759.3 | 68.8 | 20.4 | 90 | ENE | 8.3 | 3.7 | | | 10 | | | 0.65 | 16.5 | Thunder-storm | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.39 | 721.0 | 29.72 | 754.8 | 93 | 33.9 | 29 | NW | 4.9 | 2 2 | | | 8 | NE | | 0 | 0 | Overcast | |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.61 | 752.2 | 30.03 | 762.7 | 57 0 | 13.9 | 47 | E | 5.6 | 2.5 | ..... | ..... | 9 | ..... | ..... | 0.378 | 9.6 | ..... | Prof. Giovanni Codis. |
| Padua | 29.91 | 759.7 | 30.02 | 762.5 | 57.9 | 14.4 | 58 | ENE | 5.6 | 2.5 | ..... | ..... | 9 | E | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.82 | 757.4 | 30.01 | 762.3 | 57.9 | 14.4 | 50 | E | 2.5 | 1.1 | ..... | ..... | 6 | E | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.70 | 728.9 | 30.02 | 762.5 | 57.2 | 14.0 | 67 | S | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0.051 | 1.3 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.52 | 749.7 | 30.04 | 762.9 | 60.4 | 15.8 | ..... | SE | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.12 | 739.6 | 30.03 | 762.8 | 59.7 | 15.4 | 65 | ESE | 4.3 | 1.9 | ..... | ..... | 7 | N | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 28.12 | 714.3 | 30.05 | 763.2 | 56.3 | 13.5 | 58 | NNW | ..... | ..... | 2 | ..... | 4 | NW | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.77 | 756.1 | 29.99 | 761.8 | 59.2 | 15.1 | 74 | SE | ..... | ..... | 2 | ..... | 2 | W | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.82 | 757.4 | 29.99 | 761.7 | 61.5 | 16.4 | 59 | SW | 1.3 | 0.6 | ..... | ..... | 2 | S | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.73 | 755.2 | 30.05 | 763 3 | 56.7 | 13.7 | 81 | ESE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.74 | 755.3 | 29.99 | 761.8 | 68.9 | 20.5 | 45 | NW | ..... | ..... | 2 | ..... | 7 | W | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 29.90 | 759 4 | 29.98 | 761.6 | 60.6 | 15.9 | 74 | W | 3.8 | 1.7 | ..... | ..... | 10 | WSW | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 30.00 | 762.1 | 30.06 | 763.4 | 54.1 | 12.3 | 82 | N | 6.3 | 2.8 | ..... | ..... | 8 | NE | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.46 | 722.8 | 30.02 | 762.5 | 53.6 | 12.0 | 82 | NE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.84 | 757.9 | 29.95 | 760.7 | 63.7 | 17.6 | 74 | ESE | ..... | ..... | 2 | ..... | 2 | S | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.79 | 756.6 | 29.97 | 761.1 | 65.3 | 18.5 | 67 | WSW | 6.3 | 2.8 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U. | 29.79 | 756.7 | 29.99 | 761.8 | 67.6 | 19.8 | 59 | S | ..... | ..... | 2 | ..... | 2 | NW | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 63.7 | 17.6 | 81 | NW | 0.7 | 0.3 | ..... | ..... | 6 | NW | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.72 | 754.9 | 29.91 | 759.7 | 63.1 | 17.3 | 73 | S | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.11 | 739.3 | 29.99 | 761.8 | 66.6 | 19.2 | 70 | NW | 6.9 | 3.1 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.65 | 753.0 | 29.90 | 759.4 | 59.9 | 15.5 | 79 | ENE | 1.8 | 0.8 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.85 | 758.3 | 29.93 | 760.2 | 59.9 | 15.5 | 86 | NE | ..... | ..... | 4 | ..... | 10 | WSW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.42 | 747.2 | 29.97 | 761.3 | 64.9 | 18.3 | 64 | W | 0 | 0 | ..... | ..... | 3 | W | ..... | 0 | 0 | ..... | Prof. F. Brioschi |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nagasaki | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Tokei (Yeddo) | 30.32 | 770 1 | 30.39 | 771.9 | 40.7 | 4 8 | 87 | ENE | 3.3 | 1.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| Tokei (Yeddo) University | 30.27 | 768.8 | 30.38 | 771 5 | 43 | 6.1 | 79 | ENE | 2 | 0.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Prof. P. V. Veeder. |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 66.2 | 19.0 | 66 | N | 0.9 | 0.4 | ..... | 4c | 4c | W | N | 0 | 0 | Cloudy | L. Castillo, A. E. |
| Guadalajara | 24.87 | 631.1 | 29.82 | 757.5 | 58.6 | 14.8 | 64 | S | 11.0 | 4.9 | ..... | 0 | 10 | ..... | S | 0.43 | 11.0 | Covered | Prof. L. Perez. |
| Guanajuato | 23.56 | 598.0 | 29.73 | 755.1 | 63 5 | 17.5 | 58 | SSE | ..... | ..... | ..... | 9 | ..... | SW | ..... | 0 | 0 | Cloudy | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 64.6 | 18.1 | 68 | S | 11.0 | 4.9 | ..... | 4c | 4n | SW | SW | 0 | 0 | Cloudy | Prof. M. Leal. |
| Mexico | 23.98 | 583.6 | 29.49 | 749.1 | 57.2 | 14.0 | 71 | SE | 12.2 | 5.5 | ..... | 1c | 2k | SW | SW | Inap. | Inap. | Clear | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 57.6 | 14.2 | 82 | SW | 5.1 | 2.3 | ..... | 0 | 10n | ..... | SW | 0.10 | 2.5 | Raining | M. V. de Leon, M. E. |
| Puebla | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.43 | 10.9 | ..... | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 29.70 | 754 3 | 29.71 | 754.6 | 70.7 | 21.5 | 91 | SW | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 29.75 | 755.5 | 29.78 | 756.4 | 71.6 | 22.0 | 82 | NW | 0.7 | 0.3 | ..... | 2c | 4s | ..... | ..... | 0 | 0 | Hazy | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 49.3 | 9.6 | 67 | SW | 5.6 | 2.5 | ..... | 0 | 10n | ..... | S | 0.20 | 5.0 | Overcast | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.33 | 592.7 | 30.11 | 764.8 | 55.2 | 12.9 | 65 | SSW | 0.4 | 0.2 | ..... | 1c | 2cs | NW | W | 0.55 | 14.0 | Foggy | P. Spina. [M.M. D. D. |
| Morelia | 23.91 | 608.5 | ..... | ..... | 55.4 | 13.0 | 53 | SW | 6.9 | 0.4 | ..... | 0 | 2 | ..... | SW | 0 | 0 | Slightly hazy | M. Tena, F. L. Param. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.26 | 768.6 | 30.26 | 768.6 | 49.3 | 9.6 | ..... | ESE | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0.020 | 0.5 | ..... | |
| Groningen | 30.26 | 768.7 | 30.32 | 770.1 | 45.3 | 7.4 | ..... | NE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 30.30 | 769.7 | 30.30 | 769.7 | 42.6 | 5.9 | ..... | NE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 30.26 | 768 6 | 30.26 | 768 6 | 49.5 | 9.7 | 63 | E | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 30.23 | 767.9 | 30.28 | 769.1 | 51.8 | 11.0 | 76 | E | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Light cloudy | H. v d Brink. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.23 | 767.8 | 30.28 | 769.2 | 45.3 | 7.4 | 57 | NW | 3.6 | 1.6 | ..... | ..... | 0 | ..... | ..... | 0.024 | 0.6 | ..... | |
| Brôno | 30.27 | 768.9 | 30.31 | 769.9 | 41.0 | 5.0 | 58 | N | 4 | 2 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 30.09 | 764.3 | 30.24 | 768.1 | 50.9 | 10.5 | 42 | SSW | 2 | 1 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 30.22 | 767.5 | 30.26 | 768.6 | 40.3 | 4.6 | 65 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.32 | 744.6 | 29.51 | 749.5 | 60.6 | 15.9 | 91 | W | 23.7 | 10.6 | ..... | ..... | 8 | ..... | ..... | 0.472 | 12.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.65 | 727.7 | 29.67 | 753.7 | 61.7 | 16.5 | 73 | SSW | 10.5 | 4.7 | ..... | ..... | 9 | SW | ..... | 0.697 | 17.7 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 29.73 | 755.1 | 29.82 | 757.3 | 66.6 | 19.2 | 67 | W | 18.1 | 8.1 | ..... | ..... | 0 | ..... | ..... | 0.335 | 8.5 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.24 | 742.8 | 29.60 | 751.9 | 60.4 | 15.8 | 90 | SW | 22.4 | 10.0 | ..... | ..... | 8 | ..... | ..... | 0.965 | 24.5 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 29.52 | 749.9 | 29.60 | 751.7 | 63.0 | 17.2 | 96 | WSW | 8.7 | 3.9 | ..... | ..... | 10 | ..... | ..... | 0.087 | 2.2 | Light rain.... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.69 | 754.2 | 29.70 | 754.4 | 83.3 | 28.5 | ..... | SSE | ..... | ..... | 5 | ..... | 2 | ..... | SSE | 2 | ..... | Blue sky..... | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Rio Douro, S. 25° 58′, E. 32° 37′ | ..... | ..... | 30.00 | 761.9 | 80.6 | 27.0 | ..... | ESE | ..... | ..... | 3 | ..... | 2 | ..... | SE | 2 | SE | D. clouds..... | J. T. d'Oliveria, Com'd't. |
| Sado, Porto Praya, Cape Verde Islands. | 30.04* | 763.0* | 30.05* | 763.3* | 79.7 | 26.5 | ..... | NNE | ..... | ..... | 3 | ..... | 1 | ..... | NE | 2 | NNE | D. clouds.. .. | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.74 | 755.4 | 29.75 | 755.6 | ..... | ..... | ..... | W | ..... | ..... | 2 | ..... | 2 | ..... | W | 1 | ..... | Blue sky..... | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreira, dos Amas, Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.58 | 751.4 | 30.02 | 762.4 | 39.0 | 3.9 | 90 | NNW | 13 | 6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Raining.. .. | Astronomical Obs. |
| Wilna | 29.56 | 750.7 | 29.98 | 761.4 | 53.1 | 11.7 | 63 | SE | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 29.89 | 759.3 | 30.14 | 765.6 | 52.0 | 11.1 | 70 | SE | 7 | 3 | ..... | ..... | 9ck | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.23 | 767.7 | 30.24 | 768.1 | 57.9 | 14.4 | 49 | SE | 13 | 6 | ..... | ..... | 2cs | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.85 | 758.1 | 30.18 | 766.5 | 40.8 | 4.9 | 97 | ESE | 13 | 6 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Ch. Forsten. |
| Kieff | 29.28 | 743.8 | 29.91 | 759.8 | 53.8 | 12.1 | 76 | SE | 11 | 5 | ..... | ..... | 10c;ks;n | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.92 | 760.0 | 29.99 | 761.8 | 63.7 | 17.6 | 42 | W | 4 | 2 | ..... | ..... | 5c | ..... | ..... | ..... | ..... | ..... | Kurdukof. |
| Kertch | 30.02 | 762.5 | 30.04 | 763.0 | 49.8 | 9.9 | 98 | SE | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lugorio. |
| Moscow | 29.87 | 758.6 | 30.42 | 772.7 | 53.6 | 12.0 | 44 | SSE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.82 | 757.4 | 30.02 | 762.5 | 64.4 | 18.0 | 26 | ESE | 34 | 15 | ..... | ..... | 9s | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Archangel | 30.38 | 771.6 | 30.40 | 772.1 | 44.4 | 6.9 | 72 | SSE | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.52 | 724.5 | 29.95 | 760.6 | 52.7 | 11.5 | 88 | SSE | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Physical Observatory |
| Astrakhan | 30.20 | 767.1 | 30.12 | 765.0 | 59.0 | 15.0 | 37 | E | 18 | 8 | ..... | ..... | 4cs;s | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Krotkowo* | 29.94 | 760.5 | 30.42 | 772.6 | 56.8 | 13.8 | 41 | E | 11 | 5 | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 30.18 | 766.6 | 30.45 | 773.5 | 57.2 | 14.0 | 44 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 29.39 | 746.6 | 30.33 | 770.4 | 60.1 | 15.6 | 16 | WNW | 9 | 4 | ..... | ..... | 1cs | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Nukuss | 29.77 | 756.2 | 30.00 | 762.0 | 68.0 | 20.0 | 72 | ENE | 18 | 8 | ..... | ..... | 3ks | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.43 | 722.1 | 30.10 | 764.6 | 65.8 | 18 8 | 31 | NNW | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.68 | 753.8 | 30.22 | 767.6 | 35.1 | 1.7 | 91 | SW | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.77 | 756.1 | 30.11 | 764.8 | 22.5 | — 5.3 | 70 | ESE | 4 | 2 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Snowing..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 29.96 | 761.0 | 30.10 | 764.6 | 55.6 | 13.1 | 23 | S | 7 | 3 | ..... | ..... | 8n | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.32 | 693.8 | 29.41 | 747.1 | 27.7 | — 2.4 | 47 | SW | 16 | 7 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 30.03 | 762.8 | 30.13 | 765.3 | 34.0 | 1.1 | 92 | SE | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 13.1 | —10.5 | 60 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.77 | 756.1 | 29.87 | 758.8 | 57.9 | 14.4 | 73 | ENE | 4.9 | 2.17 | ..... | 10 | 0 | ..... | ..... | 0 | 0 | Covered.... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.61 | 752.0 | 29.66 | 753.4 | 72.3 | 22.4 | 69 | S | 3.4 | 1.52 | ..... | 4 | 5 | S | ..... | 0.291 | 7.4 | Almost cov.. | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.13 | 689.2 | ..... | ..... | 62.6 | 17.0 | 72 | S | 15.2 | 6.82 | ..... | ..... | 8 | ..... | ..... | 0.020 | 0.5 | Drizzling..... | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.50 | 698.6 | 29.62 | 752.4 | 65.5 | 18.6 | 52 | S | 9.7 | 4.34 | ..... | 0 | 10 | ..... | ..... | 0.083 | 2.1 | Covered..... | The Staff. |
| Murcia, Met. Obs'y | 29.63 | 752.6 | 29.78 | 756.4 | 66.0 | 18.9 | 68 | E | 4.5 | 2.00 | ..... | 5 | 5 | W | ..... | 0 | 0 | Covered..... | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.68 | 725.9 | 29.46 | 748.2 | 58.1 | 14.5 | 91 | S | 17.4 | 7.78 | ..... | ..... | 10 | ..... | ..... | 0.500 | 12.7 | Rainy ..... | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.96 | 760.9 | 30.03 | 762.6 | 66.5 | 19.2 | 78 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 29.67 | 753.5 | 29.76 | 756 0 | 64.6 | 18.1 | 83 | SSW | 19.7 | 8.8 | ..... | 0 | 6 | ..... | SW | 0.273 | 6.9 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W.I. | 29.91 | 759.7 | 30.00 | 762.0 | 81.0 | 27.2 | 85 | Calm | 0 | 0 | ..... | 6k | 4kn | S | S | 0.236 | 6.00 | Cloudy..... | Leonardo de Tejeda, Chief of Engineers. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.



Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATION. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.28 | 769.0 | 30.32 | 770.0 | 36.0 | 2.2 | ..... | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.17 | 766.4 | 30.23 | 767.7 | 44.6 | 7.0 | 44 | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.19 | 766.9 | 30.24 | 768.2 | 43.5 | 6.4 | 51 | NE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.89 | 759.2 | 30.07 | 763.7 | 34.2 | 1.2 | 100 | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.98 | 761.4 | 30.04 | 762.9 | 36.3 | 2.4 | 89 | NNW | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 0.035 | 0.9 | Light rain... | |
| Sub-Series. | | | | | | | | | | | | | | | | 0.094 | 2.4 | ..... | |
| Upsala | 30.04 | 762.9 | 30.11 | 764.8 | 34.0 | 1.1 | 94 | NNW | 15.2 | 6.8 | ..... | ..... | 10 | ..... | N | 0.060 | 1.52 | Raining..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.61 | 726.6 | 30.04 | 762.9 | 52.7 | 11.5 | 60 | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear..... | The Observatory. |
| Zurich | 28.47 | 723.2 | 30.11 | 764.9 | 53.2 | 11.8 | 60 | E | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | Clear..... | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +2.4 mm.; Thermometer, +0.8 cent.; Relative Humidity, +2 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.97 | 761.2 | 61.3 | 16.3 | 37 | S | 4 | 2.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Valona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanides. |
| Varna | ..... | ..... | 30.03 | 762.8 | 62.2 | 16.8 | ..... | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy..... | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | Imperial Observatory. |
| Beirut, (Syria,) Lee Obs'y | 29.87 | 758.7 | 29.99 | 761.7 | 67.1 | 19.5 | 73 | W | ..... | ..... | 2 | ..... | 9cs;n | ..... | SE | 0 | 0 | D. clouds..... | Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.13 | 739.9 | 29.62 | 752.3 | 39 | 3.9 | ..... | N | 1 | 0.4 | ..... | ..... | 10s | ..... | N | 0.22 | 5.6 | Light rain... | W. R. Bigg. |
| *Chatham, N. B | 29.28 | 743.7 | 29.34 | 745.2 | 33 | 0.6 | 89 | NE | 19 | 8.5 | ..... | ..... | 10n | ..... | NE | 0.79 | 20.1 | Cloudy..... | G. A. Blair. |
| Charlottetown, P. E. Island | 29.10 | 739.1 | 29.14 | 740.1 | 35 | 1.7 | 96 | NE | 16 | 7.2 | ..... | ..... | 10n | ..... | Calm | 1.430 | 36.32 | Light snow. | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.35 | 745.5 | 29.55 | 750.6 | 38.2 | 3.4 | 95 | NE | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0.097 | 2.47 | Drizzling..... | James Smith, M. A. |
| Dalhousie, N. B | 29.32 | 744.7 | ..... | ..... | 34 | 1.1 | 89 | SW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | Light snow. | H. A. Johnson. |
| Esquimault, B. C | 29.93 | 760.2 | 29.98 | 761.5 | 49.8 | 9.9 | 78 | SW | ..... | ..... | ..... | ..... | 4cs | 0 | ..... | ..... | ..... | Fair..... | W. H. Bevis. |
| *Father Point, Quebec | 29.51 | 749.5 | 29.53 | 750 0 | 33 | 0.6 | 85 | NE | 43 | 19.2 | ..... | ..... | 10s | ..... | NE | Inap. | Inap. | Cloudy ..... | J. McWilliams. |
| Fredericton, N. B | 29.27 | 743.4 | 29.34 | 745.2 | 34.2 | 1.2 | 84 | N | 9 | 4.0 | ..... | ..... | 10n | ..... | ..... | 0.01 | 0.3 | Light snow.. | Prof. Harrison. |
| *Fort Garry Manitoba | 28.90 | 734.0 | 29.75 | 755.6 | 32 | 0.0 | 90 | SE | 2 | 0.9 | ..... | ..... | 10n | ..... | ..... | 0.03 | 0.8 | Cloudy ..... | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.70 | 729.0 | 29.83 | 757.7 | 36 | 2.2 | 99 | NW | ..... | ..... | 2 | 0 | 0 | ..... | ..... | ..... | ..... | ..... | James Grant. |
| *Halifax, N. S | 28.93 | 734.8 | 29.06 | 738.1 | 36 | 2.2 | 96 | N | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Clear..... | F. Allison, M. A. |
| Hamilton, Ontario | 29.40 | 746.7 | 29.78 | 756.4 | 38.7 | 3.7 | 81 | W | ..... | ..... | 1 | 0 | ..... | ..... | ..... | 0.278 | 6.94 | Sleeting..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.18 | 741.2 | 29.21 | 741.9 | 38 | 3.3 | 100 | E | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Clear..... | E. Weedon. |
| *Kingston, Ontario | 29.27 | 743.4 | 29.60 | 751.8 | 40 | 4.4 | 72 | NW | 4 | 1.8 | ..... | ..... | 10ks | ..... | Calm | 1.40 | 35.6 | Foggy ..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.05 | 737.9 | 29.09 | 738.9 | 33.0 | 0.6 | ..... | NE | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0.20 | 5.1 | Cloudy ..... | C. H. Rigby. |
| *Montreal, Quebec | 29.35 | 745.5 | 29.55 | 750.6 | 35 | 1.7 | 96 | NE | 8 | 3.6 | ..... | ..... | 10n | ..... | ..... | 0.20 | 5.1 | Raining..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.07 | 738.4 | 29.78 | 756.4 | 35 | 1.7 | 74 | NW | 12 | 5.4 | ..... | ..... | 5ck | 0 | N | 0.20 | 5.1 | Light snow. | Rev. R. Mosley. |
| Peterboro, Ontario | 28.85 | 732.8 | 29.01 | 752.1 | 38.2 | 3.4 | 76 | NE | ..... | ..... | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Fair..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.08 | 738.6 | 29.79 | 756.7 | 36 | 2.2 | 80 | NW | 15 | 6.7 | ..... | 0 | 0 | ..... | ..... | 0.06 | 1.5 | Cloudy..... | H. Morgan. |
| Port Hastings, N. S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear..... | Peter Grant. |
| Port Stanley, Ontario | 29.16 | 740.7 | 29.82 | 757.4 | 38 | 3.3 | 80 | W | 14 | 6.3 | ..... | 5k | 0 | NW | ..... | ..... | ..... | ..... | M. Payne. |
| *Quebec, Quebec | 29.21 | 741.9 | 29.54 | 750.3 | 33 | 0.6 | 95 | E | ..... | ..... | 7 | ..... | 10n | ..... | E | 0 | 0 | Fair ..... | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.24 | 742.7 | 29.71 | 754.6 | 35 | 1.7 | 80 | NW | 10 | 4.5 | ..... | ..... | 8s | ..... | NW | 0.14 | 3.6 | Light rain... | W. H. McIntyre. |
| St. Andrews, N. B | 29.23 | 742.4 | 29.28 | 743.7 | 35 | 1.7 | 82 | NE | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | 0.08 | 2.0 | Light snow. | Dr. Gove. |
| St. John, N. B | 29.09 | 738.9 | 29.25 | 742.9 | 32 | 0.0 | 100 | N | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | 0.12 | 3.0 | Cloudy..... | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.09 | 738.9 | 29.82 | 757.4 | 37 | 2.8 | 81 | NW | 7 | 3.1 | ..... | 2k | 0 | ..... | ..... | 0.145 | 3.69 | Light snow.. | K. Stewart. |
| Stayner, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear..... | R. J. Cole. |
| Stratford, Ontario | 28.51 | 724.1 | 29.82 | 757.4 | 35.2 | 1.8 | 83 | NW | 14 | 6.3 | ..... | 3ck | 2ks | NW | ..... | ..... | ..... | ..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.05 | 737.9 | 29.08 | 738.6 | 35 | 1.7 | 99 | NE | 11 | 4.9 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Clear..... | T. C. Hill. |
| *Toronto, Ontario | 29.38 | 746.2 | 29.77 | 756.1 | 39 | 3.6 | 68 | NW | 14 | 6.3 | ..... | 2k | 0 | N | ..... | 0.91 | 23.1 | Light rain... | Magnetic Observatory. |
| Windsor, N. S | 29.02 | 737.1 | 29.12 | 739.6 | 34.0 | 1.1 | 89 | N | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Clear..... | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.19 | 4.8 | Snowing..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 35.5 | 1.9 | 100 | E | ..... | ..... | ..... | ..... | 5n | ..... | ..... | 1.06 | 26.9 | Rain and fog | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,016 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.24 | 742.7 | 29.46 | 748.3 | 40 | 4.4 | 87 | N | 2 | 0.9 | ..... | ..... | 10s | ..... | NW | 0.25 | 6.3 | Cloudy | |
| Alpena, Michigan | 29.20 | 741.7 | 29.86 | 758.4 | 33 | 0.6 | 69 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Atlantic City, New Jersey | 29.52 | 749.8 | 29.54 | 750.3 | 48 | 8.9 | 70 | W | 20 | 8.9 | ..... | 8k | 0 | W | ..... | 0.02 | 0.5 | Fair | |
| Augusta, Georgia | 29.76 | 755.9 | 29.94 | 760.5 | 56 | 10.0 | 79 | Calm | 0 | 0 | ..... | 2c | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Baltimore, Maryland | 29.61 | 752.1 | 29.66 | 753.4 | 48 | 8.9 | 70 | NW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Barnegat, New Jersey | 29.50 | 749.3 | 29.52 | 749.8 | 48 | 8.9 | 70 | NW | 22 | 9.8 | ..... | 5ck | 0 | NW | ..... | 0 | 0 | Fair | |
| Bismarck, Dakota | 27.93 | 709.4 | 29.78 | 756.4 | 42 | 5.6 | 83 | NW | 8 | 3.6 | ..... | Sm'e | Sm'e | ..... | ..... | Inap. | Inap. | Dense smoke | |
| Boise City, Idaho | 27.12 | 688.8 | 30.00 | 762.0 | 40 | 4.4 | 82 | SE | 1 | 0.4 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Boston, Massachusetts | 29.24 | 742.7 | 29.40 | 746.7 | 38 | 3.3 | 86 | NW | 8 | 3.6 | ..... | ..... | 10n;fg | ..... | N | 0.11 | 2.8 | Light rain | |
| Brackettville, Texas | 28.44 | 722.4 | 29.42 | 747.3 | 68 | 20.0 | 84 | E | 8 | 3.6 | ..... | ..... | 10n | ..... | SE | 0.21 | 5.3 | Light rain | |
| Breckenridge, Minnesota | 28.72 | 729.5 | 29.71 | 754.6 | 45 | 7.2 | 96 | S | 13 | 5.8 | ..... | ..... | 10n | ..... | Calm | 0.15 | 3.8 | Light rain | |
| Brownsville, Texas | 29.47 | 748.5 | 29.54 | 750.3 | 72 | 22.2 | 90 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Buffalo, New York | 29.02 | 737.1 | 29.72 | 754.9 | 38 | 3.3 | 81 | W | 8 | 3.6 | ..... | 5k | 0 | NW | ..... | 0.11 | 2.8 | Fair | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 58 | 14.4 | 27 | SW | ..... | ..... | 1 | 5ck | 0 | NW | ..... | 0 | 0 | Fair | |
| Burlington, Vermont | 29.24 | 742.7 | 29.50 | 749.3 | 36 | 2.2 | 90 | N | 8 | 3.6 | ..... | ..... | 10n | ..... | N | 0.10 | 2.5 | Light rain | |
| Cairo, Illinois | 29.55 | 750.6 | 29.94 | 760.5 | 52 | 11.1 | 41 | NE | 11 | 4.9 | ..... | Haze | 2s | Calm | Calm | 0 | 0 | Fair | |
| Camp Grant, Arizona | 24.82 | 629.9 | 29.60 | 751.8 | 52 | 11.1 | 34 | E | ..... | ..... | 1 | ..... | 10n | ..... | Calm | 0 | 0 | Cloudy | |
| Camp Verde, Arizona | 26.43 | 671.3 | 29.92 | 760.0 | 49 | 9.4 | 37 | NW | ..... | ..... | 1 | 8c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Campo, California | 27.19 | 690.6 | 29.76 | 755.9 | 46 | 7.8 | 92 | W | 2 | 0.9 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Cape Hatteras, N. Carolina | 29.77 | 756.1 | 29.78 | 756.4 | 52 | 11.1 | 66 | NW | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Clear | |
| Cape Henry, Virginia | 29.69 | 754.1 | 29.71 | 754.6 | 52 | 11.1 | 47 | NW | 24 | 10.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 29.89 | 759.9 | 29.82 | 757.4 | 51 | 10.6 | 59 | NW | 15 | 6.7 | ..... | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Clear | |
| Cape May, New Jersey | 29.57 | 751.1 | 29.60 | 751.8 | 46 | 7.8 | 77 | NW | 36 | 16.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 29.88 | 758.9 | 29.95 | 760.7 | 58 | 14.4 | 42 | N | 2 | 0.9 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 23.86 | 606.0 | 29.80 | 756.9 | 36 | 2.2 | 80 | N | 16 | 7.2 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Chicago, Illinois | 29.21 | 741.9 | 29.91 | 759.7 | 43 | 6.1 | 59 | S | 2 | 0.9 | ..... | Haze | Haze | ..... | ..... | 0 | 0 | Hazy | |
| Cincinnati Ohio | 29.28 | 743.7 | 29.95 | 760.7 | 40 | 4.4 | 60 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cleveland, Ohio | 29.16 | 740.7 | 29.89 | 759.2 | 38 | 3.3 | 63 | NW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Concho, Texas | 27.63 | 701.8 | 29.24 | 742.7 | 64 | 17.8 | 78 | E | ..... | ..... | 2 | 8k | 0 | E | ..... | 0 | 0 | Cloudy | |
| Corsicana, Texas | 29.20 | 741.7 | 29.66 | 753.4 | 60 | 15.6 | 88 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Davenport, Iowa | 29.26 | 743.2 | 29.90 | 759.4 | 44 | 6.7 | 60 | NE | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Deadwood, Dakota | 25.23 | 640.8 | ..... | ..... | 34 | 1.1 | 90 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | NW | Inap. | Inap. | Cloudy | |
| Denison, Texas | 28.87 | 733.3 | 29.64 | 752.8 | 61 | 16.1 | 71 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Denver, Colorado | 24.63 | 625.6 | 29.85 | 758.2 | 46 | 7.8 | 54 | NW | 4 | 1.8 | ..... | 8cs | 0 | N | ..... | 0 | 0 | Cloudy | |
| Detroit, Michigan | 29.30 | 744.7 | 29.88 | 758.9 | 35 | 1.7 | 61 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dodge City, Kansas | 26.97 | 685.0 | 29.17 | 740.9 | 52 | 11.1 | 79 | E | 8 | 3.6 | ..... | 5cs | 5s | Calm | Calm | 0 | 0 | Cloudy | |
| Dubuque, Iowa | 29.19 | 741.4 | 29.90 | 759.4 | 37 | 2.8 | 71 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Duluth, Minnesota | 29.16 | 740.7 | 29.85 | 758.2 | 37 | 2.8 | 63 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Eagle Pass, Texas | 28.82 | 732.0 | 29.53 | 750.0 | 67 | 19.4 | 87 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.10 | 2.5 | Light rain | |
| Eastport, Maine | 29.18 | 741.2 | 29.25 | 742.9 | 35 | 1.7 | 80 | N | 16 | 7.2 | ..... | ..... | 10s | ..... | N | 6.29 | 7.4 | Cloudy | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 67 | 19.4 | 60 | W | ..... | ..... | 1 | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Erie, Pennsylvania | 29.07 | 738.4 | 29.79 | 756.7 | 39 | 3.9 | 82 | W | 5 | 2.2 | ..... | 5k | 0 | W | ..... | 0.01 | 0.3 | Fair | |
| Escanaba, Michigan | 29.30 | 744.2 | 29.98 | 761.5 | 31 | — 0.6 | 69 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Florence, Arizona | 27.95 | 709.9 | 29.55 | 750.6 | 56 | 13.3 | 63 | Calm | 0 | 0 | ..... | 5cs | 0 | W | ..... | 0 | 0 | Fair | |
| Fort Bayard, New Mexico | 23.76 | 603.5 | 29.76 | 755.9 | 46 | 7.8 | 34 | NW | 4 | 1.8 | ..... | 0 | 8s | ..... | ..... | 0 | 0 | Cloudy | |
| Fort Craig, New Mexico | 25.06 | 636.5 | ..... | ..... | 53 | 11.7 | 48 | NW | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Fort Davis, Texas | 24.76 | 628.9 | 29.72 | 754.9 | 61 | 16.1 | 48 | S | 10 | 4.5 | ..... | 5k | 0 | S | ..... | 0 | 0 | Fair | |
| Fort Gibson, Indian Ter | 29.12 | 739.6 | 29.63 | 752.6 | 62 | 16.7 | 56 | E | 9 | 4.0 | ..... | 2cs | 0 | W | ..... | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.28 | 718.3 | 29.49 | 749.0 | 63 | 17.2 | 72 | E | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Fort St. Michael, Alaska | 29.28 | 743.7 | 30.31 | 769.9 | 8 | —13.3 | 100 | E | 11 | 4.9 | ..... | Haze | 0 | E | ..... | 0 | 0 | Hazy | |
| Fort Sill, Indian Territory | 28.37 | 720.6 | 29.43 | 747.5 | 63 | 17.2 | 57 | E | 2 | 0.9 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Galveston, Texas | 29.70 | 754.4 | 29.74 | 755.4 | 67 | 19.4 | 90 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Grand Haven, Michigan | 29.28 | 743.7 | 29.95 | 760.7 | 36 | 2.2 | 80 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianapolis, Indiana | 29.16 | 740.7 | 29.95 | 760.7 | 40 | 4.4 | 56 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianola, Texas | 29.68 | 753.9 | 29.70 | 754.4 | 69 | 20.6 | 90 | S | 16 | 7.2 | ..... | ..... | 10n | ..... | S | 0.03 | 0.8 | Light rain | |
| Jacksboro, Texas | 28.46 | 722.9 | 29.54 | 750.3 | 63 | 17.2 | 67 | SE | 13 | 5.8 | ..... | 0 | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| Jacksonville, Florida | 29.92 | 760.0 | 29.95 | 760.7 | 68 | 20.0 | 74 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.22 | 742.2 | 29.84 | 757.9 | 45 | 7.2 | 61 | SE | 5 | 2.2 | ..... | 0 | 7s | ..... | Calm | 0 | 0 | Fair | |
| Key West, Florida | 29.99 | 761.7 | 30.03 | 762.7 | 70 | 21.1 | 75 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Kittyhawk, North Carolina | 29.74 | 755.4 | 29.76 | 755.9 | 59 | 10.0 | 58 | NW | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Knoxville, Tennessee | 28.98 | 736.1 | 29.99 | 761.7 | 45 | 7.2 | 61 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Crosse, Wisconsin | 29.12 | 739.6 | 29.86 | 758.4 | 41 | 5.0 | 65 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| La Mesilla, New Mexico | 25.66 | 651.8 | 29.81 | 757.2 | 45 | 7.2 | 75 | Calm | 0 | 0 | ..... | 0 | 8s | ..... | Calm | 0 | 0 | Cloudy | |
| Laredo, Texas | 29.16 | 740.7 | 29.48 | 748.8 | 70 | 21.1 | 85 | N | 3 | 1.3 | ..... | ..... | 10n | ..... | Calm | 0.11 | 2.8 | Light rain | |
| Leavenworth, Kansas | 28.82 | 732.0 | 29.65 | 753.1 | 50 | 10.0 | 58 | E | 6 | 2.7 | ..... | 0 | 8ks | ..... | W | Inap. | Inap. | Cloudy | |
| Los Angeles, California | 29.40 | 746.7 | 29.73 | 755.1 | 56 | 13.3 | 87 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Louisville, Kentucky | 29.40 | 746.7 | 29.96 | 761.0 | 43 | 6.1 | 67 | N | 1 | 0.4 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Hazy | |
| Lynchburg, Virginia | 29.12 | 739.6 | 29.79 | 756.7 | 50 | 10.0 | 32 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.22 | 742.2 | 29.93 | 760.2 | 36 | 2.2 | 61 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mason, Texas | 27.95 | 709.9 | 29.61 | 752.1 | 67 | 19.4 | 74 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Threatening | |
| Memphis, Tennessee | 29.58 | 751.3 | 29.90 | 759.4 | 56 | 13.3 | 43 | E | 5 | 2.2 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.18 | 741.2 | 29.92 | 760.0 | 41 | 5.0 | 82 | E | 9 | 4.0 | ..... | 1c | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mobile, Alabama | 29.90 | 759.4 | 29.95 | 760.7 | 62.5 | 16.9 | 88 | SW | 2 | 0.9 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Montgomery, Alabama | 29.72 | 754.9 | 29.96 | 761.0 | 57 | 13.9 | 80 | Calm | 0 | 0 | ..... | 8c | Haze | W | Calm | 0 | 0 | Fair | |
| Morgantown, West Virginia | 28.78 | 731.0 | 29.84 | 757.9 | 43 | 6.1 | 59 | W | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mt. Washington, N. H. | 23.08 | 586.2 | 29.44 | 747.8 | 17 | — 8.3 | 100 | N | 30 | 13.4 | ..... | ..... | 10n | ..... | N | 0.47 | 11.9 | Light snow | |
| Nashville, Tennessee | 29.42 | 747.3 | 29.96 | 761.0 | 48 | 8.9 | 61 | Calm | 0 | 0 | ..... | 0 | 8s | ..... | Calm | 0 | 0 | Fair | |
| New Haven, Connecticut | 29.33 | 745.0 | 29.45 | 748.0 | 46 | 7.8 | 62 | N | 12 | 5.4 | ..... | 5ck | 5s | Calm | Calm | 0 | 0 | Cloudy | |
| New London, Connecticut | 29.38 | 746.2 | 29.42 | 747.3 | 45 | 7.2 | 68 | NW | 10 | 4.5 | ..... | 2ck | 8s | NW | N | Inap. | Inap. | Cloudy | |
| New Orleans, Louisiana | 29.80 | 756.9 | 29.86 | 758.4 | 61 | 16.1 | 82 | SE | 4 | 1.8 | ..... | 8ck;k | 0 | E | ..... | 0 | 0 | Fair | |
| Newport, Rhode Island | 29.35 | 745.5 | 29.40 | 746.7 | 41 | 5.0 | 91 | NW | 8 | 3.6 | ..... | ..... | 10n | ..... | NW | 0.04 | 1.0 | Light rain | |
| New York, New York | 29.33 | 745.0 | 29.51 | 749.5 | 45 | 7.2 | 67 | NW | 14 | 6.3 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Norfolk, Virginia | 29.69 | 754.1 | 29.75 | 755.6 | 48 | 8.9 | 56 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| North Platte, Nebraska | 26.81 | 681.0 | 29.34 | 745.2 | 44 | 6.7 | 80 | NW | 8 | 3.6 | ..... | 10cs | 0 | W | ..... | 0 | 0 | Cloudy | |
| Olympia, Washington Ter. | 30.02 | 762.5 | 30.05 | 763.3 | 49 | 9.4 | 85 | SW | 6 | 2.7 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Omaha, Nebraska | 28.63 | 727.2 | 29.69 | 754.1 | 47 | 8.3 | 62 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Threatening | |
| Oswego, New York | 29.30 | 744.2 | 29.62 | 752.3 | 42 | 5.6 | 83 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.10 | 2.5 | Threatening | |
| Pembina, Dakota | 28.86 | 733.0 | 29.72 | 754.9 | 35 | 1.7 | 70 | S | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Philadelphia, Pennsylvania | 29.53 | 750.0 | 29.58 | 751.3 | 48 | 8.9 | 56 | NW | 20 | 8.9 | ..... | 8k | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Phœnix, Arizona | 28.41 | 721.6 | 30.17 | 766.3 | 56 | 13.3 | 57 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.58 | 446.5 | 29.80 | 756.9 | 15 | — 9.4 | 39 | SW | 12 | 5.4 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Pioche, Nevada | 23.87 | 606.3 | 29.64 | 752.8 | 44 | 6.7 | 52 | NW | 11 | 4.9 | ..... | 2c | 0 | N | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.00 | 736.6 | 29.81 | 757.2 | 40 | 4.4 | 73 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | |
| Port Huron, Michigan | 29.18 | 741.2 | 29.86 | 758.4 | 36 | 2.2 | 71 | W | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Portland, Maine | 29.31 | 744.5 | 29.39 | 745.7 | 40 | 4.4 | 82 | N | 13 | 5.8 | ..... | ..... | 10n | ..... | N | 0.05 | 1.3 | Light rain | |
| Portland, Oregon | 30.10 | 764.5 | 30.25 | 767.1 | 47 | 8.3 | 92 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.08 | 2.0 | Cloudy | |
| Prescott, Arizona | 24.46 | 621.3 | 29.82 | 757.4 | 40 | 4.4 | 56 | S | 2 | 0.9 | ..... | 8c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Punta Rassa, Florida | 30.01 | 762.2 | 30.03 | 762.7 | 72 | 22.2 | 71 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |

## UNITED STATES SERIES.—Continued

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Red Bluff, California | 29.47 | 748.5 | 29.82 | 757.4 | 64 | 17.8 | 34 | N | 18 | 8.0 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Rochester, New York | 29.03 | 737.3 | 29.65 | 753.1 | 39 | 3.9 | 82 | NW | 17 | 7.6 | ..... | ..... | 10s | ..... | NW | 0.32 | 8.1 | Cloudy | |
| Roseburg, Oregon | 29.61 | 752.1 | 30.19 | 766.8 | 46.5 | 8.1 | 88 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sacramento, California | 29.64 | 752.8 | 29.72 | 754.9 | 63 | 17.2 | 62 | N | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.33 | 745.0 | 29.90 | 759.4 | 48 | 8.9 | 43 | SE | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Marks, Florida | 29.93 | 760.2 | 29.94 | 760.5 | 62 | 16.7 | 94 | Calm | 0 | 0 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| St. Paul, Minnesota | 28.96 | 735.6 | 29.79 | 756.7 | 42 | 5.6 | 65 | NE | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0.16 | 4.1 | Cloudy | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.45 | 646.4 | 29.78 | 756.4 | 47 | 8.3 | 48 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Antonio, Texas | 28.93 | 734.8 | 29.48 | 748.8 | 67 | 19.4 | 95 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | Inap. | Inap. | Light rain | |
| San Diego, California | 29.69 | 754.1 | 29.76 | 755.9 | 58 | 14.4 | 82 | NW | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 29.24 | 742.7 | 29.92 | 760.0 | 40 | 4.4 | 65 | NW | 19 | 8.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandy Hook, New Jersey | 29.47 | 748.5 | 29.50 | 749.3 | 47 | 8.3 | 70 | NW | 30 | 13.4 | ..... | 10ck | 0 | NW | ..... | 0 | 0 | Cloudy | |
| San Francisco, California | 29.72 | 754.9 | 29.78 | 756.4 | 55 | 12.8 | 87 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Santa Fé, New Mexico | 22.94 | 582.7 | 29.48 | 748.8 | 39 | 3.9 | 67 | E | 1 | 0.4 | ..... | 5cs | 0 | Calm | ..... | 0.02 | 0.5 | Fair | |
| Savannah, Georgia | 29.84 | 757.9 | 29.94 | 760.5 | 60 | 15.6 | 55 | NW | 4 | 1.8 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Shreveport, Louisiana | 29.57 | 751.1 | 29.78 | 756.4 | 61 | 16.1 | 88 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Smithville, North Carolina | 29.86 | 758.4 | 29.89 | 759.2 | 52 | 11.1 | 54 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Springfield, Massachusetts | 29.26 | 743.2 | 29.38 | 746.2 | 45 | 7.2 | 53 | N | 9 | 4.0 | ..... | ..... | 10ks | ..... | N | 0.05 | 1.3 | Cloudy | |
| Stockton, Texas | 26.48 | 672.6 | 29.48 | 748.8 | 62 | 16.7 | 78 | SE | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0.05 | 1.3 | Cloudy | |
| Thatcher's Island, Mass | 29.33 | 745.0 | 29.38 | 746.2 | 38 | 3.3 | 91 | NW | 12 | 5.4 | ..... | ..... | 10s | ..... | N | 0.12 | 3.0 | Cloudy | |
| Toledo, Ohio | 29.21 | 741.9 | 29.89 | 759.2 | 42 | 5.6 | 50 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 51 | 10.6 | 71 | NE | ..... | ..... | 1 | ..... | 8ks | ..... | Calm | Inap. | Inap. | Fair | |
| Tybee Island, Georgia | 29.90 | 759.4 | 29.93 | 760.2 | 60 | 15.6 | 53 | N | 6 | 2.7 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Umatilla, Oregon | 29 65 | 753.1 | ..... | ..... | 52 | 11.1 | 66 | SW | 24 | 10.7 | ..... | ..... | 10s | ..... | W | Inap. | Inap. | Cloudy | |
| Vicksburg, Mississippi | 29.63 | 752.6 | 29.99 | 761.7 | 56 | 13.3 | 67 | SE | 6 | 2.7 | ..... | 10c | 0 | S | ..... | 0 | 0 | Cloudy | |
| Virginia City, Montana | 24.10 | 612.1 | 29.58 | 751.3 | 32 | 0.0 | 69 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | |
| Visalia, California | 29.38 | 746.2 | 29.75 | 755.6 | 56 | 13.3 | 94 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Washington, D. C | 29.60 | 751.8 | 29.72 | 754.9 | 48 | 8.9 | 49 | NW | 19 | 8.5 | ..... | 0 | Haze | ..... | ..... | Inap. | Inap | Clear | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 56 | 13.3 | 63 | SE | ..... | ..... | 1 | 0 | 5ks | ..... | Calm | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 29.79 | 756.7 | 29.87 | 758.7 | 49 | 9.4 | 50 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Winnemucca, Nevada | 25.58 | 649.7 | 29.94 | 760.5 | 39 | 3.9 | 73 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wood's Holl, Mass | 29.31 | 744.5 | 29.36 | 745.7 | 42 | 5.6 | 74 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | N | 0.09 | 2.3 | Cloudy | |
| Yankton, Dakota | 28.50 | 732.9 | 29.78 | 756.4 | 43 | 6.1 | 91 | SE | 7 | 3.1 | ..... | ..... | 10n | ..... | Calm | 0.08 | 2.0 | Light rain | |
| Yuma, Arizona | 29.47 | 748.5 | 29.63 | 752.6 | 56 | 13.3 | 68 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A | 30.11 | 764.8 | 30.17 | 766.3 | 13.0 | —10.6 | 91 | NW | 10 | 4.5 | ..... | 2c | 0 | N | ..... | 0 | 0 | Fair | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I | 29.97 | 761.2 | 29.99 | 761.7 | 67 | 19.4 | 79 | SE | 2.4 | 1.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | 30.14 | 765.5 | 30.15 | 765.8 | 75 | 23.9 | 90 | N | 4 | 1.8 | ..... | 10c | 0 | Calm | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I | 29.88 | 758.9 | 29.96 | 761.0 | 79 | 26.1 | ..... | NE | 8 | 3.6 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | F. M. Everett. |
| Paramaribo, D. Guiana, S. A | 29.99 | 761.7 | 29.99 | 761.7 | 84 | 28.9 | 75 | NE | ..... | ..... | 3 | 5k | 6ks | E | ..... | 0 | 0 | ½ cloudy | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dr. H. Groot. |
| Medellin, Colombia, S. A | 25.20 | 640.1 | ..... | ..... | 71.2 | 21.8 | 77 | Calm | ..... | ..... | 0 | 0 | 2ks | ..... | ..... | 0.08 | 2.0 | ..... | Thomas Herran |

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m. Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,560 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,192 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m., Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,860 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,176.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,862.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.74 | 755.4 | 56 | 13.3 | 54 | 12.2 | 93 | SSW | 6 | 2.7 | .... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Pensacola, Fla. | 30.02 | 762.5 | 65 | 18.3 | 64 | 17.8 | 89 | WSW | 6 | 2.7 | .... | ..... | 8 | ..... | NE | 0 | 0 | ..... | ..... | Cloudy..... | |
| Navy Yard, Portsmouth, N.H. | 29.41 | 747.0 | 60 | 15.6 | 40 | 4.4 | 82 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.2 | 5. | ..... | ..... | Drizzling..... | |
| Naval Hospital, Yokohama, Japan | 30.32* | 770.1* | 54 | 12.2 | 46.5 | 8.1 | 77 | E | ..... | ..... | 2 | ..... | 8ks | ..... | WNW | 0 | 0 | ..... | ..... | Gloomy .... | |
| Adams, Panama | 29.97 | 761.2 | 83 | 28.3 | 82 | 27.8 | 83 | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Smooth | ..... | Misty..... | |
| Alliance, Naples, Italy | 29.95‡ | 760.7‡ | ..... | ..... | 63 | 17.2 | 67 | SW | ..... | ..... | 2–3 | ..... | 3 | ..... | SW | ..... | ..... | None | ..... | Pleasant..... | |
| Ashuelot, Shanghai, China | 30.14 | 765.5 | 53 | 11.7 | 52 | 11.1 | 100 | SE | ..... | ..... | 3 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Cloudy..... | |
| Canonicus, New Orleans, La | 29.85 | 758.2 | 47 | 8.3 | 61 | 16.1 | 94 | SSW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Fair..... | |
| Colorado, New York, N. Y. | 29.47‡ | 748.5‡ | ..... | ..... | 47 | 8.3 | 62 | NW | 20 | 8.9 | ..... | ..... | 8 | ..... | NNW | 0 | 0 | ..... | ..... | Hazy..... | |
| Constellation, N. 42° 22′ W. 55° 59′ | 29.23‡ | 742.4‡ | ..... | ..... | 43 | 6.1 | 92 | WSW | ..... | ..... | 2 | ..... | 10 | ..... | SW | ..... | ..... | Long | SW | Cloudy..... | |
| Constitution, Havre, France | 30.11‡ | 764.8‡ | ..... | ..... | 54 | 12.2 | 80 | E | ..... | ..... | 2 | ..... | 2 | ..... | E | ..... | ..... | ..... | ..... | Clear ..... | |
| Despatch, Constantinople, Turkey. | 29.99‡ | 761.7‡ | ..... | ..... | 64 | 17.8 | 68 | SW | ..... | ..... | 2 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Clear ..... | |
| Enterprise, N. 35° 33′, W. 73° 30′ | 29.82† | 757.4† | ..... | ..... | 57 | 13.9 | 100 | NW | ..... | ..... | 7 | ..... | 8 | ..... | NW | ..... | ..... | Very rough | N&W | Fair..... | |
| Franklin, Norfolk, Va | 29.83 | 757.7 | 55 | 12.8 | 49 | 9.4 | 57 | WNW | 12 | 5.4 | ..... | ..... | 10? | ..... | WNW | 0 | 0 | ..... | ..... | Clear..... | |
| Gettysburg Valetta, Malta | 29.91‡ | 759.7‡ | ..... | ..... | 66 | 18.9 | 100 | NE | ..... | ..... | 1 | ..... | 5 | ..... | E | 0 | 0 | ..... | ..... | Fair ..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.05 | 763.3 | 75 | 23.9 | 75 | 23.9 | 68 | NE | ..... | ..... | 4 | ..... | 2 | ..... | NE | ..... | ..... | Smooth | ..... | Clear..... | |
| Hartford, Montevideo, Uraguay | 29.85 | 758 2 | 68 | 20.0 | 65 | 18.3 | 89 | SSW | 6 | 2.7 | ..... | ..... | 8 | ..... | SW | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Marion, N. 33° 05′ E. 23° 05′ | 29.96 | 761.0 | 63 | 17.2 | 63 | 17.2 | 72 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear ..... | |
| Michigan, Erie, Pa | 29.34 | 745.2 | 65 | 18.3 | 39 | 3.9 | 64 | NNW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear.. ..... | |
| Monocacy, Shanghai, China | 29.96‡ | 761.0‡ | ..... | ..... | 53 | 11.7 | 80 | SE | ..... | ..... | 1 | ..... | 10 | ..... | E | ..... | ..... | ..... | ..... | Overcast..... | |
| New Hampshire, Port Royal, S. C. | 30.18 | 766.6 | 74 | 23.3 | 71 | 21.7 | 49 | N | 7 | 3.1 | .... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Omaha, St. Thomas, W. I. | 30.11* | 764.8* | 83 | 28.3 | 83 | 28.3 | 79 | S | 2 | 0.9 | ..... | ..... | 4 | ..... | S | 0 | 0 | Smooth | ..... | Bright..... | |
| Onward, Callao, Peru | 30.02† | 762.5† | ..... | ..... | 71 | 21.7 | 85 | SE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, Pensacola, Fla. | 29.97‡ | 761.2‡ | ..... | ..... | 65 | 18.3 | 100 | WSW | ..... | ..... | 2 | ..... | 5 | ..... | WSW | ..... | ..... | ..... | ..... | Clear..... | |
| Palos, Shanghai, China | 30.19* | 766.8* | 58 | 14.4 | 53 | 11.7 | 93 | SE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Pensacola, Honolulu, H. I. | 30.16 | 766.1 | 72 | 22.2 | 68 | 20.0 | 74 | NNE | 2 | 0.9 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Plymouth, Norfolk, Va | 29.73‡ | 755.1‡ | ..... | ..... | 50 | 10.0 | 64 | NW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Powhatan, Norfolk, Va | 29.77‡ | 756.1‡ | ..... | ..... | 49 | 9.4 | 93 | NW | 7.2 | 3.2 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear ..... | |
| Ranger, Amoy, China | 30.24* | 768.1* | ..... | ..... | 66 | 18.9 | 84 | SSE | ..... | ..... | 1–2 | ..... | 2 | ..... | ..... | ..... | ..... | Smooth | ..... | D. clouds..... | |
| Rio Bravo, Brownsville, Texas | 29.68 | 753.9 | 71 | 21.7 | 69 | 20.6 | 95 | SSE | ..... | ..... | 3 | ..... | 10 | ..... | SE | ..... | ..... | ..... | ..... | Light rain... | |
| Santee, Annapolis, Md | 29.75‡ | 755.6‡ | ..... | ..... | 49 | 9.4 | 50 | NW | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Saratoga, Washington, D. C. | 29.96* | 761.0* | ..... | ..... | 50 | 10.0 | 100 | NE | ..... | ..... | 2 | ..... | 7 | ..... | Calm | 0 | 0 | ..... | ..... | Cloudy ..... | |
| St. Louis, League Island, Pa | 29.54 | 750.3 | 64 | 17.8 | 50 | 10.0 | 61 | NW | 17 | 7.6 | .... | ..... | 8 | ..... | NW | 0.09 | 2.3 | ..... | ..... | Cloudy ..... | |
| Supply, Havre, France | 30.18 | 766.6 | 54 | 12.2 | 56 | 13.3 | 46 | SE | ..... | ..... | 5 | ..... | 2 | ..... | S | ..... | ..... | ..... | ..... | Clear ..... | |
| Swatara, Aspinwall | 29.98 | 761.5 | 83 | 28.3 | 82 | 27.8 | 87 | N | ..... | ..... | 3 | ..... | 5 | ..... | N | ..... | ..... | ..... | ..... | Fair ..... | |
| Tennessee, N. 10° 12′ E. 61° 18′ | 29.58* | 758.9* | 85 | 29.4 | 84 | 28.9 | 79 | ENE | 3 | 1.3 | .... | ..... | 5 | ..... | ..... | ..... | ..... | Long | NE | D. clouds..... | |
| Trenton, N. 43° 24′, E. 8° 10′ | 29 98‡ | 761.5‡ | ..... | ..... | 65 | 18.3 | 88 | E | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Hazy..... | |
| Tuscarora, N. 19° 20′, W. 105° 05′ | 29.68 | 753 9 | 75 | 23.9 | 75 | 23.9 | 86 | WSW | ..... | ..... | 4–5 | ..... | 10 | ..... | Calm | ..... | ..... | Mod'ate | WSW | Cloudy..... | |
| Vandalia, Villefranche, France | 29.98‡ | 761.5‡ | ..... | ..... | 61 | 16 1 | 71 | SSW | ..... | ..... | 1 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Clear..... | |
| Wabash, Boston, Mass | 29.38‡ | 746.2‡ | ..... | ..... | 39 | 3.9 | 100 | NNW | 8 | 3.6 | ..... | ..... | 10 | ..... | Calm | 0.12 | 3.0 | ..... | ..... | Light rain... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | |
| S. S. City of Peking, N. 37° 19′, W. 151° 06′ | | | 30.42† | 772.7† | 54 | 12.2 | 100 | ENE | 17.0 | 7.6 | | | 5 | | ENE | Small | SSW | D. clouds | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, N. 34° 32′, E. 147° 19′ | | | | | 52 | 11.1 | | E | | | 6 | | 3 | | SE | Smooth | E | D. clouds | Capt. Maury. |
| S. S. Colima, N. 16° 50′, W. 99° 50′ | | | 29.89† | 759.2† | 77 | 25.0 | 52 | NW | | | 1 | | 6 | | SW | | | D. clouds | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic, N. 46° 2′, W. 39° 01′ | | | 29.26* | 743.2* | | | | S | | | 4 | | 10 | | SE | Mod'ate | SE | Overcast | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. W. H. Thompson. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic, N. 40° 33′, W. 65° 45′ | | | 29.23† | 742.4† | 45 | 7.2 | 61 | NW | | | 4 | | | | NW | None | | D. clouds | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. *Aneroid; corrected for elevation; instrumental error not known. †Aneroid.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, N. 39° 30′, W. 180° 57′ | | | 30.47* | 773.9* | | | | N | | | 4 | | Heavy | | NNE | Smooth | | D. clouds | Capt. John Metcalf. |
| S. S. Gaelic, Hong-Kong, China | | | 30.09† | 764.3† | 70 | 21.1 | 90 | ESE | | | 4 | | | | | | | Misty | Capt. W. H. Kidley |
| S. S. Oceanic, N. 34° 53′, E. 153° 35′ | | | 30.23 | 767.8 | 48 | 8.9 | 78 | ENE | | | 1-3 | | 6 | | W | | W | D. clouds | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg, N. 28° 13′, W. 66° 07′ | | | 29.81 | 757.2 | 73.0 | 22.8 | 74 | WSW | | | 5 | | d | | | High | W | Blue sky | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | Character | Direction From— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, N. 49° 14′, W. 30° 40′ | | | 29.49* | 749.9* | 55 | 12.8 | 93 | SW | | | 2 | | 9 | | SW | Mod'ate | SSW | Cloudy | Captain Sargent. |
| S. S. Ohio, Philadelphia, Pa. | | | 29.60 | 751.8 | 53 | 11.7 | 86 | WNW | | | 3 | | 10 | | WNW | | | Clear? | Captain Morrison. |
| S. S. Pennsylvania, N. 39° 22′, W. 70° 13′ | | | 29.44* | 747.8* | 48 | 8.9 | ?? | NNW | | | 4 | | 9 | | NNW | Light | NW | Overcast | Captain Harris. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Corrected for temperature and elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Rundle. |
| S. S. Switzerland, N. 45° 23′, W. 43° 02′ | | | 29.22* | 742.2* | | | | WSW | 30 | 13.4 | | | 8 | | WSW | Heavy | SW | Cloudy | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |

*Aneroid; regulated to standard at Antwerp.

**ALLAN LINE MARINE SERIES.**

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| S. S. Scandinavian, N. 43° 13′, W. 53° 30′ | | | 29.05 | 737.9 | 41 | 5.0 | | SW | | | 3 | | 10 | | SW | Heavy | SW | Misty | Capt. W. Richardson. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.)**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, N. 38° 36′, W. 74° 55′ | | | 29.53 | 750.0 | 49 | 9.4 | 64 | NW | 24 | 10.7 | | | 2s | | NW | Rough | | Clear | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.91 | 759.7 | 21 | — 6.1 | 96 | W | 6.8 | 3.0 | | | 10s | | E | | | Cloudy | O. T. Sherman. |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assd'l,) Chief Signal Officer, U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 8, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.00 | 762.0 | 65.5 | 18.6 | 82 | SW | ..... | ..... | 5 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Dr. Ollive. |
| Nemours | ..... | ..... | 29.87 | 758.6 | 69.4 | 20.8 | 64 | Calm | ..... | ..... | 0 | ..... | 5 | ..... | ..... | 0.173 | 4.4 | Cloudy | Michel. |
| Algiers | ..... | ..... | 29.74 | 755.3 | 68.0 | 20.0 | 76 | W | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Towiliere. |
| La Calle | ..... | ..... | 29.72 | 754.9 | 61.3 | 16.3 | 71 | NW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Boulangeot. |
| Tunis | ..... | ..... | 29.69 | 754.2 | 70 3 | 21.3 | 63 | E | ..... | ..... | 8 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Jacques. |
| Sfax | ..... | ..... | 29.71 | 754.5 | 69.8 | 21.0 | ..... | ENE | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0 | 0 | Covered | Gau. |
| Saida | ..... | ..... | 29.87 | 758.6 | 61.5 | 16.4 | ..... | NNW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Herbin. |
| Tebessa | ..... | ..... | 29.76 | 756.0 | ..... | ..... | ..... | ENE | ..... | ..... | 5 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Watrin. |
| Geriville | ..... | ..... | 29.94 | 760.4 | 65.1 | 18.4 | 83 | NW | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0 | 0 | Very cloudy | Lemaillot. |
| Laghouat | ..... | ..... | 29.83 | 757.6 | 77.0 | 25.0 | 22 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Bertrand. |
| Biskra | ..... | ..... | 29.69 | 754.1 | 85.5 | 29.7 | 19 | NW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.50 | 749.3 | 30.06 | 763.4 | 50.2 | 10.1 | 39 | NW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.26 | 743.1 | 30.04 | 763.1 | 41.7 | 5.4 | 75 | WNW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbiski. |
| Eperies | 29.08 | 738.6 | 29.97 | 761.3 | 44.4 | 6.9 | 57 | N | ..... | ..... | 1 | ..... | 4s | ..... | ..... | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.79 | 731.2 | 30.05 | 763.3 | 47.7 | 8.7 | 40 | SE | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 0.075 | 1.90 | ..... | Andreas Rospini. |
| Hermannstadt | 28.47 | 723.2 | 29.92 | 760.0 | 43.7 | 6.5 | 79 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.185 | 4.70 | Raining | Prof. Reissenberg |
| Kremsmünster | 28.67 | 728.2 | 30.04 | 762.9 | 45.0 | 7.2 | 47 | ENE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner |
| Lemberg | 28.97 | 735.8 | 29.98 | 761.4 | 43.0 | 6.1 | 74 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Dr. T. Stanecki. |
| Pola | 29.89 | 759.3 | 30.01 | 762.2 | 55.0 | 12.8 | 36 | E | ..... | ..... | 3 | ..... | 1ks | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.52 | 749.7 | 29.98 | 761.6 | 48.6 | 9.2 | 50 | NW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.71 | 754.5 | 29.99 | 761.7 | 50.0 | 10.0 | 67 | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.002 | 0.05 | ..... | Karl Stancel. |
| Trieste | 29.93 | 760.3 | 30.04 | 762.9 | 54.9 | 12.7 | 44 | E | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Fair | P. Busin. |
| Vienna | 29.33 | 744.9 | 30.05 | 763.3 | 46.2 | 7.9 | 38 | WNW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 393.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.50 | 723.9 | 30.02 | 762.5 | 48.7 | 9.3 | 42 | E | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. M. Passau., |
| Brussels | 29.84 | 757.9 | 30.04 | 763.0 | 52.7 | 11.5 | 46 | E | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Royal Observatory. |
| Furnes | 30.00 | 762.1 | 30.03 | 762.7 | 57.4 | 14.1 | 64 | ESE | ..... | ..... | 5 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | M. E. de Cae. |
| Maeseyck | 29.98 | 761.6 | 30.11 | 764.8 | 50.5 | 10.3 | 47 | ESE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Upper 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.08 | 764.0 | 30.18 | 766.6 | 44.5 | 6.9 | ..... | SE | 31 | 13.9 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | Squally | W. B. swell. |
| Ardrossan | 29.92 | 760.0 | 29.94 | 760.5 | 59 | 15.0 | ..... | E | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.80 | 756.9 | 49.0 | 9.4 | ..... | ESE | 22 | 9.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Squally | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.89 | 759.2 | 54.6 | 12.6 | ..... | ESE | 21 | 9.4 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 29.70 | 754.4 | 46.4 | 8.0 | ..... | ESE | ..... | ..... | 4–5 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | J. L. E. Dreyer. |
| Bradford, Yorkshire | 29.58 | 751.3 | 29.98 | 761.5 | 52.1 | 11.2 | ..... | S | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | J. McLandsborough. |
| Bridgetown, (Barbados) | 30.00 | 762.0 | 30.04 | 763.0 | 84.5 | 29.2 | ..... | NE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 30.01 | 762.2 | 57.5 | 14.2 | ..... | ESE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | H. Todd. [H. O. |
| Cardington | ..... | ..... | 30.00 | 762.0 | 55.6 | 12.8 | ..... | SE | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | John McLaren. |
| Chatham, School M. E. | 29.85 | 758.2 | 29.99 | 761.7 | 49.2 | 9.6 | ..... | NE | ..... | ..... | 5 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.29 | 718 6 | 29.79 | 756.7 | 41.0 | 5.0 | ..... | E | ..... | ..... | 7 | ..... | 9 | ..... | ..... | ..... | ..... | Squally | Alexander Watt. |
| Donaghadee | 29.85 | 758.2 | 29.87 | 758.7 | 51 | 10.6 | ..... | SSE | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | J. Mac Gowan. |
| Dover | 29.94 | 760.5 | 29.97 | 761.2 | 47 | 8.3 | ..... | ESE | ..... | ..... | 5 | ..... | 0 | ..... | ..... | ..... | ..... | Clear | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.96 | 761.0 | 56.7 | 13.7 | ..... | SE | 9.8 | 4.4 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Thomas Mackereth. |
| Falmouth, Observatory | 29.46 | 748.3 | 29.70 | 754.4 | 47.4 | 8.6 | ..... | E | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Squally | The Staff. |
| Fort Napier, (Natal) | 27.82 | 706.6 | 30.10 | 764.5 | 61.6 | 16.4 | ..... | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.68 | 753.9 | 29.91 | 759.7 | 88 | 31.1 | ..... | W | ..... | ..... | 0 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's College | ..... | ..... | 29.69 | 754.8 | 47 | 8.3 | ..... | ESE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.75 | 755.6 | 29.80 | 756.9 | 62.2 | 16.8 | ..... | W | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Showery | Corpl. Wm. Allen, A. H. C. |
| Glasgow, Observatory | 29.76 | 755.9 | 29.96 | 761.0 | 55.0 | 12.8 | ..... | ESE | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | Blue sky | D. G. Maclean. |
| Great Yarmouth | 30.11 | 764.8 | 30.12 | 765 0 | 45 | 7.2 | ..... | ESE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.79 | 756.7 | 29.96 | 761.0 | 49.0 | 9.4 | ..... | E | ..... | ..... | 6 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | The Staff, for G. B. Airy. |
| Guernsey | 29.49 | 749.0 | 29.72 | 754.9 | 53 | 11.7 | ..... | ENE | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Dr. S. E. Hoskins, F. R. S. |
| Helston | ..... | ..... | 29.70 | 754.4 | 52 | 11.1 | ..... | E | ..... | ..... | 7 | ..... | 10k | ..... | ..... | 0.17 | 4.3 | Raining | M. P. Moyle. |
| Holyhead | 29.76 | 755.9 | 29.81 | 757.2 | 53 | 11.7 | ..... | SSE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Misty | John Tilston. |
| Jersey | 29.45 | 748.0 | 29.74 | 755.4 | 56.0 | 13.3 | ..... | E | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy | J. Fisher. |
| Kew, Observatory | ..... | ..... | 29.95 | 760.7 | 49.1 | 9.5 | ..... | E | 35 | 15.6 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | Hazy | The Staff. |
| Kingstown | 29.76 | 755.9 | 29.79 | 756.7 | 49 | 9.4 | ..... | SE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Misty | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.96 | 761.5 | 55.0 | 12.8 | ..... | E | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds | Wm. J. Harrison, F. G. S. |
| Malta, (Mediterranean) | 29.70 | 754.4 | 29.77 | 756.1 | 60.6 | 15.9 | ..... | SE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Sgt. Fred. Travis, A. H. |
| Nairn | 29.93 | 760.2 | 30.02 | 762.5 | 53 | 11.7 | ..... | SW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ¼ clouded | W. D. Penny. [O. |
| Nassau, (Bahamas) | ..... | ..... | 30.04 | 763.0 | 72.8 | 22.7 | ..... | SE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.82 | 757.4 | 30.02 | 762.5 | 56.8 | 13.8 | ..... | SE | ..... | ..... | 6 | ..... | 8c | ..... | NW | 0 | 0 | D. clouds | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.41 | 747.0 | 29.93 | 760.2 | 55.8 | 13.2 | ..... | E | ..... | ..... | 6 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.91 | 759.7 | 56 | 13.3 | ..... | E | ..... | ..... | 4 | ..... | 4c | ..... | ..... | ..... | ..... | D. clouds | Mr. Lucas. |
| Plymouth | 29.64 | 752.8 | 29.72 | 754.9 | 49.0 | 9.4 | ..... | E | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Merrifield. |
| Roche's Point | 29.57 | 751.1 | 29.62 | 752.3 | 48 | 8.9 | ..... | SE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | W. Kennedy. |
| Saint Ann's Head | 29.54 | 750.3 | 29.70 | 754.4 | 48 | 8.9 | ..... | ESE | ..... | ..... | 8 | ..... | 10 | ..... | ..... | ..... | ..... | Misty | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 30.07 | 763.8 | 45.8 | 7.7 | ..... | SE | 50 | 22.4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.86 | 758.4 | 66.0 | 18.9 | ..... | SW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Sergt. W. H. Lyne. |
| Sheffield | 29.74 | 755.4 | 30.02 | 762.5 | 53.6 | 12.0 | ..... | SE | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0 | 0 | Blue sky | W. F. Cooper. |
| Silloth Rectory | 29.90 | 759.4 | 29.93 | 760.2 | 56.4 | 13.6 | 47 | SE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.58 | 751.3 | 29.98 | 761.5 | 52.9 | 11.6 | ..... | E | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Blue sky | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 29.85 | 758.2 | 49 | 9.4 | ..... | SSE | ..... | ..... | 5 | ..... | 2 | ..... | ..... | ..... | ..... | ¼ clouded | John Sutherland. |
| Stratfield Turgiss | 29.68 | 753.9 | 29.90 | 759.4 | 56.5 | 13.8 | ..... | E | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Rev. C. H. Griffith, F. M. |
| Thurso | ..... | ..... | 30.02 | 762.5 | 48 | 8.9 | ..... | SSE | ..... | ..... | 7 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 29.72 | 754.9 | 50 | 10.0 | ..... | E | ..... | ..... | 7 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 29.52 | 749.8 | 51.6 | 10.9 | ..... | ESE | 33 | 14.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.99 | 761.7 | 64.5 | 18.0 | 82 | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0.08 | 2.0 | Fine | Francis Abbott, F. R. A. S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.62 | 752.3 | 29.81 | 757.2 | 83.0 | 28.3 | 69 | ESE | 5.0 | 2.2 | ..... | 4 | 6 | ..... | ..... | 0 | 0 | Cloudy | C. Meldrum. |
| Melbourne, Observatory | 30.23 | 767.8 | 30.32 | 770.1 | 67.0 | 19.4 | 69 | NE | 5 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Very fine | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngelause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m.

| Marine Series. Vessels. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. 0—10. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Algeria, N. 42° 20′ W. 60° 45′ | 29.36 | 745.7 | 40 | 4.4 | ..... | NE | ..... | ..... | 2 | 10 | 5* | SW | Misty | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. C. Prehn. [R. |
| S. S. Peruvian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Alex. Simpson |
| S. S. Yorkshire, N. 49° 20′ W. 9° 55′ | 29.27 | 743.4 | 55 | 12.8 | ..... | ESE | ..... | ..... | 2 | 6 | 2 | ENE | D. clouds | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.21 | 665.7 | ..... | ..... | 70.2 | 21.2 | 82 | E | ..... | ..... | 1 | 3pc | 3k;hz | ..... | ..... | 0 | 0 | ..... | Federico Maison. |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.17 | 766.3 | 30.22 | 767.5 | 42.4 | 5.8 | 79 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Fanöe | 30.22 | 767.6 | 30.24 | 768.1 | 51.3 | 10.7 | 44 | ENE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | |
| Godthaab, (Greenland) | 29.92 | 759.9 | 29.96 | 761.0 | 28.0 | — 2.2 | 83 | NNE | ..... | ..... | 4* | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Stykkisholm, (Iceland) | 29.41 | 747.0 | 29.45 | 748.1 | 25.3 | — 3.7 | 100 | NE | ..... | ..... | 8 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | |
| Thorshavn, (Farõe) | 29.89 | 759.1 | 29.92 | 760.0 | 46.0 | 7.8 | 75 | SSW | ..... | ..... | 8 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | |
| Vestervig | 30.15 | 765.9 | 30.32 | 770.2 | 47.8 | 8.8 | 73 | NE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.36 | 745.8 | 29.91 | 759.8 | 51.8 | 11 | 84 | W | ..... | ..... | 1 | ..... | 5 | ..... | W | 0 | 0 | Cloudy | Collignon, Director. |
| Amiens, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bouvarne, Director. |
| Avignon, Normal School | 29.75 | 755.7 | 29.83 | 757.7 | 69.8 | 21 | 44 | ESE | ..... | ..... | 1 | ..... | 2 | ..... | W | 0 | 0 | Slightly cl'dy | Mr. Giraud, Director |
| Bar-sur-Seine | 29.30 | 744 2 | 29.85 | 758.1 | 60.3 | 15.7 | 21 | E | ..... | ..... | 3 | ..... | 2ck | ..... | S | 0 | 0 | Slightly cl'dy | C. Saillard. |
| Beaumette Obs'y (Angers) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Albert Cheux. |
| Beauvais | ..... | ..... | ..... | ..... | 56.7 | 13.7 | 32 | E | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Normal School. |
| Besançon | 28.99 | 736.3 | 29.86 | 758.5 | 61.5 | 16.4 | 53 | NE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | Inap | Inap. | Clear | Normal School. |
| Bourg-en-Bresse | 28.80 | 731.6 | 29.71 | 754.7 | 57.6 | 14.2 | 67 | SE | ..... | ..... | 4 | ..... | 8cn | ..... | SE | 0.098 | 2.5 | Very cloudy | Normal School. |
| Bourges, Normal School | 29.22 | 742.1 | 29.76 | 755.8 | 61.2 | 16.2 | 67 | E | ..... | ..... | 2 | ..... | 5 | ..... | E | 0 | 0 | Cloudy | A. Wagner, Director. |
| Brest, Naval Observatory | 29.31 | 745.3 | 29.56 | 750.9 | 57.7 | 14.3 | 73 | SE | ..... | ..... | 1 | ..... | 10 | ..... | SE | 0.069 | 1.75 | ..... | The Staff. |
| Carcassonne, Normal School | 29.36 | 745.8 | 29.77 | 756.2 | 62.2 | 16.8 | 73 | ESE | ..... | ..... | 6 | ..... | 5 | ..... | SW | 0 | 0 | Cloudy | Vateau, Director. |
| Caen | 29.69 | 754.0 | 29.76 | 755.8 | 60.8 | 16 | 49 | SSE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | Normal School. |
| Chartres, Normal School | 29.18 | 741.1 | 29.73 | 755.1 | 60.1 | 15.6 | 96 | E | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.58 | 751.3 | 29.89 | 759.3 | 58.6 | 14.8 | 47 | E | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | T. Leloup, Director. |
| Clermont-Fd., Puy de D.Obs | 28.38 | 720.8 | 29.68 | 753.8 | 68.9 | 20.5 | 37 | S | ..... | ..... | 2 | ..... | 8 | ..... | S | 0.008 | 0.2 | Very cloudy | Alluard, Director. |
| Commercy, Normal School | 29.12 | 739.6 | 30.00 | 762 1 | 50.6 | 10 | 62 | E | ..... | ..... | 4 | ..... | 1 | ..... | E | 0 | 0 | Clear | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.74 | 730.0 | 29.88 | 759.0 | 62.4 | 16.9 | 43 | SE | ..... | ..... | 4 | ..... | 8 | ..... | SE | 0 | 0 | ¾ covered | M. Kina. |
| Grenoble | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| La Roche-sur-Yon, N. School | 29.47 | 748.4 | 29.67 | 753.7 | 62.6 | 17 | 70 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Mouillot, Director. |
| Le Mans, Normal School | 29.49 | 749.1 | 29.80 | 756.8 | 57.9 | 14.4 | 65 | SE | ..... | ..... | 4 | ..... | 8 | ..... | E | 0 | 0 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 28.91 | 734.2 | 29.79 | 756.7 | 63.7 | 17.6 | 51 | N | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Voudez, Director. |
| Lorient, Naval Observatory | 29.55 | 750.6 | 29.65 | 753.1 | 61.2 | 16.2 | 75 | SE | ..... | ..... | 5 | ..... | 8 | ..... | SE | 0 | 0 | ¾ covered | T. Carré, Director. |
| Mâcon, Normal School | 29.18 | 741.1 | 29.83 | 757.7 | 53.2 | 11.8 | 83 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | M. Marchal, Director. |
| Meiz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. A. Schuster, Dir. |
| Mirecourt | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| Nismes, Normal School | 28.81 | 731.8 | 29.85 | 758.3 | 53.2 | 11.8 | 33 | ENE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Normal School. |
| Orleans, Normal School | 29.63 | 752.5 | 29.82 | 757.5 | 76.6 | 24.8 | 48 | S | ..... | ..... | 1 | ..... | 10 | ..... | N | 0 | 0 | Covered | Boyer, Director. |
| Paris, Observatory | 29.38 | 746.2 | 29.75 | 755.7 | 66.2 | 19 | 61 | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Bernard, Director. |
| Privas | 29.60 | 751.9 | 29.84 | 757.9 | 58 1 | 14.5 | 41 | ESE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | National Observatory. |
| Puy de Dome (Summit) | 28.84 | 732.4 | 29.90 | 759.4 | 56.3 | 13.5 | 78 | SE | ..... | ..... | 2 | ..... | 5 | ..... | SE | 0 | 0 | Cloudy | Normal School |
| Rochefort, Naval Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Alluard, Director. |
| Rouen, Normal School | 29.65 | 753.0 | 29.68 | 753 8 | 65.3 | 18.5 | 67 | E | ..... | ..... | 3 | ..... | 10 | ..... | E | 0 | 0 | Covered | Lt. Decante, Director. |
| Saint Malo (Port) | 29.76 | 755.9 | 29.85 | 758.1 | 63.7 | 17.6 | 28 | SSE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | F. Lucard, Director. |
| Tarbes, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. H. Hercouet. |
| Villefranche | 28 68 | 728.4 | 29.72 | 754.8 | 71.6 | 22 | 36 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | T. Hugues, Director. |
| SUB-SERIES. | 29.10 | 739.0 | 29.80 | 756.9 | 62.6 | 17 | 80 | S | ..... | ..... | 2 | ..... | 8 | ..... | S | 0 | 0 | Very cloudy | Vilot, Director |
| Fort de France, Martinique | 29.85 | 758.1 | 29.87 | 758.8 | 80.6 | 27 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchési. |
| Lyons | ..... | ..... | 29.88 | 758.9 | 59.7 | 15.4 | ..... | ..... | ..... | ..... | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | M. Jeys. |
| Marseilles, Observatory | ..... | ..... | 29.80 | 756.9 | 65.3 | 18.5 | 71 | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | The Staff. |
| Mont-Louis | 24.67 | 626.5 | 29.98 | 761.5 | 47.3 | 8.5 | 66 | ENE | 9.3 | 4.17 | ..... | ..... | 4 | ..... | SSW | 0 | 0 | ..... | Mr. Falguère. |
| Nice | ..... | ..... | 29.90 | 759.5 | 64 8 | 18.2 | 69 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.56 | 750.8 | 29.84 | 757.8 | 60 1 | 15.6 | 40 | ESE | ..... | ..... | 4 | 3c | ..... | SW | ..... | 0 | 0 | Partial halo | Marié Davy, Director |
| Perpignan | ..... | ..... | 29.84 | 757.8 | 62.2 | 16.8 | 61 | SE | 18.6 | 8.33 | ..... | ..... | 7 | ..... | W | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.28 | 565.9 | ..... | ..... | 37.8 | 3.2 | ..... | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Cloudy | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.68 | 753.9 | 29.85 | 758.1 | 60 8 | 16.0 | 34 | E | ..... | ..... | 2–3 | ..... | 1 | WSW | ..... | 0 | 0 | Clear | E. Renou. |
| Toulouse, Observatory | 29.01 | 736.9 | 29.73 | 755.1 | 62 8 | 17.1 | 56 | SSE | ..... | ..... | 8 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Tours | 29.53 | 750.0 | 29.72 | 755.0 | 55.9 | 13.3 | 69 | E | ..... | ..... | 3 | ..... | 10 | ..... | W | 0 | 0 | ..... | C. Marquet. |
| Versailles, (near Paris) | ..... | ..... | 29.84 | 757.8 | 59.4 | 15.2 | 39 | SE | ..... | ..... | 6 | ..... | 4 | ..... | ..... | 0 | 0 | Fair | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.07 | 763.7 | 30.09 | 764.3 | 59.5 | 10.3 | 96 | NW | 1.8 | 0.8 | ..... | ..... | 10 | ..... | ..... | 1.984 | 50.4 | Covered | Marc Dechevrens, S. J |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 29.97 | 761.2 | 30.15 | 765.7 | 43.0 | 6.1 | 65 | NE | | | 1 | | 9 | | | 0.008 | 0.2 | Light rain... | Prof. Arndt. |
| Breslau | 29.52 | 749.8 | 30.05 | 763.3 | 36.7 | 2.6 | 96 | NW | | | 2 | | 10 | | | 0.115 | 2.93 | Raining | Royal University Obs'y |
| Carlsruhe | 29.60 | 751.9 | 30.03 | 762.8 | 51.8 | 11.0 | 45 | E | | | 4 | | 0 | | | 0 | 0 | | Albert Senz. |
| Cassel | 29.57 | 751.0 | 30.18 | 766.5 | 49.6 | 9.8 | 43 | NE | | | 4 | | 4 | NE | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.96 | 760.9 | 30.12 | 765.0 | 53.4 | 11.9 | 42 | E | | | 5 | | 1 | | | 0 | 0 | | Director Lose. |
| Emden | 30.24 | 768.1 | 30.28 | 769.0 | 51.6 | 10.9 | 48 | E | | | 4 | | 0 | | | 0 | 0 | | Prof. Prestel. |
| Frankfort on the Main | 29.76 | 755.9 | 30.13 | 765.3 | 51.8 | 11 | 24 | ENE | | | 4 | | 1 | | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 28.54 | 724.8 | 29.98 | 761.5 | 50.7 | 10.4 | 44 | NE | | | 8 | | 0 | | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 30.16 | 766.0 | 30.23 | 767.8 | 48.7 | 9.3 | 45 | NNE | | | 5 | | 3k | | | 0 | 0 | Clear. | Captain F. Hegemann. |
| Kiel | 30.25 | 768.3 | 30.26 | 768.7 | 45.9 | 7.7 | 50 | N | | | 3 | | 1 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.95 | 760.8 | 30.04 | 762.9 | 49.6 | 9.8 | 82 | NE | | | 5 | | 8 | | | Inap. | Inap. | | Prof. E Luther |
| Köslin | | | 30.07 | 763.7 | 37.9 | 3.3 | | NE | | | 4 | | 4 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.72 | 755.0 | 30.15 | 765.9 | 47.3 | 8.5 | 47 | N | | | 2 | | 10 | N | | 0 | 0 | | Prof. Bruhns. |
| Memel, Naval School | 30.06 | 763.4 | 30.10 | 764.6 | 51.6 | 9.9 | 79 | NE | | | 4 | | 10ks | | | | | | Reinbrecht von Skalweit. |
| Neufahrwasser | 30.05 | 763.3 | 30.07 | 763.7 | 39 2 | 4.0 | 93 | N | | | 3 | | 10 | | | 0 | 0 | Foggy | A. Lothes. |
| Posen | 29.78 | 756.4 | 30.08 | 764.1 | 37.2 | 2.9 | 100 | NW | | | 3 | | 10 | | | 0.154* | 3.9* | | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.46 | 748.3 | 30.02 | 762.4 | 53.8 | 12.1 | 32 | ENE | | | 3 | | 0 | | | 0 | 0 | | Dr. Schur. |
| Stuttgart | 29.09 | 738.9 | 30.04 | 763.0 | 50.0 | 10.0 | 31 | E | | | 1 | | 1 | E | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | 29.43 | 747.6 | 29.96 | 760.9 | 52.3 | 11.3 | 37 | NE | | | 6 | | 0 | | | 0 | 0 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.60 | 726.3 | 30.11 | 764.9 | 45.0 | 7.2 | 59 | ENE | 7 | 3 | | | 6k | E | | 0 | 0 | | Dr. Von Bebber. |
| Wustrow, Naval School | 30.25 | 768.3 | 30.29 | 769.3 | 43.5 | 6.4 | 70 | NE | | | 2 | | 10 | | | 0 | 0 | | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time. *Precipitation in 48 hours.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.54 | 750.2 | 29.92 | 760.0 | 66.4 | 19.1 | | SW | | | 1.0 | | | | | | | Dusty | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.70 | 754.3 | 29.75 | 755.6 | 84.7 | 29.3 | 66 | SW | 33? | 14.8? | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.30 | 744.2 | 29.76 | 756.0 | 95.1 | 35.1 | 32 | Calm | | | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.77 | 756.1 | 29.80 | 757.0 | 85.5 | 29.7 | 56 | NW | 15 | 6.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.76 | 705.0 | 29.70 | 754.4 | 91.9 | 33.3 | 26 | N | | | | | 0 | | | 0 | 0 | Dust-whirl. | |
| Lahore | 28.98 | 736.2 | 29.71 | 754.6 | 90.9 | 32.7 | 21 | N | 5.8 | 2.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.28 | 692.9 | 29.76 | 755.9 | 86.9 | 30.5 | 61 | W | 8 | 3.6 | | | 1 | | | 0 | 0 | D. clouds | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.80 | 731.6 | 29.68 | 753.9 | 89.8 | 32.1 | 20 | Calm | 0.4 | 0.2 | | | 7 | | | 0 | 0 | | |
| Agra | 29.11 | 739.3 | 29.66 | 753.2 | 92.6 | 33.7 | 25 | S | | | | | | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.77 | 730.8 | 29.79 | 756.8 | 90.3 | 32.4 | 32 | SW | 4.6 | 2.1 | | | 8 | | SE | 0 | 0 | D. clouds | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.31 | 744.5 | 29.67 | 753.6 | 97.1 | 36.2 | 29 | SSE | 2.3 | 1.0 | | | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.36 | 745.6 | 29.66 | 753.3 | 89.2 | 31.8 | 34 | Calm | 0.8 | 0.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.52 | 749.8 | 29.70 | 754.3 | 96.0 | 35.6 | 7 | W | 1.3 | 0.6 | | | 10 | W | W | 0 | 0 | Overcast | |
| Hazaribagh | 27.86 | 707.6 | 29.89 | 759.1 | 74.8 | 23.8 | 49 | SW | 7.2 | 3.2 | | | 10 | | W | 0.11 | 2.8 | Thunder-storm. | |
| Cuttack | 29.66 | 753.5 | 29.74 | 755.5 | 88.6 | 31.4 | 50 | S | 4.5 | 2.0 | | | 4 | | | 0.04 | 1.0 | D. clouds | |
| Calcutta (Alipore) | 29.71 | 754.6 | 29.73 | 755.1 | 86.5 | 30.3 | 63 | S | 9 | 4.0 | | | 6 | | W | 0 | 0 | D. clouds | |
| Goalpara | 29.39 | 746.4 | 29.78 | 756.3 | 77.9 | 25.5 | 63 | E | 7.9 | 3.5 | | | 2 | | | 0.27 | 6.9 | D. clouds | |
| Chittagong | 29.75 | 755.5 | 29.84 | 757.8 | 83.9 | 28.8 | 79 | WSW | 6.5 | 2.9 | | | 5 | | | 0 | 0 | Misty | |
| Sibsagar | 29.56 | 750.7 | 29.90 | 759.4 | 68.2 | 20.1 | 85 | ENE | 5.9 | 2.6 | | | 10 | W | W | 0.13 | 3.3 | Overcast | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.38 | 720.8 | 29.70 | 754.4 | 95 | 35.0 | 21 | NW | 6.8 | 3.0 | | | 2 | S | | 0 | 0 | D. clouds | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.59 | 751.5 | 30.00 | 762.0 | 54.7 | 12.6 | 30 | SW | 1.8 | 0.8 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 29.89 | 759.2 | 30.00 | 762.0 | 54.0 | 12.2 | 38 | ESE | 11.9 | 5.3 | ..... | ..... | 9 | NW | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzloni |
| Vicenza | 29.81 | 757.2 | 30.00 | 762.1 | 52.7 | 11.5 | 52 | NE | 3.1 | 1.4 | ..... | ..... | 6 | W | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.67 | 728.3 | 30.00 | 761.9 | 48.9 | 9.4 | 52 | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.48 | 748.7 | 30.00 | 761.9 | 54.7 | 12.6 | ..... | S | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.08 | 738.7 | 30.00 | 761.9 | 51.8 | 11.0 | 77 | N | 0.7 | 0.3 | ..... | ..... | 9 | NE | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 28.06 | 712.6 | 29.98 | 761.5 | 44.6 | 7.0 | 96 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.67 | 753.5 | 29.89 | 759.2 | 63.7 | 17.6 | 44 | ENE | ..... | ..... | 4 | ..... | 10 | W | ..... | 0.079 | 2.0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.73 | 755.2 | 29.90 | 759.5 | 60.8 | 16.0 | 50 | N | 3.1 | 1.4 | ..... | ..... | 10 | SW | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.69 | 754.2 | 30.01 | 762.3 | 54.5 | 12.5 | 54 | SE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.64 | 752.8 | 29.89 | 759.3 | 64.4 | 18.0 | 36 | N | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 29.81 | 757.2 | 29.90 | 759.4 | 63.9 | 17.7 | 38 | ENE | 8.7 | 3.9 | ..... | ..... | 10 | WSW | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 29.96 | 761.0 | 30.01 | 762.3 | 54.1 | 12.3 | 62 | ENE | 9.4 | 4.2 | ..... | ..... | 1 | SW | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.41 | 721.6 | 29.97 | 761.3 | 50.0 | 10.0 | 55 | ESE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.78 | 756.4 | 29.89 | 759.2 | 62.2 | 16.8 | 60 | S | ..... | ..... | 2 | ..... | 8 | SE | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.72 | 754.8 | 29.89 | 759.3 | 65.5 | 18.6 | 65 | SW | 4.3 | 1.9 | ..... | ..... | 10 | ..... | ..... | 0.142 | 3.6 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U. | 29.70 | 754.3 | 29.90 | 759.4 | 70.2 | 21.2 | 43 | NE | ..... | ..... | 2 | ..... | 10 | NE | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 60.8 | 16.0 | 62 | NNW | 8.7 | 3.9 | ..... | ..... | 7 | ..... | ..... | 0 | 6 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.53 | 750.1 | 29.72 | 754.9 | 69.4 | 20.8 | 53 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.08 | 738.6 | 29.97 | 761.1 | 59.4 | 15.2 | 76 | NW | 2.5 | 1.1 | ..... | ..... | 10 | ..... | ..... | 0.008 | 0.2 | ..... | Prof. F. D. Conti. |
| Palermo | 29.50 | 749.4 | 29.76 | 755.8 | 63.0 | 17.2 | 75 | E | 3.8 | 1.7 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.77 | 756.1 | 29.84 | 758.0 | 61.9 | 16.6 | 81 | NE | ..... | ..... | 4 | ..... | 10 | ENE | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.34 | 745 3 | 29.90 | 759.4 | 64.9 | 18.3 | 52 | ESE | 3.1 | 1.4 | ..... | ..... | 10 | SW | ..... | 0 | 0 | ..... | Prof. F. Brioschi |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nagasaki | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Tokei (Yeddo) | 30.38 | 771.6 | 30.45 | 773.4 | 42.3 | 5.7 | 80 | ENE | 4.4 | 2.0 | ..... | 0 | 4s | ..... | W | 0 | 0 | Fair. | The Observatory. |
| Tokei (Yeddo) University | 30.33 | 770.4 | 30.44 | 773.1 | 41.2 | 5.3 | 91 | E | 3 | 1.3 | ..... | 7ck | 1ks | ..... | ..... | 0 | 0 | Fair. | Prof. P. V. Veeder. |

Note.—The data are published as given. The rain-fall at the Obsezvatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | 63.0 | 17.2 | 81 | SW | 0.9 | 0.4 | ..... | 0 | 4ck | ..... | SW | 0 | 0 | ½ cloudy | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 48.2 | 9.0 | 67 | NW | 1.8 | 0.8 | ..... | 0 | 1 | ..... | NW | 0 | 0 | Clear. | L. Castillo, A. E. |
| Guadalajara | 24.90 | 632.4 | 29.91 | 759.8 | 58.6 | 14.8 | 60 | W | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear. | Prof. L. Perez. |
| Guanajuato | 23.51 | 597.4 | 29.74 | 755.4 | 57.6 | 14.2 | 57 | SW | 1.8 | 0.8 | ..... | 2c | 2n | WSW | SW | 0 | 0 | Clear. | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 55.4 | 13.0 | 53 | NE | 0.4 | 0.2 | ..... | 2c | 3k | W | SW | 0 | 0 | ½ cloudy | Prof. M. Leal. |
| Mexico | 22.90 | 581.7 | 29.31 | 744.4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Puebla | ..... | ..... | ..... | ..... | 60.7 | 15.4 | 69 | SW | 11.1 | 4.9 | ..... | 0 | 0 | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, M. E. |
| Toluca | 23.22 | 589.9 | 29.90 | 759.4 | 52.5 | 11.4 | 93 | SSE | 4.2 | 1.9 | ..... | 0 | 6kn | ..... | SSW | 0.52 | 13.2 | Clear. | Prof. B. Gonzalez. |
| Tlacotalpam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ½ cloudy | Prof. C. Velazquez. |
| San Luis Potosi | 29.56 | 750.8 | 29.57 | 751.1 | 80.6 | 27.0 | 74 | S | 26.1 | 11.7 | ..... | 0 | 8k | ..... | S | 0 | 0 | Cloudy. | Prof. F. R. Bayly. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Zacatecas | 29.57 | 751.0 | 29.59 | 751.7 | 79.7 | 26.5 | 76 | SE | ..... | ..... | ..... | 5cs | 4s | S | ..... | 0 | 0 | Hazy | Prof. J. Rossell. |
| Puebla, (Catholic Institute) | 23.27 | 591.3 | 30.05 | 763.4 | 41.0 | 5.0 | 64 | SW | 5.6 | 2.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | J. A. Bonilla, M. E. |
| Morelia | 23.81 | 606.0 | ..... | ..... | 51.8 | 11.0 | 79 | S | ..... | ..... | ..... | 1c | 4s | SW | SW | 0 | 0 | Clear. | P. Spina. [M. M. D. D. |
| Durango | ..... | ..... | ..... | ..... | 59.0 | 15.0 | 64 | S | 1.8 | 0.8 | ..... | 0 | 1 | ..... | SW | Inap. | Inap. | Clear | M. Tena, F. L. Param. |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,284.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.08 | 764.1 | 30.08 | 764.1 | 50.4 | 10.2 | ..... | E | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 30.16 | 766.1 | 30.22 | 767 5 | 49.3 | 9.6 | ..... | E | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 30.19 | 766.7 | 30.19 | 766.7 | 48.6 | 9.2 | ..... | E | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 30.04 | 762.9 | 30.04 | 762.9 | 51.1 | 10.6 | 68 | E | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Utrecht | 30.10 | 764.6 | 30.15 | 765 8 | 51.6 | 10.9 | 28 | E | ..... | ..... | 5 | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | H. v d Brink. |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer: Corrected for instrumental error and temperature. | | Barometer: Reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind: Direction. | Wind: Velocity. | | Wind: Force. | Clouds: Amount. | | Clouds: Direction. | | Rain-fall or melted snow in the past 24 hours. | | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inches. | Millimeters. | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | Inches. | Millimeters. | | |
| Bergen | 30.34 | 770.6 | 30.39 | 772.0 | 48.9 | 9.4 | 39 | SSW | 4.9 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Bróno | 30.43 | 773.0 | 30.47 | 774.0 | 46.0 | 7.8 | 38 | E | 9 | 4 | ..... | ..... | 1 | ..... | ..... | 0.008 | 0.2 | ..... | |
| Christiania | 30.27 | 768.8 | 30.42 | 772.6 | 49.5 | 9.7 | 60 | N | 7 | 3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 30.42 | 772.6 | 30.46 | 773.7 | 39.9 | 4.4 | 56 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0.071 | 1.8 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.53 | 750.0 | 29.72 | 754.9 | 62.4 | 16.9 | 88 | W | 11.2 | 5.0 | ..... | ..... | 3 | ..... | ..... | 0.118 | 3.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.66 | 728.0 | 29.70 | 754.3 | - 57.2 | 14.0 | 91 | SSW | 16.1 | 7.2 | ..... | ..... | 10 | SSW | ..... | 0.535 | 13.6 | Light rain... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 29.77 | 756.1 | 29.85 | 758.3 | 70.3 | 21.3 | 58 | WSW | 14.3 | 6.4 | ..... | ..... | 0 | ..... | ..... | 0.059 | 1.5 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.22 | 742.1 | 29.58 | 751.2 | 59.0 | 15.0 | 95 | SW | 22.4 | 10.0 | ..... | ..... | 9 | ..... | ..... | 0.280 | 7.1 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 29.71 | 754.5 | 29.78 | 756.3 | 66.6 | 19 2 | 76 | W | 16.8 | 7.5 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell: Height scale 0-9 | Sea or swell: Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique.. | 29.69 | 754.1 | 29.70 | 754.3 | 82.4 | 28.0 | ..... | SSE | ..... | ..... | 5 | ..... | 2 | ..... | SSE | 2 | ..... | Raining | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Rio Douro, S. 25° 58′, E. 32° 37′ | ..... | ..... | 30.17 | 766.2 | 75.2 | 24.0 | ..... | S | ..... | ..... | 4 | ..... | 10 | ..... | S | 6 | S | Raining | J. T. d'Oliveria, Com'd't. |
| Sado, Porto Praya, Cape Verde Islands. | 30.04* | 763.0* | 30.05* | 763.3* | 77.9 | 25.5 | ..... | NNE | ..... | ..... | 3 | ..... | 1 | ..... | Calm | 2 | NNE | D. clouds | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.72 | 755.0 | 29.73 | 755.2 | ..... | ..... | ..... | W | ..... | ..... | 2 | ..... | 2 | ..... | W | 1 | ..... | Blue sky | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreira, dos Amas, Com't |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.55 | 750.6 | 29.99 | 761.7 | 38.3 | 3.5 | 87 | S | 4 | 2 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.64 | 752.8 | 30.06 | 763.5 | 52.9 | 11.6 | 64 | SE | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy clouds... | Astronomical Obs. |
| Dorpat | 30.01 | 762.3 | 30.26 | 768.6 | 52.0 | 11.1 | 68 | ESE | 7 | 3 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Welhrauch. |
| St. Petersburg | 30.32 | 770.1 | 30.34 | 770.5 | 52.7 | 11.5 | 62 | ESE | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.98 | 761.6 | 30.31 | 769.9 | 46.4 | 8.0 | 82 | ESE | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Ch. Forsten. |
| Kieff | 29.32 | 744.8 | 29.95 | 760.8 | 55.2 | 12.9 | 72 | E | 7 | 3 | ..... | ..... | 10c;ks;n 9kn | ..... | ..... | ..... | ..... | Raining | Physical Cabinet. |
| Nikolaiev | 29.91 | 759.7 | 29.98 | 761.5 | 55.4 | 13.0 | 73 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kerich | 29.99 | 761.8 | 30.01 | 762.3 | 52.3 | 11.3 | 92 | S | 7 | 3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.86 | 758.4 | 30.41 | 772.5 | 54.1 | 12.3 | 49 | SE | 9 | 4 | ..... | ..... | 7s | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.77 | 756.2 | 29.97 | 761.3 | 62.2 | 16.8 | 33 | E | 18 | 8 | ..... | ..... | 5k | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 30.41 | 772.4 | 30.43 | 772.9 | 49.8 | 9.9 | 62 | S | 2 | 1 | ..... | ..... | 4k | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.56 | 725.3 | 29.96 | 760.9 | 61.2 | 16.2 | 54 | NW | 4 | 2 | ..... | ..... | 10n | ..... | ..... | Blank | Blank | Heavy clouds... | Physical Observatory |
| Astrakhan | 30.15 | 765.9 | 30.07 | 763.8 | 48.2 | 9.0 | 66 | E | 4 | 2 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Light clouds | Sebastianof. |
| Krotkowo* | 29.90 | 759.4 | 30.36 | 771.2 | 63.9 | 17.7 | 25 | ENE | 13 | 6 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 30.17 | 766.3 | 30.44 | 773.2 | 61.2 | 16.2 | 33 | NNE | 4 | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 29.45 | 748.0 | 30.41 | 772.4 | 50.2 | 10.1 | 25 | N | 9 | 4 | ..... | ..... | 1c | ..... | ..... | ..... | ..... | ..... | Meteorological Obs |
| Nukuss | 29.69 | 754.0 | 29.91 | 759.8 | 64.8 | 18.2 | 86 | N | 16 | 7 | ..... | ..... | 4ks | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.39 | 721.0 | 30.06 | 763.4 | 66.2 | 19.0 | 37 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.48 | 748.8 | 30.02 | 762.5 | 35.6 | 2.0 | 82 | NW | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs |
| Yeniseisk | 29.73 | 755.2 | 30.08 | 763.9 | 23.9 | — 4.5 | 74 | NE | 11 | 5 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 30.04 | 763.0 | 30.18 | 766.6 | 52.0 | 11.1 | 59 | SE | 4 | 2 | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.93 | 709.5 | 30.14 | 765.5 | 16.3 | — 8.7 | 59 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.89 | 759.3 | 29.99 | 761.8 | 36.1 | 2.3 | 87 | NE | 2 | 1 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 31.6 | — 0.2 | 90 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 469 meters, or 1,541.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.65 | 753.2 | 29.76 | 755.9 | 60.1 | 15.6 | 71 | NE | 3.8 | 1.72 | ..... | 5ck | 2k | S | ..... | 0 | 0 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.59 | 751.6 | 29.65 | 753.0 | 74.5 | 23.6 | 52 | S | 6.2 | 2.78 | ..... | 3 | 4 | S | ..... | 0 | 0 | Cloudy | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.75 | 679.5 | ..... | ..... | 59.0 | 15.0 | 86 | SE | 6.3 | 2.83 | ..... | ..... | 8 | ..... | ..... | 0.079 | 2.0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.50 | 698.5 | 29.69 | 754.0 | 61.5 | 16.4 | 75 | SW | 14.2 | 6.33 | ..... | 2 | 4 | ..... | ..... | 0.130 | 3.3 | Cloudy | The Staff. |
| Murcia, Met. Obs'y | 29.60 | 751.8 | 29.74 | 755.5 | 77.0 | 25.0 | 46 | SSW | 2.2 | 1.00 | ..... | 3 | 4 | E | ..... | 0.016 | 0.4 | Cloudy | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.59 | 726.2 | 29.47 | 748.5 | 57.0 | 13.9 | 86 | SSE | 12.4 | 5.56 | ..... | ..... | 10 | ..... | ..... | 0.449 | 11.4 | Rainy | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.88 | 759.0 | 29.95 | 760.7 | 70.0 | 21.1 | 71 | ESE | 14.3 | 6.4 | ..... | 1c | 0 | WSW | ..... | 0 | 0 | Clear | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 29.70 | 754.4 | 29.80 | 756.9 | 62.8 | 17.1 | 90 | SW | 19.7 | 8.8 | ..... | 0 | 10 | ..... | S | 0.283 | 7.2 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W.I. | 29.94 | 760.4 | 30.03 | 762.7 | 80.2 | 26.8 | 91 | SE | 0 | 0 | ..... | 4km | 3km | E | E | 0 | 0 | Cloudy | Leonardo de Tejeda, Chief of Engineers. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATION. | Barometer. Corrected for instrum'tal error and temperature. Inches | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–6. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.46 | 773.6 | 30.50 | 774.6 | 41.0 | 5.0 | ..... | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.34 | 770.6 | 30.44 | 773.1 | 42.4 | 5.8 | 64 | NE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.39 | 771.8 | 30.44 | 773.1 | 45.1 | 7.3 | 79 | NNE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 30.11 | 764.8 | 30.29 | 769.3 | 36.3 | 2.4 | 93 | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.083 | 2.1 | ..... | |
| Wisby | 30.11 | 764.9 | 30.17 | 766.4 | 37.0 | 2.8 | 100 | NE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.008 | 0.2 | Light rain... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 30.25 | 768.4 | 30.33 | 770.3 | 35.6 | 2.0 | 89 | NNE | 18.3 | 8.2 | ..... | ..... | 10 | ..... | N | 0.017 | 0.44 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.50 | 723.8 | 29.93 | 760.2 | 51.4 | 10.8 | 53 | NNE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0 | 0 | Covered ..... | The Observatory. |
| Zurich | 28.33 | 719.5 | 29.97 | 761.3 | 51.8 | 11.0 | 48 | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear..... | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —0.4 mm.; Thermometer, —0.1 cent.; Relative Humidity, —5 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.92 | 760.0 | 67.5 | 19.7 | 38 | SW | 7 | 3.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stéfanidès. |
| Valona | ..... | ..... | 29.99 | 761.8 | 64.2 | 17.9 | ..... | W | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy ..... | A. Bertrand. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.95 | 760.7 | 30.07 | 763.6 | 64.0 | 18.8 | 68 | WNW | ..... | ..... | 2 | ..... | 8ks | ..... | SE | 0 | 0 | D. clouds..... | Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.83 | 757.7 | 29.90 | 759.4 | 34.3 | 1.3 | 83 | NE | 14 | 6.3 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Clearing..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.66 | 753.4 | 29.98 | 761.5 | 41 | 5.0 | ..... | Calm | 0 | 0 | ..... | ..... | 8s | ..... | NW | 0.13 | 3.3 | Cloudy..... | W. R. Bigg. |
| *Chatham, N B | 29.76 | 755.9 | 29.82 | 757.4 | 35 | 1.7 | 90 | NE | 17 | 7.6 | ..... | ..... | 10n | ..... | NE | 0.53 | 13.5 | Cloudy..... | G. A. Blair. |
| Charlottetown, P. E. Island | 29.64 | 752.8 | 29.68 | 753.9 | 36 | 2.2 | 83 | NE | 16 | 7.2 | ..... | ..... | 10s | ..... | NE | 0.045 | 1.15 | Cloudy..... | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.72 | 754.9 | 29.92 | 760.0 | 39 | 3.9 | 89 | NW | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0.065 | 1.65 | Overcast.... | James Smith, M. A |
| Dalhousie, N. B | 29.97 | 761.2 | 30.00 | 762.0 | 37 | 2.8 | 71 | E | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | Gloomy..... | H. A. Johnson. |
| Esquimault, B. C | 30.00 | 762 0 | 30.05 | 763.3 | 41.6 | 5.3 | 79 | W | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | W. H. Revis. |
| *Father Point, Quebec | 29.90 | 759.4 | 29.92 | 760.0 | 38 | 0.6 | 80 | NE | 24 | 10.7 | ..... | 5k | 8s | NE | NE | 0 | 0 | Cloudy..... | J. McWilliams. |
| Fredericton, N. B | 29.77 | 756.1 | 29.83 | 757.7 | 36.7 | 2.6 | 74 | N | 17 | 7.6 | ..... | ..... | 10s | ..... | ..... | Inap | Inap. | Cloudy..... | Prof. Harrison. |
| *Fort Garry Manitoba | 28.49 | 723.6 | 29.31 | 744.5 | 45 | 7.2 | 96 | S | 20 | 8.9 | ..... | 5k | 5n | S | S | 0.050 | 1.27 | Cloudy..... | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.87 | 733.3 | 30.00 | 762.0 | 38 | 3.3 | 81 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | James Grant. |
| *Halifax, N. S | 29.41 | 747.0 | 29.55 | 750.6 | 39 | 3.9 | 89 | NE | 9 | 4.0 | ..... | ..... | 10n | ..... | NE | 0.125 | 3.18 | Cloudy..... | F. Allison, M. A. |
| Hamilton, Ontario | 29.66 | 753.4 | 30.04 | 763.0 | 39.2 | 4.0 | 72 | W | ..... | ..... | 1 | 0 | ..... | ..... | ..... | 0 | 0 | Clear..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.61 | 752.1 | 29.84 | 752.8 | 37 | 2.8 | 81 | E | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.45 | 11.4 | Foggy..... | E. Weedon. |
| *Kingston, Ontario | 29.63 | 752.6 | 29.97 | 761.2 | 41 | 5.0 | 75 | N | 2 | 0.9 | ..... | 10ck | 0 | Calm | ..... | 0 | 0 | Fair..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.59 | 751.6 | 29.63 | 752.6 | 33.2 | 0.7 | ..... | NE | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0.14 | 3.6 | Overcast..... | C. H. Rigby. |
| *Montreal, Quebec | 29.70 | 754.4 | 29.90 | 759.4 | 42 | 5.6 | 85 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | ..... | 0.10 | 2.5 | Cloudy..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.90 | 744.2 | 30.01 | 762.2 | 35 | 1.7 | 90 | S | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Rev. R. Mosley. |
| Peterboro, Ontario | 29.23 | 742.4 | 29.99 | 761.7 | 40.7 | 4.8 | 73 | NW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.31 | 744.5 | 30.02 | 762.5 | 38 | 3.3 | 81 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | H. Morgan. |
| Port Hastings, N. S | 29.57 | 751.1 | 29.62 | 752.3 | 40.6 | 4.8 | ..... | NE | 7 | 3.1 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine..... | Peter Grant. |
| Port Stanley, Ontario | 29.35 | 745.5 | 30.02 | 762.5 | 36 | 2.2 | 87 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | M. Payne. |
| *Quebec, Quebec | 29.61 | 752.1 | 29.94 | 760.5 | 35 | 1.7 | 80 | N | ..... | ..... | 5 | ..... | 10n | ..... | N | 0.05 | 1.3 | Cloudy..... | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.54 | 750.3 | 30.01 | 762.2 | 35 | 1.7 | 85 | NW | 5 | 2.2 | ..... | ..... | 8s | ..... | NW | 0 | 0 | Cloudy .... | W. H. McIntyre. |
| St. Andrews, N. B | 29.68 | 753.9 | 29.73 | 755.1 | 37 | 2.8 | 75 | NE | 12 | 5.4 | ..... | ..... | 10s | ..... | NE | 0.05 | 1.3 | Cloudy..... | Dr. Gove. |
| St. John, N. B | 29.56 | 750.8 | 29.73 | 755.1 | 36 | 2.2 | 90 | NE | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Light mist... | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.27 | 743.4 | 30.00 | 762.0 | 36 | 2.2 | 71 | SW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | K. Stewart. |
| Stayner, Ontario | 29.21 | 741.9 | 30.01 | 762 2 | 39 | 3.9 | 73 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | R. J. Cole. |
| Stratford, Ontario | 28.70 | 729.0 | 30.01 | 762.2 | 35.2 | 1.8 | 81 | NW | 2 | 0.9 | ..... | 0 | 2s | ..... | ..... | 0 | 0 | Misty..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.58 | 751.3 | 29.61 | 752.1 | 35 | 1.7 | 93 | N | 14 | 6.3 | ..... | ..... | 10n | ..... | NE | 0.32 | 8.1 | Cloudy..... | T. C. Hill. |
| *Toronto, Ontario | 29.64 | 752.8 | 30.03 | 762.7 | 38 | 3.3 | 79 | NW | 2 | 0.9 | ..... | ..... | Haze | ..... | Calm | 0 | 0 | Hazy..... | Magnetic Observatory. |
| Windsor, N. S | 29.51 | 749.5 | 29.61 | 752.1 | 37.6 | 3.1 | 95 | N | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | 0.26 | 6.3 | Raining..... | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 35.0 | 1.7 | 100 | NE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.42 | 10.7 | Cloudy..... | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'per 0–10 | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.63 | 752.6 | 29.86 | 758.4 | 46 | 7.8 | 69 | NW | 14 | 6.3 | ..... | ..... | 10s | ..... | NW | 0.08 | 2.0 | Cloudy | |
| Alpena, Michigan | 29.29 | 744.0 | 29.95 | 760.7 | 38 | 3.3 | 63 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Atlantic City, New Jersey | 29.92 | 760.0 | 29.94 | 760.5 | 47 | 8.3 | 69 | W | 11 | 4.9 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Augusta, Georgia | 29.76 | 755.9 | 29.94 | 760.5 | 58 | 14.4 | 64 | E | 6 | 2.7 | ..... | 5c | 5s;sm' | NW | Calm | 0 | 0 | Cloudy | |
| Baltimore, Maryland | 29.94 | 760.5 | 29.99 | 761.7 | 49 | 9.4 | 51 | NW | 8 | 3.6 | ..... | 5cs | 5ks | W | NW | 0 | 0 | Cloudy | |
| Barnegat, New Jersey | 29.88 | 758.9 | 29.91 | 759.7 | 49 | 9.4 | 64 | NW | 14 | 6.3 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Bismarck, Dakota | 27.45 | 697.2 | 29.30 | 744.2 | 46 | 7.8 | 85 | S | 3 | 1.3 | ..... | Sm'e | Sm'e | ..... | ..... | 0 | 0 | Dense smoke | |
| Boise City, Idaho | 27.01 | 686.0 | 29.89 | 759.2 | 40 | 4.4 | 48 | NW | 12 | 5.4 | ..... | 0 | 5s | ..... | W | Inap. | Inap. | Fair | |
| Boston, Massachusetts | 29.61 | 752.1 | 29.77 | 756.1 | 45 | 7.2 | 65 | NW | 12 | 5.4 | ..... | 5c;cs | 0 | N | ..... | 0.07 | 1.8 | Fair | |
| Brackettville, Texas | 28.30 | 718.8 | 29.29 | 744.0 | 62 | 16.7 | 72 | Calm | 0 | 0 | ..... | 2c | 2ks | N | Calm | 0 03 | 0.8 | Fair | |
| Breckenridge, Minnesota | 28.44 | 722.4 | 29.41 | 747.0 | 39 | 3.9 | 91 | SE | 30 | 13.4 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Brownsville, Texas | 29.44 | 747.8 | 29.59 | 749.3 | 72 | 22.2 | 90 | S | 14 | 6.3 | ..... | ..... | 10s | ..... | Calm | 0.56 | 14.2 | Cloudy | |
| Buffalo, New York | 29.29 | 744.0 | 30.00 | 762.0 | 40 | 4.4 | 91 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 65 | 18.3 | 58 | S | ..... | ..... | 1 | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Burlington, Vermont | 29.64 | 752.8 | 29.90 | 759.4 | 41 | 5.0 | 83 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | N | 0.04 | 1.0 | Cloudy | |
| Cairo, Illinois | 29.34 | 745.2 | 29.72 | 754.9 | 63 | 17.2 | 62 | SE | 11 | 4.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Camp Grant, Arizona | 24.84 | 631.0 | 29.64 | 752.8 | 49 | 9.4 | 45 | SE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | 26.27 | 667.2 | 29.96 | 761.0 | 54 | 12.2 | 74 | E | ..... | ..... | 1 | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Campo, California | 27.16 | 689.8 | 29.73 | 755.1 | 50 | 10.0 | 86 | SW | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Cape Hatteras, N. Carolina | 30.02 | 762.5 | 30.03 | 762.7 | 55 | 12.8 | 62 | N | 9 | 4.0 | ..... | 5c | 2s | N | Calm | 0 | 0 | Fair | |
| Cape Henry, Virginia | 29.95 | 760.7 | 29.98 | 761.5 | 54 | 12.2 | 55 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 30.00 | 762.0 | 30.01 | 762.2 | 56 | 13.3 | 69 | NE | 11 | 4.9 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Cape May, New Jersey | 29.93 | 760.2 | 29.96 | 761.0 | 47 | 8.3 | 77 | NW | 25 | 11.2 | ..... | 2ck | 0 | W | ..... | 0 | 0 | Fair | |
| Charleston, South Carolina | 29.97 | 761.2 | 30.04 | 763.0 | 63 | 17.2 | 89 | S | 2 | 0.9 | ..... | 10cs | Haze | SW | Calm | 0 | 0 | Cloudy | |
| Cheyenne, Wyoming | 23.47 | 596.1 | 29.41 | 747.0 | 45 | 7.2 | 39 | W | 12 | 5.4 | ..... | 0 | 8s | ..... | W | 0 | 0 | Cloudy | |
| Chicago, Illinois | 29.04 | 737.6 | 29.72 | 754.9 | 47 | 8.3 | 70 | E | 12 | 5.4 | ..... | 5cs | 0 | Calm | ..... | 0.10 | 2.5 | Fair | |
| Cincinnati Ohio | 29.18 | 741.2 | 29.82 | 757.4 | 53 | 11.7 | 42 | SE | 4 | 1.8 | ..... | 9cs;k | 0 | W | ..... | 0 | 0 | Cloudy | |
| Cleveland, Ohio | 29.26 | 743.2 | 29.99 | 761.7 | 44 | 6.7 | 52 | SE | 5 | 2.2 | ..... | 2ck | 5ks | W | W | 0 | 0 | Fair | |
| Concho, Texas | 27.48 | 698.0 | 29.08 | 738.6 | 52 | 11.1 | 93 | SW | ..... | ..... | 1 | 4k | 0 | SW | ..... | 0.61 | 15.7 | Fair | |
| Corsicana, Texas | 28.96 | 735.6 | 29.42 | 747.5 | 55 | 12.8 | 93 | W | 3 | 1.3 | ..... | 2cs | 8s | Calm | S | 0.95 | 24.1 | Cloudy | |
| Davenport, Iowa | 28.98 | 736.1 | 29.60 | 751.8 | 46 | 7.8 | 69 | SE | 9 | 4.0 | ..... | ..... | 10s | ..... | SE | 0.23 | 5.8 | Cloudy | |
| Deadwood, Dakota | 24.76 | 628.9 | ..... | ..... | 42 | 5.6 | 74 | NW | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Denison, Texas | 28.63 | 727.2 | 29.39 | 746.5 | 57 | 13.9 | 87 | S | 4 | 1.8 | ..... | 0 | 1s | ..... | S | 0.52 | 13.2 | Clear | |
| Denver, Colorado | 24.22 | 615.2 | 29.44 | 747.8 | 45 | 7.2 | 46 | SE | 4 | 1.8 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Detroit, Michigan | 29.24 | 742.7 | 29.91 | 759.7 | 46 | 7.8 | 54 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | SW | Inap. | Inap. | Cloudy | |
| Dodge City, Kansas | 26.81 | 681.0 | 29.01 | 736.8 | 48 | 8.9 | 93 | N | 4 | 1.8 | ..... | ..... | 10n | ..... | N | 0.09 | 2.3 | Light rain | |
| Dubuque, Iowa | 28.88 | 733.5 | 29.56 | 750.8 | 45 | 7.2 | 76 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.69 | 17.5 | Cloudy | |
| Duluth, Minnesota | 28.96 | 735.6 | 29.63 | 752.6 | 41 | 5.0 | 82 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | NE | Inap. | Inap. | Cloudy | |
| Eagle Pass, Texas | 28.61 | 726.7 | 29.28 | 743.7 | 64 | 17.8 | 58 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.32 | 8.1 | Clear | |
| Eastport, Maine | 29.66 | 753.4 | 29.73 | 755.1 | 38 | 3.3 | 81 | NE | 18 | 8.0 | ..... | ..... | 10s | ..... | NE | 0.24 | 6.1 | Cloudy | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 63 | 17.2 | 55 | W | ..... | ..... | 2 | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Escanaba, Michigan | 29.20 | 741.7 | 29.86 | 758.4 | 39 | 3.9 | 73 | E | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Florence, Arizona | 28.14 | 714.7 | 29.74 | 755.4 | 65 | 18.3 | 49 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Fort Bayard, New Mexico | 23.75 | 603.2 | 29.75 | 755.6 | 45 | 7.2 | 84 | NW | 4 | 1.8 | ..... | 0 | 8s | ..... | W | 0 | 0 | Fair | |
| Fort Craig, New Mexico | 24.04 | 636.0 | ..... | ..... | 43 | 6.1 | 92 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Fort Davis, Texas | 24.74 | 728.4 | 29.70 | 754.4 | 57 | 13.9 | 57 | W | 15 | 6.7 | ..... | 0 | 0 | ..... | ..... | 0.12 | 3.3 | Clear | |
| Fort Gibson, Indian Ter | 28.84 | 732.5 | 29.35 | 745.5 | 61 | 16.1 | 94 | SE | 10 | 4.5 | ..... | 5k | 0 | W | ..... | Blank | Blank | Fair | |
| Fort Griffin, Texas | 28.11 | 714.0 | 29.32 | 744.7 | 53 | 11.7 | 86 | W | 2 | 0.9 | ..... | 2c | 8s | S | SW | 0.24 | 6.1 | Cloudy | |
| Fort St. Michael, Alaska | 29.74 | 755.4 | 29.78 | 756.4 | 11 | —11.7 | 100 | E | 4 | 1.8 | ..... | 2k | 5s | SE | SE | 1.15 | 29.2 | Cloudy | |
| Fort Sill, Indian Territory | 28.17 | 715.5 | 29.23 | 742.4 | 55 | 12.8 | 87 | SE | 7 | 3.1 | ..... | ..... | 10s | ..... | SW | 0.02 | 0.5 | Cloudy | |
| Galveston, Texas | 29.41 | 747.0 | 29.45 | 748.0 | 66 | 18.9 | 94 | S | 3 | 1.3 | ..... | ..... | 10n | ..... | Calm | 0.10 | 2.5 | Foggy | |
| Grand Haven, Michigan | 29.19 | 741.4 | 29.83 | 757.7 | 46 | 7.8 | 84 | SE | 12 | 5.4 | ..... | ..... | 10ks | ..... | Calm | 3.42 | 86.9 | Heavy rain | |
| Indianapolis, Indiana | 29.09 | 738.6 | 29.76 | 755.9 | 52 | 11.1 | 47 | SE | 9 | 4.0 | ..... | 9cs | Sm'e | Calm | SE | 0 | 0 | Cloudy | |
| Indianola, Texas | 29.12 | 747.3 | 29.45 | 748.0 | 70 | 21.1 | 95 | S | 18 | 8.0 | ..... | ..... | 10s | ..... | SW | Inap. | Inap. | Fair | |
| Jacksboro, Texas | 28.26 | 717.8 | 29.34 | 745.2 | 55 | 12.8 | 87 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | SE | 2.77 | 70.4 | Cloudy | |
| Jacksonville, Florida | 29.95 | 760.7 | 29.98 | 761.5 | 67 | 19.4 | 79 | E | 1 | 0.4 | ..... | 5k | 0 | Calm | ..... | 0.23 | 5.8 | Cloudy | |
| Keokuk, Iowa | 28.93 | 734.8 | 29.52 | 749.8 | 49 | 9.4 | 71 | SE | 6 | 2.7 | ..... | 0 | 4s | ..... | ..... | 0 | 0 | Fair | |
| Key West, Florida | 29.91 | 759.7 | 29.95 | 760.7 | 74 | 23.3 | 72 | SE | 11 | 4.9 | ..... | 5c | 0 | W | ..... | 0.15 | 3.8 | Fair | |
| Kittyhawk, North Carolina | 30.01 | 762.2 | 30.04 | 762.7 | 52 | 11.1 | 66 | NE | 7 | 3.1 | ..... | 5cs | 0 | W | ..... | 0 | 0 | Fair | |
| Knoxville, Tennessee | 28.92 | 734.6 | 29.92 | 760.0 | 51 | 10.6 | 46 | E | 6 | 2.7 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Fair | |
| La Crosse, Wisconsin | 28.88 | 733.5 | 29.69 | 751.8 | 47 | 8.3 | 70 | SE | 7 | 3.1 | ..... | 1k | 0 | S | ..... | Inap. | Inap. | Cloudy | |
| La Mesilla, New Mexico | 25.67 | 652.0 | 29.82 | 757.4 | 47 | 8.3 | 85 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.07 | 1.8 | Clear | |
| Laredo, Texas | 29.03 | 737.3 | 29.35 | 745.5 | 66 | 18.9 | 89 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.15 | 3.8 | Clear | |
| Leavenworth, Kansas | 28.57 | 725.7 | 29.37 | 746.0 | 59 | 15.0 | 91 | S | 6 | 2.7 | ..... | ..... | 10ks | ..... | S | 0.64 | 16.3 | Clear | |
| Los Angeles, California | 29.43 | 747.5 | 29.76 | 755.9 | 58 | 14.4 | 84 | E | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Threatening | |
| Louisville, Kentucky | 29.19 | 741.4 | 29.74 | 755.4 | 50 | 10.0 | 52 | SE | 14 | 6.3 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Lynchburg, Virginia | 29.54 | 745.2 | 30.02 | 762.5 | 50 | 10.0 | 52 | S | 1 | 0.4 | ..... | 0 | 5ks | ..... | SE | Inap. | Inap. | Threatening | |
| Marquette, Michigan | 29.12 | 739.6 | 29.83 | 757.7 | 41 | 5.0 | 65 | SE | 4 | 1.8 | ..... | 5c | 0 | SE | ..... | 0 | 0 | Fair | |
| Mason, Texas | 27.79 | 705.8 | 29.45 | 748.0 | 58 | 14.4 | 82 | SW | 3 | 1.3 | ..... | 0 | 8s | ..... | W | 0.98 | 24.9 | Cloudy | |
| Memphis, Tennessee | 29.36 | 745.7 | 29.67 | 753.6 | 63 | 17.2 | 78 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | SE | 0.03 | 0.8 | Cloudy | |
| Milwaukee, Wisconsin | 29.04 | 737.6 | 29.76 | 755.9 | 44 | 6.7 | 84 | E | 12 | 5.4 | ..... | 5c | Haze | ..... | ..... | 0.02 | 0.5 | Fair | |
| Mobile, Alabama | 29.71 | 754.6 | 29.75 | 755.6 | 68 | 20.0 | 93 | SE | 15 | 6.7 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Threatening | |
| Montgomery, Alabama | 29.61 | 752.1 | 29.84 | 757.9 | 62.5 | 16.9 | 85 | SE | 9 | 4.0 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Morgantown, West Virginia | 28.94 | 735.1 | 30.01 | 762.2 | 40 | 4.4 | 65 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| Mt. Washington, N. H. | 23.47 | 596.1 | 29.83 | 757.7 | 23 | — 5.0 | 73 | NE | 30 | 13.4 | ..... | 5cs | 8s | W | NE | 0.21 | 7.9 | Cloudy | |
| Nashville, Tennessee | 29.22 | 742.2 | 29.74 | 755.4 | 60 | 15.6 | 55 | NE | 5 | 2.2 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| New Haven, Connecticut | 29.74 | 755.4 | 29.85 | 758.2 | 49 | 9.4 | 64 | N | 12 | 5.4 | ..... | 5k | 0 | N | ..... | Inap. | Inap. | Fair | |
| New London, Connecticut | 29.76 | 755.9 | 29.81 | 757.2 | 50 | 10.0 | 65 | N | 11 | 4.9 | ..... | 1k | 0 | N | ..... | 0 | 0 | Clear | |
| New Orleans, Louisiana | 29.54 | 750.3 | 29.60 | 751.8 | 70 | 21.1 | 80 | SE | 20 | 8.9 | ..... | ..... | 10ks | ..... | SE | Inap. | Inap. | Threatening | |
| Newport, Rhode Island | 29.73 | 755.1 | 29.78 | 756.4 | 45 | 7.2 | 68 | NW | 8 | 3.6 | ..... | 1k | 0 | NW | ..... | 0.01 | 0.3 | Clear | |
| New York, New York | 29.72 | 754.9 | 29.90 | 759.4 | 48 | 8.9 | 62 | W | 8 | 3.6 | ..... | 10c | Haze | Calm | Calm | 0 | 0 | Cloudy | |
| Norfolk, Virginia | 29.97 | 761.2 | 30.02 | 762.5 | 52 | 11.1 | 54 | N | 5 | 2.2 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| North Platte, Nebraska | 26.54 | 674.1 | 29.04 | 737.6 | 39 | 3.9 | 87 | SE | 6 | 2.7 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 30.03 | 762.7 | 30.07 | 763.8 | 44 | 6.7 | 76 | NW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0.07 | 1.8 | Clear | |
| Omaha, Nebraska | 28.30 | 718.8 | 29.34 | 745.2 | 43 | 6.1 | 92 | N | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Oswego, New York | 29.64 | 752.8 | 29.97 | 761.2 | 43 | 6.1 | 67 | N | 4 | 1.8 | ..... | 8c | 0 | NW | ..... | Inap. | Inap. | Fair | |
| Pembina, Dakota | 28.54 | 724.9 | 29.35 | 745.5 | 44.5 | 6.9 | 80 | SE | 29 | 8.9 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Philadelphia, Pennsylvania | 29.92 | 760.0 | 29.97 | 761.2 | 47 | 8.3 | 55 | NW | 11 | 4.9 | ..... | 10c;cs | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Phœnix, Arizona | 28.54 | 724.9 | 30.31 | 769.9 | 54 | 12.2 | 74 | S | ..... | ..... | 1 | c | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.38 | 441.4 | 29.55 | 751.6 | 14 | —10.0 | 46 | N | 36 | 16.1 | ..... | 5cs | 0 | NW | ..... | Inap. | Inap. | Fair | |
| Pioche, Nevada | 23.78 | 604.0 | 29.55 | 750.6 | 45 | 7.2 | 53 | W | 4 | 1.8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.18 | 741.2 | 30.00 | 762.0 | 42 | 5.6 | 83 | N | 1 | 0.4 | ..... | ..... | 10s;fg | ..... | Calm | 0 | 0 | Cloudy | |
| Port Huron, Michigan | 29.27 | 743.4 | 29.95 | 760.7 | 43 | 6.1 | 67 | SE | 2 | 0.9 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| Portland, Maine | 29.70 | 754.4 | 29.75 | 755.6 | 45 | 7.2 | 68 | N | 14 | 6.3 | ..... | 10k | Haze | N | ..... | 0.03 | 0.8 | Cloudy | |
| Portland, Oregon | 30.12 | 765.0 | 30.23 | 767.8 | 42 | 5.6 | 91 | S | 4 | 1.8 | ..... | ..... | 8k;s | ..... | NW | 0.05 | 1.3 | Cloudy | |
| Prescott, Arizona | 24.48 | 621.8 | 29.84 | 757.9 | 38 | 3.3 | 72 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | |
| Punta Rassa, Florida | 29.95 | 760.7 | 29.97 | 761.2 | 69 | 20.6 | 85 | SE | 16 | 7.2 | ..... | 5ck | 0 | S | ..... | 0 | 0 | Fair | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Red Bluff, California | 29.47 | 748.5 | 29.82 | 757.4 | 63 | 17.2 | 42 | NW | 14 | 6.3 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear. | |
| Rochester, New York | 29.35 | 745.5 | 29.97 | 761.2 | 44 | 6.7 | 68 | NW | 5 | 2.2 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Roseburg, Oregon | 29.64 | 752.8 | 30.22 | 767.6 | 45.5 | 7.5 | 76 | N | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sacramento, California | 29.63 | 752.6 | 29.71 | 754.6 | 66 | 18.9 | 54 | NW | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.09 | 738.9 | 29.64 | 752.8 | 55 | 12 8 | 74 | SE | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.08 | 2.0 | Light rain | |
| St. Marks, Florida | 29.91 | 759.7 | 29.92 | 760.0 | 64 | 17.8 | 94 | S | 8 | 3.6 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| St. Paul, Minnesota | 28.69 | 728.7 | 29.50 | 749.3 | 43 | 6.1 | 83 | SE | 16 | 7.2 | ..... | 8k | 0 | S | ..... | 0 | 0 | Cloudy | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.29 | 642.4 | 29.62 | 752.3 | 50 | 10.0 | 58 | E | 4 | 1.8 | ..... | 10k | 0 | W | ..... | 0 | 0 | Cloudy | |
| San Antonio, Texas | 28.72 | 729.5 | 29.27 | 743.4 | 64 | 17.8 | 94 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.60 | 15.2 | Clear | |
| San Diego, California | 29.76 | 755.9 | 29.83 | 757.7 | 59 | 15.0 | 82 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 29.29 | 744.0 | 29.96 | 761.0 | 48 | 8.9 | 63 | SE | 11 | 4.9 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair | |
| Sandy Hook, New Jersey | 29.87 | 758.7 | 29.90 | 759.4 | 53 | 11.7 | 67 | W | 12 | 5.4 | ..... | 10ck;c | 0 | NW;W | ..... | 0 | 0 | Cloudy | |
| San Francisco, California | 29.70 | 754.4 | 29.76 | 755.9 | 57 | 13.9 | 81 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Santa Fé, New Mexico | 22.88 | 581.1 | 29.42 | 747.3 | 34 | 1.1 | 79 | Calm | 0 | 0 | ..... | 0 | 2s | ..... | Calm | 0.09 | 2.3 | Fair | |
| Savannah, Georgia | 29.83 | 757.7 | 29.97 | 761.2 | 64 | 17.8 | 89 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Shreveport, Louisiana | 29.27 | 743.4 | 29.48 | 748.8 | 61 | 16.1 | 94 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 1.81 | 46.0 | Cloudy | |
| Smithville, North Carolina | 30.00 | 762.0 | 30.04 | 763.0 | 55 | 12.8 | 87 | N | 2 | 0.9 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Springfield, Massachusetts | 29.65 | 753.1 | 29.78 | 756.4 | 50 | 10.0 | 58 | N | 10 | 4.5 | ..... | 2k | 0 | N | ..... | 0 | 0 | Fair | |
| Stockton, Texas | 26.44 | 671.6 | 29.44 | 747.8 | 52 | 11.1 | 93 | SE | 24 | 10.7 | ..... | ..... | 10n | ..... | SE | 0.15 | 3.8 | Light rain | |
| Thatcher's Island, Mass | 29.69 | 754.1 | 29.74 | 755.4 | 42 | 5.6 | 74 | N | 16 | 7.2 | ..... | 8c;k | 0 | NW;N | ..... | 0 | 0 | Fair | |
| Toledo, Ohio | 29.22 | 742.2 | 29.89 | 759.2 | 51 | 10.6 | 53 | E | 4 | 1.8 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 53 | 11.7 | 79 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Fair | |
| Tybee Island, Georgia | 29.96 | 761.0 | 29.99 | 761.7 | 64 | 17.8 | 88 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.68 | 753.9 | ..... | ..... | 43 | 6.1 | 59 | W | 20 | 8.9 | ..... | 0 | 0 | ..... | Calm | 0 | 0 | Cloudy | |
| Vicksburg, Mississippi | 29.41 | 747.0 | 29.66 | 753.4 | 64 | 17.8 | 100 | E | 7 | 3.1 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Clear | |
| Virginia City, Montana | 23.84 | 605.5 | 29.32 | 744.7 | 32 | 0.0 | 79 | W | 16 | 7.2 | ..... | 0 | 5s | ..... | E | 0.05 | 1.3 | Light rain | |
| Visalia, California | 29.38 | 746.2 | 29.75 | 755.6 | 57 | 13.9 | 94 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | Calm | 0.04 | 1.0 | Fair | |
| Washington, D. C. | 29.91 | 759.7 | 30.02 | 762.5 | 48.5 | 9.2 | 47 | NW | 8 | 3.6 | ..... | 5c | 2s | NW | NW | 0 | 0 | Clear | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 49 | 9.4 | 64 | E | ..... | ..... | 1 | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 29.96 | 761.0 | 30.04 | 763.0 | 57 | 13.9 | 46 | NE | 4 | 1.8 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Fair | |
| Winnemucca, Nevada | 25.48 | 647.2 | 29.84 | 757.9 | 48 | 8.9 | 43 | N | 6 | 2.7 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Wood's Holl, Mass | 29.69 | 754.1 | 29.75 | 755.6 | 49 | 9.4 | 57 | N | 12 | 5.4 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Fair | |
| Yankton, Dakota | 28.20 | 716.3 | 29.47 | 748.5 | 38 | 3.3 | 90 | S | 5 | 2.2 | ..... | ..... | Fog | ..... | Calm | 0.02 | 0.5 | Clear | |
| Yuma, Arizona | 29.19 | 749.0 | 29.65 | 753.1 | 63 | 17.2 | 72 | S | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Foggy | |
| Sub-Series. | | | | | | | | | | | | | | | | 0 | 0 | Clear | |
| York Factory, B. A. | 30.24 | 768.1 | 30.29 | 769.4 | 12.0 | —11.1 | 90 | N | 8 | 3.6 | ..... | 3c | 0 | NE | ..... | 0 | 0 | Fair | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 29.90 | 759.4 | 29.92 | 760.0 | 70 | 21.1 | 71 | SE | 8.4 | 3.8 | ..... | 4c | 0 | W | ..... | 0 | 0 | Fair | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.10 | 764.5 | 30.11 | 764.8 | 79 | 26.1 | 86 | Calm | 0 | 0 | ..... | 8c | 8n | Calm | SE | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.85 | 758.2 | 29.93 | 760.2 | 80 | 26.7 | ..... | NE | 10 | 4.5 | ..... | ..... | ..... | ..... | ..... | 0.65 | 16.5 | Cloudy | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | 30.00 | 762.0 | 30.00 | 762.0 | 81 | 27.2 | 87 | NE | ..... | ..... | 3 | 5k | 0 | E | ..... | 0 | 0 | Fair | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.19 | 639.8 | ..... | ..... | 70.5 | 21.4 | 81 | Calm | ..... | ..... | 0 | 5cs;k | 2ks | ..... | ..... | 0 | 0 | ..... | Thomas Herran |

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Fismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,488 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,112 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,097.9 ft., or 913.8 m.; Medellin, 4,870 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,170.7 ft., or 4,318.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,550 (?) ft., or 1,760.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er —10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall, or melted snow in the past 24 hours. Inches. | Rain-fall, or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.74 | 755.4 | 59 | 15.0 | 57 | 13.9 | 87 | SW | 8 | 3.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Sultry..... | |
| Navy Yard, Pensacola, Fla. | 29.93 | 760.2 | 67 | 19.4 | 67 | 19.4 | 95 | E | 25 | 11.2 | ..... | ..... | 2 | ..... | SW | 1.14 | 29.0 | ..... | ..... | Cloudy..... | |
| Navy Yard, Portsmouth, N.H | 29.80 | 756.9 | 66 | 18.9 | 43 | 6.1 | 67 | WNW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear ..... | |
| Naval Hospital, Yokohama, Japan | 30.35* | 770.9* | 55 | 12.8 | 46 | 7.8 | 77 | ENE | ..... | ..... | 3 | ..... | 10ks | ..... | SSW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Adams, Panama | 29.91 | 759.7 | 82 | 27.8 | 82 | 27.8 | 83 | NW | ..... | ..... | 2-4 | ..... | 8 | ..... | ..... | ..... | ..... | Smooth | ..... | Misty..... | |
| Alliance, Naples, Italy | 29.86‡ | 758.4‡ | ..... | ..... | 68 | 20.0 | 51 | NE | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | None | ..... | Cloudy..... | |
| Ashuelot, Shanghai, China | 30.08 | 764.0 | 56 | 13.3 | 55 | 12.8 | 100 | WNW | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Drizzling.... | |
| Canonicus, New Orleans, La. | 29.62 | 752.3 | 51 | 10.6 | 70 | 21.1 | 83 | SE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Colorado, New York, N. Y. | 29.87‡ | 758.7‡ | ..... | ..... | 50 | 10.0 | 58 | WNW | 11 | 4.9 | ..... | ..... | 8 | ..... | NW | 0 | 0 | ..... | ..... | Hazy..... | |
| Constellation, N. 42° 15′ W. 53° 59′ | 29.34‡ | 745.2‡ | ..... | ..... | 52 | 11.1 | 86 | NE | ..... | ..... | 2 | ..... | 5 | ..... | SW | ..... | ..... | Long | SW | Fair ..... | |
| Constitution, Havre, France | 29.74‡ | 755.4‡ | ..... | ..... | 60 | 15.6 | 71 | E | ..... | ..... | 2 | ..... | 2 | ..... | E | ..... | ..... | ..... | ..... | Clear..... | |
| Despatch, Constantinople, Turkey. | 29.90‡ | 759.4‡ | ..... | ..... | 64 | 17.8 | 62 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Clear. ..... | |
| Enterprise, N. 36° 0′, W. 72° 24′ | 30.02† | 762.5† | ..... | ..... | 57 | 13.9 | 100 | WNW | ..... | ..... | 6 | ..... | 5 | ..... | NW | ..... | ..... | Rough | NW | Fair..... | |
| Franklin, Norfolk, Va. | 30.09 | 764.3 | 68 | 20.0 | 54 | 12.2 | 44 | NW | 42? | 18.8? | ..... | ..... | 2 | ..... | NW | 0 | 0 | ..... | ..... | Blue sky..... | |
| Gettysburg Valetta, Malta | 29.85‡ | 758.2‡ | ..... | ..... | 63 | 17.2 | ?? | E | ..... | ..... | 5 | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Cloudy..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.04 | 763.0 | 75 | 23.9 | 75 | 23.9 | 72 | NE | ..... | ..... | 3 | ..... | 8 | ..... | NE | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Hartford, Montevideo, Uraguay | 29.79 | 756.7 | 66 | 18.9 | 62 | 16.7 | 77 | SSW | 18 | 8.0 | ..... | ..... | 8 | ..... | SSW | ..... | ..... | Mod'ate | SSW | Cloudy..... | |
| Marion, Off Pt. Surbi, Greece | 29.99 | 759.4 | 65 | 18.3 | 64 | 17.8 | 62 | SE | ..... | ..... | 2 | ..... | 10 | ..... | Calm | 0 | 0 | Smooth | ..... | Cloudy..... | |
| Michigan, Erie, Pa. | 29.48 | 748.8 | 67 | 19.4 | 43 | 6.1 | 68 | WSW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Monocacy. Shanghai, China | 29.86‡ | 758.4‡ | ..... | ..... | 57 | 13.9 | 94 | NNW | ..... | ..... | 1 | ..... | 10 | ..... | E | ..... | ..... | ..... | ..... | Overcast..... | |
| New Hampshire, Port Royal, S. C. | 30.20 | 767.1 | 67 | 19.4 | 65 | 18.3 | 89 | SSE | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Overcast .... | |
| Omaha, N. 18° 57′ W. 65° 04′ | 30.15* | 765.8* | 83 | 28.3 | 82 | 27.8 | 75 | E | 2 | 0.9 | ..... | ..... | 4 | ..... | E | 0 | 0 | Smooth | ..... | Bright..... | |
| Onward, Callao, Peru | 30.02† | 762.5† | ..... | ..... | 70 | 21.1 | 90 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty.... ..... | |
| Ossipee, Pensacola, Fla. | 29.84‡ | 757.9‡ | ..... | ..... | 68 | 20.0 | 100 | SE | ..... | ..... | 6 | ..... | 2 | ..... | S | ..... | ..... | ..... | ..... | Overcast..... | |
| Palos, Shanghai, China | 30.12* | 765.0* | 60 | 15.6 | 55 | 12.8 | 93 | WNW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | |
| Pensacola, Honolulu, H. I. | 30.18 | 766.6 | 74 | 23.3 | 67 | 19.4 | 66 | NE | 1 | 0.4 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Plymouth. Norfolk, Va. | 30.03‡ | 762.7‡ | ..... | ..... | 56 | 13.3 | 57 | NNW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Powhatan, Norfolk, Va. | 30.02† | 762.5‡ | ..... | ..... | 55 | 12.8 | 87 | NW | 4.8 | 2.1 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear. ..... | |
| Ranger. Amoy, China | 30.17* | 766.3* | ..... | ..... | 72 | 22.2 | 85 | Calm | ..... | ..... | 0 | ..... | 4 | ..... | Calm | ..... | ..... | Smooth | ..... | D. clouds..... | |
| Rio Bravo. Brownsville, Texas | 29.48 | 748.8 | 73 | 22.8 | 71 | 21.7 | 100 | SW | ..... | ..... | 2-3 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Cloudy..... | |
| Santee, Annapolis, Md | 30.07‡ | 763.8‡ | ..... | ..... | 50 | 10.0 | 52 | NW | ..... | ..... | 6 | ..... | 5 | ..... | NW | 0 | 0 | ..... | ..... | Fair..... | |
| Saratoga, Washington, D. C. | 29.64* | 752.8* | ..... | ..... | 51 | 10.6 | 86 | NW | ..... | ..... | 4 | ..... | 2 | ..... | Calm | 0 | 0 | ..... | ..... | Clear..... | |
| St. Louis, League Island, Pa | 29.90 | 759.4 | 68 | 20.0 | 46 | 7.8 | 77 | W | 8 | 3.6 | ..... | ..... | 8 | ..... | NW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Supply, Havre, France | 29.86 | 758.4 | 56 | 13.3 | 58 | 14.4 | 48 | SE | ..... | ..... | 5 | ..... | 8? | ..... | SE | ..... | ..... | ..... | ..... | Clear?..... | |
| Swatara, Aspinwall | 29.95 | 760.7 | 84 | 28.9 | 83 | 28.3 | 83 | N | ..... | ..... | 3 | ..... | 8 | ..... | N | ..... | ..... | ..... | ..... | Cloudy..... | |
| Tennessee, N. 10° 44′ E. 59° 11′ | 29.87* | 758.7* | 86 | 30.0 | 85 | 29.4 | 72 | NE | 1 | 0.4 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | Long | ESE | D. clouds..... | |
| Trenton, Villefranche, France | 29.90‡ | 759.4‡ | ..... | ..... | 62 | 16.7 | 77 | ENE | ..... | ..... | 0-1 | ..... | 10 | ..... | NE | 0 | 0 | Smooth | ..... | Misty..... | |
| Tuscarora, N. 18° 00′, W. 103° 20′ | 29.64 | 752.8 | 76 | 24.4 | 77 | 25.0 | 77 | NNW | ..... | ..... | 3 | ..... | 5 | ..... | E | ..... | ..... | Light | NW | Fair ..... | |
| Vandalia, Villefranche, France | 29.86‡ | 758.4‡ | ..... | ..... | 61 | 16.1 | 66 | E | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Cloudy..... | |
| Wabash, Boston, Mass. | 29.74‡ | 755.4‡ | ..... | ..... | 44 | 6.7 | 76 | NW | 10 | 4.5 | ..... | ..... | 5 | ..... | Calm | 0.08 | 2.0 | ..... | ..... | Fair..... | |
| Wyoming, N. 40° 48′, W. 66° 59′ | 29.71* | 754.6* | ..... | ..... | 38 | 3.3 | 81 | N | ..... | ..... | 6 | ..... | 10 | ..... | N | ..... | ..... | Mod'ate | N | Squally..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | Force. | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | | Amount. | | Direction. | | Character. | Direction from— | | |
| | | | | | | | | | | | | Upper | Lower | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Peking, N. 37° 25′, W. 156° 17′ | | | 30.35† | 770.4† | 52 | 11.1 | 100 | NNE | 6.2 | 2.8 | | 10 | | NW | | Small | WNW | Foggy | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio, N. 34° 32′, E. 152° 46′ | | | | | 55 | 12.8 | | ENE | | | 6 | | 4 | | ENE | Smooth | ENE | D. clouds | Capt. Searle. |
| S. S. Colima, N. 18° 17′, W. 103° 42′ | | | 29.86† | 758.4† | 77 | 25.0 | 82 | WNW | | | 4 | | 5 | | ESE | Irregular. | WNW | D. clouds | Capt. Whitebury. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Austin. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic, N. 43° 38′, W. 45° 25′ | | | 29.19* | 741.4* | | | | W | | | 4 | | 9 | | SE | Heavy | W | Overcast | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. W. H. Thompson. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic, N. 40° 51′, W. 57° 50′ | | | 29.33† | 745.0† | 52 | 11.1 | ?? | N | | | 3 | | | | NNE | Heavy | NE | D. clouds | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. *Aneroid; corrected for elevation; instrumental error not known. †Aneroid.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, N. 39° 7′, W. 182° 20′ | | | 30.40* | 772.1* | | | | N | | | 4 | | Heavy | | N | Mod'ate | N | D. clouds | Capt. John Metcalf. |
| S. S. Gaelic, Hong-Kong, China | | | 30.14† | 765.5† | 71 | 21.7 | 85 | ESE | | | 5 | | | | | | | Misty | Capt. W. H. Kidley |
| S. S. Oceanic, N. 34° 53′, E. 146° 22′ | | | 30.27 | 768.8 | 57 | 13.9 | 94 | Var. | | | 2 | | 3 | | SW | Smooth | | D. clouds | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg, N. 26° 40′, W. 70° 30′ | | | 30.01 | 762.2 | 71.5 | 21.9 | 66 | N | | | 3 | | d | | | Light | NW | Blue sky | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | TRUE COURSE TOWARD— | HOURLY RATE IN KNOTS. | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | SEA-SWELL. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | CHARACTER | DIRECTION FROM— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, N. 47° 16′, W. 38° 29′ | | | 29.52* | 749.8* | 53 | 11.7 | ?? | SE | | | 7 | | 9 | | ESE | Heavy | SW;E | Cloudy | Captain Sargent. |
| S. S. Ohio, Philadelphia, Pa | | | 29.96 | 761.0 | 48 | 8.9 | 92 | NW | | | 3 | | 8 | | NW | | | Clear? | Captain Morrison. |
| S. S. Pennsylvania, N. 40° 10′, W. 63° 24′ | | | 29.48* | 748.8* | 39 | 3.9 | 100 | NNW | | | 5 | | 9 | | NNW | Light | NW;SW | Cloudy | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Corrected for temperature and elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Rundle. |
| S. S. Switzerland, N. 44° 01′, W. 48° 25′ | | | 29.17* | 740.9* | | | | NE | 18 | 8.0 | | | 10 | | NE | Confused. | WSW | Foggy | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

*Aneroid; regulated to standard at Antwerp.

**ALLAN LINE MARINE SERIES.**

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| S. S. Scandinavian, N. 44° 22′, W. 63° 27′ | | | 29 57 | 751.1 | 36 | 2.2 | | NE | | | 5 | | 10 | | N | Light | NE | Misty | Capt. W. Richardson. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.)**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, N. 40° 14′, W. 73° 40′ | | | 29.81 | 757.2 | 48 | 8.9 | 78 | NW | 13 | 5.8 | | | 2c | | W | Short sea. | | Clear | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.91 | 759.7 | 25.5 | — 3.6 | 94 | Calm | 0 | 0 | | | 10s | | | | | Clearing | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Ass't.) Chief Signal Officer, U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 9, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

## ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.07 | 763.8 | 65.8 | 18.8 | 83 | NE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Dr. Ollive. |
| Nemours | ..... | ..... | 29.99 | 761.8 | 67.3 | 19.6 | 76 | NW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0.016 | 0.4 | Cloudy | Michel. |
| Algiers | ..... | ..... | 29.82 | 757.3 | 65.1 | 18.4 | 77 | W | ..... | ..... | 5 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Towilliere. |
| La Calle | ..... | ..... | 29.84 | 758.0 | 60.8 | 16.0 | 76 | NNW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Boulangeot. |
| Tunis | ..... | ..... | 29.76 | 755.8 | 71.1 | 21.7 | 63 | NW | ..... | ..... | 8 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Jacques. |
| Sfax | ..... | ..... | 29.76 | 756.0 | 71.6 | 22.0 | ..... | NNE | ..... | ..... | 6 | ..... | 3 | ..... | ..... | 0.039 | 1.0 | Pretty fair | Gau. |
| Saida | ..... | ..... | 29.97 | 761.2 | 58.6 | 14.8 | ..... | WNW | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Herbin. |
| Tebessa | ..... | ..... | 29.81 | 757.1 | ..... | ..... | ..... | N | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Wafrin. |
| Geriville | ..... | ..... | 29.98 | 761.6 | 63.0 | 17.2 | 86 | NW | ..... | ..... | 7 | ..... | 9 | ..... | ..... | 0 | 0 | Covered | Lemaillot. |
| Laghouat | ..... | ..... | 30.00 | 762.1 | 64.4 | 18.0 | 41 | E | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Bertrand. |
| Biskra | ..... | ..... | 29.83 | 757.7 | 77.7 | 25.4 | 28 | NW | ..... | ..... | 6 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

## AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.41 | 746.9 | 29.95 | 760.8 | 57.2 | 14.0 | 40 | NE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.33 | 744.9 | 30.12 | 765.0 | 39.9 | 4.4 | 84 | WNW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.094 | 2.4 | ..... | Dr. Wierzbiski. |
| Eperies | 29.12 | 739.6 | 30.02 | 762.4 | 45.3 | 7.4 | 65 | N | ..... | ..... | 1 | ..... | 10k;s | ..... | ..... | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.72 | 729.6 | 29.98 | 761.5 | 50.9 | 10.5 | 44 | ESE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.52 | 724.4 | 29.95 | 760.7 | 50.7 | 10.4 | 47 | NNW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.55 | 725.1 | 29.90 | 759.4 | 48.6 | 9.2 | 50 | ENE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner |
| Lemberg | 28.97 | 735.7 | 29.98 | 761 4 | 41.4 | 5.2 | 81 | NW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.264 | 6.7 | ..... | Dr. T. Stanecki. |
| Pola | 29.81 | 757.1 | 29.92 | 760.0 | 54.3 | 12.4 | 57 | WNW | ..... | ..... | 1 | ..... | 9ks | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.56 | 750.8 | 30.03 | 762.7 | 50.0 | 10.0 | 45 | NW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.70 | 754.4 | 29.98 | 761.6 | 51.8 | 11.0 | 54 | E | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Karl Stancel. |
| Trieste | 29.83 | 757.7 | 29.93 | 760.3 | 57.2 | 14.0 | 61 | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | Fair | P. Busin. |
| Vienna | 29 28 | 743.6 | 30.00 | 762.0 | 50.4 | 10.2 | 38 | ESE | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met.Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

## BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.38 | 720.9 | 29.90 | 759.4 | 48.6 | 9.2 | 57 | SE | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. M. Passau., |
| Brussels | 29.75 | 755.6 | 29.95 | 760.8 | 46 9 | 8.3 | 66 | ENE | ..... | ..... | 5 | ..... | 8 | ..... | E | 0 | 0 | ..... | Royal Observatory. |
| Furnes | 29.93 | 760.2 | 29.95 | 760.8 | 52.9 | 11.6 | 65 | ENE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | M. E. de Cae. |
| Maeseyck | 29.89 | 759.2 | 30.02 | 762.4 | 46.2 | 7.9 | 75 | E | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

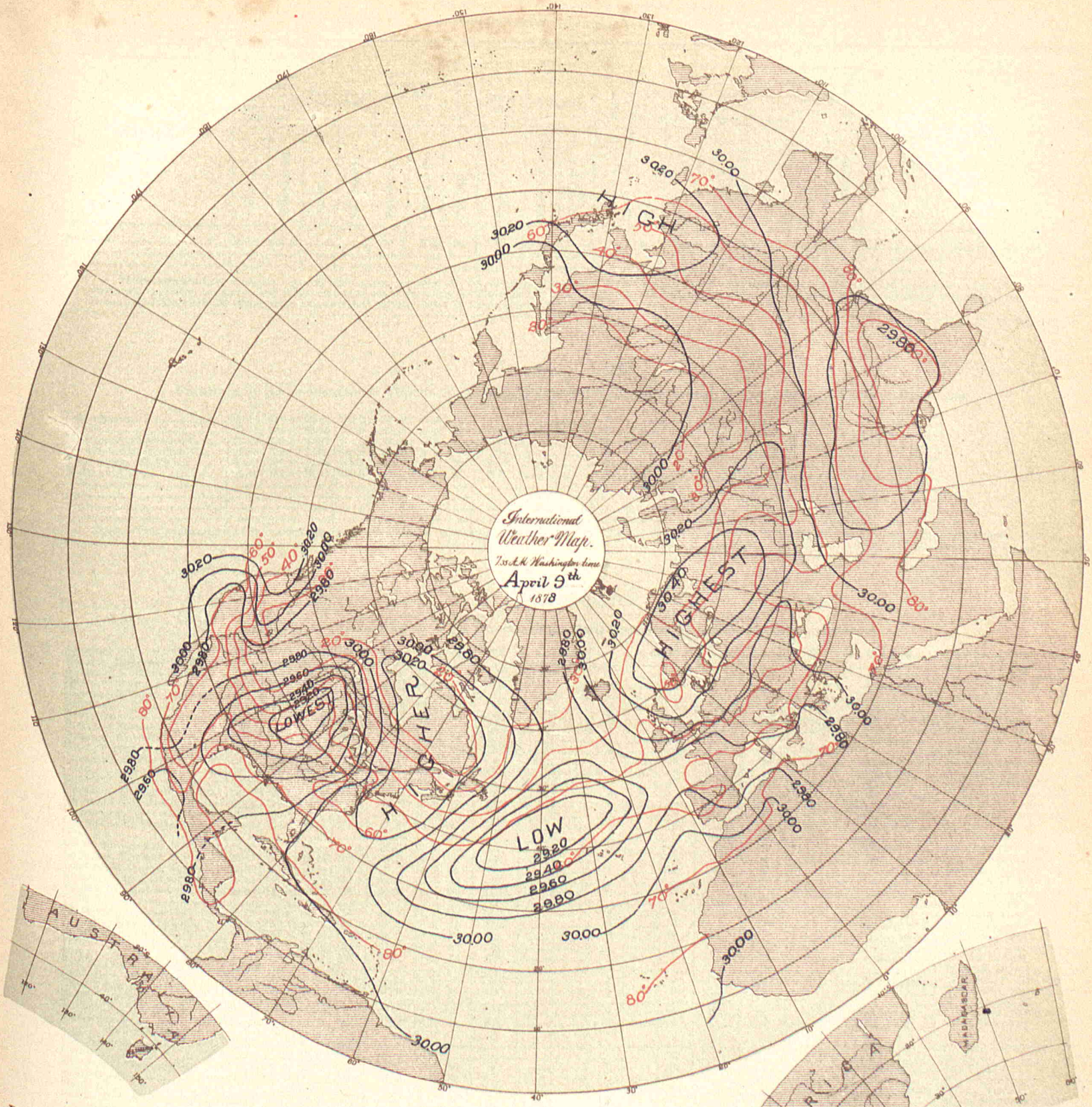
| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'r 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.22 | 767.6 | 30.32 | 770.1 | 43.6 | 6.4 | ..... | SE | 13 | 5.8 | ..... | ..... | 9 | ..... | ..... | 0.030 | 0.76 | Overcast..... | W. B swell. |
| Ardrossan | 30.12 | 765.0 | 30.14 | 765.5 | 56 | 13.3 | ..... | E | ..... | ..... | 5 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.09 | 764.3 | 50.6 | 10.0 | ..... | E | 18 | 8.0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Squally..... | S.Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.03 | 762.7 | 51.2 | 10.7 | ..... | ENE | 25 | 11.2 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 29.95 | 760.7 | 55.4 | 13.0 | ..... | SE | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | J. L. E. Dreyer. |
| Bradford, Yorkshire | 29.73 | 755.1 | 30.12 | 765.0 | 44.1 | 6.7 | ..... | NE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.98 | 761.5 | 30.01 | 762.2 | 84.0 | 28.9 | ..... | NE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 30.03 | 762.7 | 47.0 | 8.3 | ..... | E | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | H.Todd. [H.O. |
| Cardington | ..... | ..... | 30.03 | 762.7 | 48.0 | 8.9 | ..... | SE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | John McLaren. |
| Chatham, School M. E. | 29.86 | 758.4 | 30.00 | 762.0 | 45.2 | 7.3 | ..... | SE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.37 | 720.6 | 29.86 | 758.4 | 46.0 | 7.8 | ..... | E | ..... | ..... | 7 | ..... | 3 | ..... | ..... | ..... | ..... | Fine..... | Alexander Watt. |
| Donaghadee | 30.08 | 764.0 | 30.11 | 764.8 | 49 | 9.4 | ..... | SE | ..... | ..... | 6 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 29.93 | 760.2 | 29.96 | 761.0 | 46 | 7.8 | ..... | NW | ..... | ..... | 6 | ..... | 0 | ..... | ..... | ..... | ..... | Clear..... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 30.07 | 763.8 | 49.0 | 9.4 | ..... | SE | 6.2 | 2.8 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Thomas Mackereth. |
| Falmouth, Observatory | 29.61 | 752.1 | 29.84 | 757.9 | 46.0 | 7.8 | ..... | E | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Squally..... | The Staff. |
| Fort Napier, (Natal) | 27.78 | 705.6 | 29.99 | 761.7 | 76.4 | 24.7 | ..... | E | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G.Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.69 | 754.1 | 29.92 | 760.0 | 87 | 30.6 | ..... | W | ..... | ..... | 0 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's College | ..... | ..... | 29.87 | 758.7 | 57 | 13.9 | ..... | ESE | ..... | ..... | 5 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.89 | 759.2 | 29.94 | 760.5 | 65.8 | 18.8 | ..... | W | ..... | ..... | 5 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Corpl. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.97 | 761.2 | 30.17 | 766.3 | 48.8 | 9.3 | ..... | ENE | ..... | ..... | 7 | ..... | 9 | ..... | ..... | ..... | ..... | Blue sky..... | D. G. Maclean. |
| Great Yarmouth | 30.06 | 763.5 | 30.07 | 763.8 | 43 | 6.1 | ..... | E | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.81 | 757.2 | 29.98 | 761.5 | 51.1 | 10.6 | ..... | ENE | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff, for G. B. Airy. |
| Guernsey | 29.55 | 750.6 | 29.78 | 756.4 | 48.5 | 9.2 | ..... | NE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 29.82 | 757.4 | 49 | 9.4 | ..... | E | ..... | ..... | 7 | ..... | 10n | ..... | ..... | 0.27 | 6.9 | Raining..... | M. P. Moyle. |
| Holyhead | 29.97 | 761.2 | 30.02 | 762.5 | 53 | 11.7 | ..... | ENE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | John Tilston. |
| Jersey | 29.50 | 749.3 | 29.80 | 756.9 | 47.9 | 8.8 | ..... | E | ..... | ..... | 5 | ..... | 10 | ..... | ..... | Blank | Blank | Gloomy..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 29.97 | 761.2 | 48.5 | 9.2 | ..... | ENE | 29 | 13.0 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | Hazy..... | The Staff. |
| Kingstown | 30.00 | 762.0 | 30.03 | 762.7 | 48 | 8.9 | ..... | E | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 30.06 | 763.5 | 46.7 | 8.2 | ..... | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.44 | 747.8 | 29.52 | 749.8 | 62.0 | 16.7 | ..... | NE | ..... | ..... | 10 | ..... | 0 | ..... | ..... | ..... | ..... | Fine..... | Sgt. Fred. Travis, A. H. |
| Nairn | 30.14 | 765.5 | 30.24 | 768.1 | 51 | 10.6 | ..... | SE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded.. | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 30.03 | 762.7 | 77.8 | 25.4 | ..... | SE | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 29.91 | 759.7 | 30.10 | 764.5 | 47.2 | 8.4 | ..... | ESE | ..... | ..... | 5 | ..... | 10k | ..... | E | 0 | 0 | Overcast..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.50 | 749.3 | 30.02 | 762.5 | 48.1 | 8.9 | ..... | E | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.97 | 761.2 | 51 | 10.6 | ..... | E | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | Mr. Lucas. |
| Plymouth | 29.74 | 755.4 | 29.82 | 757.4 | 49.3 | 9.6 | ..... | E | ..... | ..... | 6 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds..... | John Merrifield. |
| Roche's Point | 29.85 | 758.2 | 29.89 | 759.2 | 50 | 10.0 | ..... | ESE | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | Wet ..... | W. Kennedy. |
| Saint Ann's Head | 29.72 | 754.9 | 29.88 | 758.9 | 51 | 10.6 | ..... | ESE | ..... | ..... | 6 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 30.32 | 770.1 | 46.7 | 8.2 | ..... | SE | 32 | 14.3 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 29.96 | 761.0 | 60.0 | 15.6 | ..... | NNE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | Blank | Blank | Gloomy..... | Sergt. W. H. Lyne. |
| Sheffield | 29.83 | 757.7 | 30.12 | 765.0 | 44.9 | 7.2 | ..... | E | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0.03 | 0.8 | Overcast..... | W. F. Cooper. |
| Silloth Rectory | 30.11 | 764.8 | 30.14 | 765.5 | 51.9 | 11.1 | 56 | SE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.70 | 754.4 | 30.10 | 764.5 | 47.9 | 8.8 | ..... | E | ..... | ..... | 5 | ..... | 3 | ..... | ..... | ..... | ..... | Squally..... | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 30.15 | 765.8 | 50 | 10.0 | ..... | SE | ..... | ..... | 5 | ..... | 0 | ..... | ..... | ..... | ..... | Clear..... | John Sutherland. |
| Stratfield Turgiss | 29.73 | 755.1 | 29.95 | 760.7 | 52.7 | 11.5 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Rev. C. H. Griffith, F.M. |
| Thurso | ..... | ..... | 30.28 | 769.1 | 45 | 7.2 | ..... | SE | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 29.83 | 757.7 | 50 | 10.0 | ..... | E | ..... | ..... | 8 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 29.81 | 757.2 | 51.7 | 10.9 | ..... | E | 35 | 15.6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E.J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.87 | 758.7 | 66.0 | 18.9 | 82 | SE | ..... | ..... | 3 | ..... | 6k | ..... | ..... | 0 | 0 | Sultry..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.75 | 755.6 | 29.94 | 760.5 | 81.4 | 27.4 | 62 | SSE | 10.0 | 4.5 | ..... | 9 | 0 | NNW | ..... | 0 | 0 | Cloudy..... | C. Meldrum. |
| Melbourne, Observatory | 30.33 | 770.4 | 30.42 | 772.6 | 66.0 | 18.9 | 79 | NNE | 4 | 1.8 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | Fine..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m.

## MARINE SERIES.

| VESSELS. | Sea or swell. Height scale 0—9 | Sea or swell. Direction, from— | Weather | Observer. |
|---|---|---|---|---|
| S. S. Algeria, N. 41° 5′ W. 67° 55′ | 5* | NE | Misty..... | Capt. W. Watson. |
| S. S. Batavia | | | | Capt. J. E. Mouland. |
| Ship Camperdown | | | | Capt. A. T. Miller. |
| Brig Catherine | | | | Capt. Adam Smith. |
| Barque Celeste | | | | Capt. D. F. McKechnie |
| S. S. Hibernia | | | | Capt. W. R. Cato |
| Barque Maroon | | | | Capt. A. T. Brown. |
| Ship Mikado | | | | Capt. C. C. Prehn. [R. |
| S. S. Peruvian | | | | Capt. W. H. Smith, R. N. |
| Royal Alice | | | | Capt. E. M. Hughes. |
| S. S. Seine | | | | Capt. H. Manning. |
| Barque Sorata | | | | Capt. Jas. J. Price. |
| Schooner Traveller | | | | Capt. Alex Simpson |
| S. S. Yorkshire, N. 50° 20′ W. 15° 10′ | 2 | ENE | D. clouds..... | Capt. H. Longley. |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature: Inches. | BAROMETER. Corrected for instrum'tal error and temperature: Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.20 | 665.5 | ..... | ..... | 70.2 | 21.2 | 82 | E | ..... | ..... | 1 | p | Haze | ..... | ..... | Inap. | Inap. | ..... | Federico Maison. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.18 | 766.5 | 30.23 | 767.7 | 41 4 | 5.2 | 74 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Fanöe | 30.18 | 766.5 | 30.20 | 767.0 | 43.9 | 6.6 | 81 | ENE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.93 | 760.1 | 29.97 | 761.2 | 27.7 | — 2.4 | 87 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | 29.88 | 758.9 | 29.92 | 760.0 | 36.1 | 2.3 | 79 | SE | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... |
| Thorshavn, (Farõe) | 30.23 | 767.8 | 30.26 | 768.7 | 47.7 | 8.7 | 70 | SSE | ..... | ..... | 6 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 30.10 | 764.6 | 30.27 | 768.9 | 42.4 | 5.8 | 97 | NE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.34 | 745.1 | 29.89 | 759.1 | 51.8 | 11 | 81 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.213 | 5.4 | Covered ..... | Collignon, Director. |
| Amiens, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bonvarne, Director. |
| Avignon, Normal School | 29.70 | 754.3 | 29.78 | 756.3 | 61.4 | 18 | 44 | SE | ..... | ..... | 3 | ..... | 8 | ..... | SE | 0 | 0 | Very cloudy | Mr. Giraud, Director |
| Bar-sur-Seine | 29.23 | 742.4 | 29.78 | 756.4 | 54.7 | 12.6 | 52 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered ..... | C. Saillard. |
| Beaumette Obs'y (Angers) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Albert Cheux. |
| Beauvais | ..... | ..... | ..... | ..... | 54.9 | 12.7 | 34 | E | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy..... | Normal School. |
| Besançon | 28.93 | 734.7 | 29.82 | 757.4 | 52.0 | 11.1 | 74 | ENE | ..... | ..... | 2 | ..... | 8 | ..... | SW | Inap. | Inap. | Very cloudy | Normal School. |
| Bourg-en-Bresse | 28.89 | 733.8 | 29.80 | 757.0 | 60.8 | 16 | 59 | SE | ..... | ..... | 4 | ..... | 8en | ..... | SE | 0.098 | 2.5 | Very cloudy | Normal School. |
| Bourges, Normal School | 29.17 | 740.8 | 29.74 | 754.5 | 58.1 | 14.5 | 82 | SE | ..... | ..... | 3 | ..... | 10 | ..... | E | 0 | 0 | Covered ..... | A. Wagner, Director. |
| Brest, Naval Observatory | 29.41 | 747.1 | 29.63 | 752.6 | 59.2 | 15.1 | 72 | NE | ..... | ..... | 4 | ..... | 4k | ..... | NE | 0 | 0 | ..... | The Staff. |
| Carcassonne, Normal School | 29.30 | 744.3 | 29.71 | 754.7 | 60.1 | 15.6 | 81 | E | ..... | ..... | 4 | ..... | 2 | ..... | W | 0 | 0 | Slightly cl'dy | Vateau, Director. |
| Caen | 29.71 | 754.7 | 29.79 | 756.6 | 53 8 | 12.1 | 54 | ENE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | Normal School. |
| Chartres, Normal School | 29.17 | 740.8 | 29.73 | 755.1 | 49.3 | 9.6 | 84 | E | ..... | ..... | 2 | ..... | 10 | ..... | NE | 0.020 | 0.5 | Covered ..... | Lequin, Director. |
| Châlons-sur-Marne, N. Sch' | 29.49 | 749.1 | 29.81 | 757.2 | 57.6 | 14.2 | 45 | E | ..... | ..... | 6 | 5c | ..... | ..... | ..... | 0 | 0 | Cloudy..... | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.34 | 719.8 | 29.66 | 753.4 | 61.2 | 16.2 | 67 | SW | ..... | ..... | 2 | ..... | 10 | ..... | SW | 0.075 | 1.9 | Covered ..... | Alluard, Director. |
| Commercy, Normal School | 28.99 | 736.3 | 29.87 | 758.7 | 50.4 | 10.2 | 70 | E | ..... | ..... | 4 | ..... | 2 | ..... | E | 0 | 0 | Slightly cl'dy | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.67 | 728.3 | 29.82 | 757.3 | 59.9 | 15.5 | 47 | SE | ..... | ..... | 4 | ..... | 10 | ..... | SE | 0 | 0 | Covered ..... | M. Kina. |
| Grenoble | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| La Roche-sur-Yon, N. School | 29.46 | 748.2 | 29.66 | 753.4 | 70.9 | 21.6 | 50 | SE | ..... | ..... | 2 | ..... | 5 | ..... | S | 0 | 0 | Cloudy..... | Mouillot, Director. |
| Le Mans, Normal School | 29.47 | 748.5 | 29.78 | 756.4 | 46.6 | 8.1 | 81 | SE | ..... | ..... | 4 | ..... | 8 | ..... | S | 0.169 | 4.3 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.87 | 733.4 | 29.78 | 756.5 | 58.6 | 14.8 | 90 | SE | ..... | ..... | 1 | ..... | 10 | ..... | N | 0.31 | 8. | Raining..... | Voudez, Director. |
| Lorient, Naval Observatory | 29.60 | 751.8 | 29.70 | 754.3 | 65.8 | 18.8 | 64 | E | ..... | ..... | 2 | ..... | 2 | ..... | E | 0 | 0 | ¼ covered... | T. Carré, Director. |
| Mâcon, Normal School | 29.08 | 738.5 | 29.73 | 755.1 | 51.1 | 10.6 | 90 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0.205 | 5.2 | Covered ..... | M. Marchal, Director. |
| Metz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. A. Schuster, Dir. |
| Mirecourt | 28.73 | 729.8 | 29.77 | 756.2 | 53.4 | 11.9 | 33 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered ..... | Normal School. |
| Nismes, Normal School | 29.58 | 751.3 | 29.78 | 756.3 | 65.5 | 18.6 | 57 | NW | ..... | ..... | 2 | ..... | 2 | ..... | SW | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Orleans, Normal School | 29.31 | 744.5 | 29.69 | 754.2 | 53.6 | 12 | 83 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered ..... | Bernard, Director. |
| Paris, Observatory | 29.56 | 750.9 | 29.80 | 756.9 | 54.1 | 12.3 | 36 | E | ..... | ..... | 2 | ..... | 10 | ..... | ESE | 0 | 0 | Covered ..... | National Observatory. |
| Privas | 28.71 | 729.3 | 29.77 | 756.1 | 58.1 | 14.5 | 78 | SE | ..... | ..... | 2 | ..... | 5 | ..... | SE | 0 | 0 | Cloudy.. ..... | Normal School |
| Puy de Dome (Summit) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.61 | 752.2 | 29.65 | 753.0 | 69.1 | 20.6 | 51 | ESE | ..... | ..... | 2 | ..... | 2 | ..... | ESE | 0.28 | 7. | ¼ covered... | Lt. Decante, Director. |
| Rouen, Normal School | 29.75 | 755.7 | 29.84 | 757.9 | 57.4 | 14.1 | 29 | ESE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear..... | F. Lucard, Director. |
| Saint Malo (Port) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. H. Hercouet. |
| Tarbes, Normal School | 28.64 | 727.5 | 29.70 | 754.3 | 73.4 | 23 | 53 | SW | ..... | ..... | 2 | ..... | 5 | ..... | W | 0 | 0 | Cloudy..... | T. Hugnes, Director. |
| Villefranche | 29.09 | 738.9 | 29.79 | 756.7 | 61.0 | 16.1 | 71 | SE | ..... | ..... | 2 | ..... | 10 | ..... | S | 0.024 | 0.6 | Covered ..... | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.85 | 758.2 | 29.88 | 758 9 | 80.8 | 27.1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchési. |
| Lyons | ..... | ..... | 29.81 | 757.2 | 57.6 | 14.2 | ..... | ..... | ..... | ..... | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | M. Jeys. |
| Marseilles, Observatory | ..... | ..... | 29.76 | 756.0 | 64.6 | 18.1 | 46 | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | The Staff. |
| Mont-Louis | 24.58 | 624.3 | 29.89 | 759.3 | 47.3 | 8.5 | 67 | SE | 14.9 | 6.66 | ..... | ..... | 3 | ..... | SW | 0.020 | 0.5 | ..... | Mr. Falguère. |
| Nice | ..... | ..... | 29.85 | 758.1 | 65.1 | 18.4 | ..... | SW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.217 | 5.5 | Very cloudy | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.52 | 749.5 | 29.79 | 756.7 | 54.1 | 12.3 | 38 | E | ..... | ..... | 4 | ..... | 10 | ..... | SSE | 0 | 0 | ..... ..... | Marié Davy, Director |
| Perpignan | ..... | ..... | 29.74 | 755.4 | 56.3 | 13.5 | 83 | S | 18.6 | 8.33 | ..... | ..... | 10 | ..... | SE | 0.047 | 1.2 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.23 | 564.6 | ..... | ..... | 32.0 | 0.0 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.138 | 3.5 | Snowy..... | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.63 | 752.7 | 29.80 | 756.9 | 56.1 | 13.4 | 34 | ENE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Covered ..... | E. Renou. |
| Toulouse, Observatory | 28.99 | 736.3 | 29.71 | 754.5 | 60.8 | 16.0 | 68 | SSE | ..... | ..... | 6 | ..... | 3 | ..... | ..... | 0.075 | 1.90 | ..... | The Staff. |
| Tours | 29.54 | 750.2 | 29.73 | 755.2 | 54.7 | 12.6 | 78 | E | ..... | ..... | 2 | ..... | 10 | ..... | E | 0.031 | 0.8 | ..... ..... | C. Marquet. |
| Versailles, (near Paris) | ..... | ..... | 29.80 | 757.0 | 53.6 | 12.0 | 40 | ESE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Slightly cov. | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.17 | 766.4 | 30.29 | 767.0 | 49.5 | 9.7 | 88 | NE | 9.4 | 4.2 | ..... | ..... | 10n | ..... | ..... | 0.008 | 0.2 | Covered ..... | Marc Dechevrens, S. J |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:35, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er (–10) | Clouds. Amount. Low'r (0–10) | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | |
| Berlin | 29.97 | 761.2 | 30.15 | 765.7 | 44.8 | 7.1 | 69 | E | | | 2 | | 7 | | | | | | Prof. Dr. Hoh. |
| Breslau | 29.58 | 751.3 | 30.11 | 764.8 | 48.0 | 8.9 | 59 | ENE | | | 2 | | 6 | | | 0.268 | 6.8 | | Prof. Arndt. |
| Carlsruhe | 29.47 | 748.5 | 29.90 | 759.4 | 53.6 | 12.0 | 50 | NE | | | 2 | | 1 | | | 0.042 | 1.06 | | Royal University Obs'y |
| Cassel | 29.52 | 749.8 | 30.13 | 765.3 | 47.1 | 8.4 | 68 | SE | | | 2 | | 7 | ESE | | 0 | 0 | | Albert Senz. |
| Crefeld | 29.84 | 758.0 | 30.00 | 762.1 | 50.5 | 10.3 | 62 | NE | | | 5 | | 4k | | | 0 | 0 | | Dr. H. Möhl. |
| Emden | 30.15 | 765.8 | 30.19 | 766.7 | 49.3 | 9.6 | 68 | NE | | | 3 | | 10 | | | 0 | 0 | | Director Lose. |
| Frankfort on the Main | 29.65 | 753.2 | 30.02 | 762.6 | 49.6 | 9.8 | 42 | ENE | | | 2 | | 6 | | | 0 | 0 | | Prof. Prestel. |
| Friedrichshafen | 28.42 | 721.9 | 29.85 | 758.2 | 53.6 | 12.0 | 41 | NE | | | 6 | | 5 | W | | 0 | 0 | Light clouds | Physical Society. |
| Hamburg | 30.07 | 763.8 | 30.14 | 765.6 | 41.0 | 5.0 | 97 | ENE | | | 2 | | 10 | | | 0.004 | 0.1 | Light fog | M. Wilhelm. |
| Kiel | 30.15 | 765.8 | 30.17 | 766.2 | 41.9 | 5.5 | 86 | NE | | | 3 | | 10 | | | 0 | 0 | | Captain F. Hegemann. |
| Königsberg, (Prussia) | 30.07 | 763.6 | 30.15 | 765.7 | 55.4 | 13.0 | 73 | NE | | | 2 | | 6 | | | 0.016 | 0.4 | | Prof. G. Karsten. |
| Köslin | | | 30.13 | 765.3 | 50.2 | 10.1 | | SE | | | 2 | | 4 | | | 0 | 0 | | Prof. E. Luther. |
| Leipsic, Observatory | 29.69 | 754 1 | 30.12 | 765.1 | 41.9 | 5.5 | 76 | E | | | 1 | | 9 | ENE | | 0.071 | 1.8 | | H. Müller. |
| Memel, Naval School | 30.17 | 766.3 | 30.22 | 767.5 | 60.4 | 15.8 | 48 | E | | | 5 | | 10cs;n | | | | | | Prof. Bruhns. |
| Neufahrwasser | 30.19 | 766.9 | 30.21 | 767.3 | 42.3 | 5.7 | 82 | NNE | | | 1 | | 10 | | | 0.024 | 0.6 | | Reinbrecht von Skalweit. |
| Posen | 29.89 | 759.2 | 30.19 | 766 7 | 47.5 | 8.6 | 71 | E | | | 5 | | 10 | | | 0.059 | 1.5 | | A. Lothes. |
| Strassburg Obs., (in Alsace | 29.33 | 745.0 | 29.88 | 758.9 | 55.8 | 13.2 | 35 | NE | | | 3 | | 7 | | | 0 | 0 | Solar corona | Dr. Magener. |
| Stuttgart | 28.95 | 735.4 | 29.89 | 759.3 | 52.7 | 11.5 | 38 | E | | | 1 | | 3 | E | | 0 | 0 | | Dr. Schur. |
| Treves, (Trier) | 29.32 | 744.6 | 29.84 | 757.8 | 52.7 | 11.5 | 50 | E | | | 6 | | 2 | | | 0 | 0 | | Prof. Schoder. |
| Weissenburg, (Bavaria) | 28.45 | 722.5 | 29.95 | 760.8 | 47.3 | 8.5 | 48 | ENE | 4 | 2 | | | 9ck | | E | 0 | 0 | | Prof. Flesch. |
| Wustrow, Naval School | 30.27 | 768.8 | 30.31 | 769.8 | 40.3 | 4.6 | 96 | NE | | | 3 | | 10 | | | 0.020 | 0.5 | | Dr. Von Bebber. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | E. F. Schütz. |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.58 | 751.4 | 29.97 | 761.2 | 67.6 | 19.8 | | SW | | | 1.0 | | | | | | | Sirocco | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.74 | 755.4 | 29.79 | 756.7 | 81.1 | 27.3 | 81 | WSW | 29? | 13.0? | | | 4 | | | 0 | 0 | D. clouds | |
| Deesa | 29 30 | 744.3 | 29.76 | 756.0 | 96.5 | 35.8 | 34 | SW | | | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.79 | 756.7 | 29.83 | 757.7 | 84.4 | 29.1 | 71 | WNW | 9 | 4.0 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.79 | 706.0 | 29.74 | 755.5 | 91.3 | 32.9 | 28 | WNW | | | | | 0 | | | 0 | 0 | Dust-whirl. | |
| Lahore | 29.00 | 736.7 | 29.73 | 755.2 | 88.1 | 31.2 | 18 | W | 4.1 | 1.8 | | | 10 | | | 0 | 0 | Stormy | |
| Belgaum | 27.31 | 693.7 | 29.80 | 757.0 | 85.3 | 29.6 | 44 | W | 6 | 2.7 | | | 1 | | | 0 | 0 | D. clouds | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.81 | 731.8 | 29.69 | 754.1 | 88.8 | 31.6 | 19 | Calm | 1.2 | 0.5 | | | 9 | | | 0 | 0 | | |
| Agra | 29.16 | 740.6 | 29.70 | 754.4 | 96.6 | 35.9 | 18 | E | | | | | | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.68 | 728.5 | 29.69 | 754.1 | 96.0 | 35.6 | 25 | SW | 5.0 | 2.2 | | | 4 | | E | 0 | 0 | D. clouds | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.29 | 744.0 | 29.65 | 753.1 | 97.6 | 36.4 | 35 | Calm | 4.6 | 2.1 | | | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.34 | 745.2 | 29.64 | 752.8 | 94.8 | 34.9 | 24 | Calm | 1.3 | 0.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.46 | 748.3 | 29.64 | 752.8 | 97.4 | 36.3 | 15 | W | 1.5 | 0.7 | | | 4 | W | W | 0 | 0 | D. clouds | |
| Hazaribagh | 27.69 | 703.4 | 29.65 | 753.1 | 90.3 | 32.4 | 16 | WNW | 13.0 | 5.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.69 | 754.0 | 29.77 | 756.1 | 86.8 | 30.4 | 55 | S | 7.1 | 3.2 | | | 9 | | | 0.20 | 5.1 | D. clouds | |
| Calcutta (Alipore) | 29.73 | 755.1 | 29.75 | 755.6 | 82.9 | 28.3 | 63 | SSW | 14 | 6.3 | | | 9 | | SW | 0 | 0 | Thunder; lightn'g | |
| Goalpara | 29.40 | 746.9 | 29.80 | 756.9 | 73.8 | 23.2 | 72 | E | 9.8 | 4.4 | | | 10 | | W | 0.26 | 6.6 | Overcast | |
| Chittagong | 29.73 | 755.0 | 29.82 | 757.4 | 84.4 | 29.1 | 74 | S | 11.0 | 4.9 | | | 2 | | | 0 | 0 | Misty | |
| Sibsagar | 29.56 | 750.8 | 29.90 | 759.6 | 67.0 | 19.4 | 87 | NE | 4.8 | 2 2 | | | 10 | | | 0.44 | 11.2 | Overcast | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.37 | 720.6 | 29.70 | 754.2 | 95 | 35.0 | 16 | NW | 4.9 | 2.2 | | | | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instru'tal error and temperature. Inches. | Barometer. Corrected for instru'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.50 | 749.3 | 29.91 | 759.8 | 55.6 | 13.1 | 34 | S | 1.3 | 0.6 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 29.80 | 756.9 | 29.91 | 759.7 | 55.8 | 13.2 | 38 | ENE | 4.9 | 2.2 | ..... | ..... | 5 | W | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.72 | 754.8 | 29.91 | 759.7 | 55.4 | 13.0 | 36 | NE | 2.5 | 1.1 | ..... | ..... | 2 | W | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.58 | 726.0 | 29.91 | 759.6 | 52.9 | 11.6 | 50 | SE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.38 | 746.2 | 29.90 | 759.4 | 56.3 | 13.5 | ..... | E | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.04 | 737.6 | 29.95 | 760.8 | 48.9 | 9.4 | 61 | WNW | 4.3 | 1.9 | ..... | ..... | 10 | N | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 28.02 | 711.6 | 29.94 | 760.5 | 45.9 | 7.7 | 69 | NW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.61 | 752.2 | 29.84 | 757.9 | 59.2 | 15.1 | 41 | ENE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.68 | 753.9 | 29.85 | 758.2 | 60.8 | 16.0 | 40 | N | 3.8 | 1.7 | ..... | ..... | 4 | S | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.63 | 752.5 | 29.95 | 760.6 | 57.2 | 14.0 | 43 | SE | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.58 | 751.2 | 29.83 | 757.7 | 62.6 | 17.0 | 37 | NE | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 29.76 | 755.8 | 29.84 | 758.0 | 62.6 | 17.0 | 46 | ENE | 9.8 | 4.4 | ..... | ..... | 10 | NW | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 29.88 | 759.0 | 29.93 | 760.3 | 53.1 | 11.7 | 62 | NE | 6.3 | 2.8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.35 | 720.1 | 29.91 | 759.8 | 47.7 | 8.7 | 51 | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.69 | 754.1 | 29.80 | 756.9 | 64.0 | 17.8 | 60 | ENE | ..... | ..... | 2 | ..... | 4 | SE | ..... | 0.110 | 2.8 | ..... | Avv. P. Ponticelli. |
| Rome | 29.63 | 752.5 | 29.80 | 757.0 | 64.4 | 18.0 | 65 | N | 3.8 | 1.7 | ..... | ..... | 9 | ..... | ..... | 0.118 | 3.0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U. | 29.56 | 750.9 | 29.76 | 756.0 | 71.1 | 21.7 | 43 | NNE | ..... | ..... | 2 | ..... | 10 | NE | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 61.5 | 16.4 | 65 | ENE | 11.9 | 5.3 | ..... | ..... | 10 | ..... | ..... | 0.012 | 0.3 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.53 | 750.0 | 29.72 | 754.8 | 67.6 | 19.8 | 61 | Calm | ..... | ..... | 0 | ..... | 4 | SW | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 28.97 | 735.8 | 29.85 | 758.3 | 58.3 | 14.6 | 78 | SW | 5.6 | 2.5 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.37 | 745.9 | 29.62 | 752.3 | 63.1 | 17.3 | 64 | NE | 4.9 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.53 | 750.1 | 29.61 | 752.0 | 61.0 | 16.1 | 78 | ENE | ..... | ..... | 5 | ..... | 9 | NE | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.23 | 742.4 | 29.78 | 756.5 | 66.9 | 19.4 | 43 | SE | 1.3 | 0.6 | ..... | ..... | 6 | S | ..... | 0 | 0 | ..... | Prof. F. Brioschi |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force, by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nagasaki | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Tokei (Yeddo) | 30.03 | 762.7 | 30.10 | 764.5 | 58.3 | 14.6 | 86 | S | 9.7 | 4.3 | ..... | 0 | 4cks | ..... | ..... | 0.120 | 3.05 | Fair | The Observatory. |
| Tokei (Yeddo) University | 29.98 | 761.5 | 30.08 | 761.57 | 59.1 | 15.1 | 84 | SSW | 12 | 5.4 | ..... | 0 | 2cs | ..... | ..... | 0.014 | 0.4 | Fair | Prof. P. V. Veeder. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 58.1 | 14.5 | 46 | N | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear.. | L. Castillo, A. E. |
| Guadalajara | 24.96 | 634.1 | 30.04 | 763.3 | 38.3 | 3.5 | 65 | SW | 6.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Blue sky..... | Prof. L. Perez. |
| Guanajuato | 23.56 | 598.5 | 29.80 | 756.9 | 53.2 | 11.8 | 78 | W | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear.. | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 53.2 | 11.8 | 60 | SW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear.. | Prof. M. Leal. |
| Mexico | 22.96 | 583.1 | 29.47 | 748.4 | 49.1 | 9.5 | 50 | NE | 0.4 | 0.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | ..... | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 46.2 | 7.9 | 78 | W | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | ..... | I. Orozco, M. D. |
| Puebla | 23.23 | 589.9 | 29.89 | 759.3 | 48.7 | 9.3 | 75 | SSE | 2.0 | 0.9 | ..... | 2cs | 0 | ..... | ..... | 0 | 0 | Very clear.. | M. V. de Leon, M. E. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Tlacotalpam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | Prof. B. Gonzalez. |
| San Luis Potosí | 29.63 | 752.6 | 29.64 | 752.8 | 81.5 | 27.5 | 74 | S | 10.8 | 4.8 | ..... | 10cs | 0 | ..... | ..... | 0 | 0 | Covered ..... | Prof. C. Velazquez. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. F. R. Bayly. |
| Zacatecas | 29.62 | 752.4 | 29.65 | 753.1 | 70.7 | 26.5 | 69 | ESE | 2.2 | 1.0 | ..... | 5c | 3s | ..... | ..... | 0 | 0 | Smoky..... | G. Barroeta, M. D |
| Puebla, (Catholic Institute) | 23.29 | 591.8 | 30.08 | 764.0 | 47.8 | 8.8 | 89 | S | ..... | ..... | ..... | 1c | 0 | ..... | ..... | 0 | 0 | Clear ..... | Prof. J. Rossell. |
| Morelia | 23.91 | 607.5 | ..... | ..... | 45.5 | 7.5 | 72 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | J. A. Bonilla, M. E. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Inap | Inap. | Clear..... | P. Spina. [M.M. D. D. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Tena, F. L. Param. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The elevation of Aguascalientes is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,591.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft. San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.01 | 762.2 | 30.01 | 762.2 | 46.8 | 8.2 | ..... | E | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 30.06 | 763.5 | 30.11 | 764.9 | 46.4 | 8.0 | ..... | E | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 30.08 | 764.1 | 30.08 | 764.1 | 44.8 | 7.1 | ..... | NE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 30.07 | 763.8 | 30.07 | 763.8 | 45.5 | 7.5 | 78 | E | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 30.01 | 762.3 | 30.06 | 763.5 | 46.2 | 7.9 | 73 | ENE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | H. v d Brink. |

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.37 | 771.3 | 30.42 | 772.7 | 52.9 | 11.6 | 34 | NNE | 6.0 | 2.7 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Bronø | 30.51 | 774.9 | 30.55 | 775.9 | 48.9 | 9.4 | 37 | E | 4 | 2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 30.33 | 770.3 | 30.48 | 774.1 | 46.4 | 8.0 | 52 | NW | 13 | 6 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 30.30 | 769.7 | 30.35 | 770.8 | 41.4 | 5.2 | 48 | S | 18 | 8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.27 | 743.5 | 29.47 | 748.4 | 62.1 | 16.7 | 92 | W | 6.3 | 2.8 | ..... | ..... | 8 | ..... | ..... | 0.157 | 4.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.86 | 733.1 | 29.89 | 759.3 | 58.5 | 14.7 | 82 | W | 17.4 | 7.8 | ..... | ..... | 8 | W | ..... | 0.197 | 5.0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 29.96 | 761.0 | 30.05 | 763.2 | 66.2 | 19.0 | 64 | SW | 8.1 | 3.6 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.55 | 750.6 | 29.91 | 759.7 | 60.6 | 15.9 | 76 | W | 18.6 | 8.3 | ..... | ..... | 9 | ..... | ..... | 0.071 | 1.8 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 29.54 | 750.4 | 29.61 | 752.2 | 63.3 | 17.4 | 90 | SW | 27.3 | 12.2 | ..... | ..... | 10 | ..... | ..... | 0.197 | 5.0 | Raining | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.73 | 755.2 | 29.74 | 755.4 | 84.2 | 29.0 | ..... | S | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 2 | ..... | Overcast | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Rio Douro, S. 25° 58′, E. 32° 37′ | ..... | ..... | 30.24 | 768.9 | 78.8 | 26.0 | ..... | ESE | ..... | ..... | 1 | ..... | 5 | ..... | ESE | 1 | ..... | D. clouds | J. T. d'Oliveria, Com'd't. |
| Sado, Porto Praya, Cape Verde Islands. | 30.02* | 762.5* | 30.03* | 762.8* | 82.8 | 28.2 | ..... | SW | ..... | ..... | 2 | ..... | 1 | ..... | Calm | 2 | Calm | D. clouds | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.71 | 754.5 | 29.71 | 754.7 | ..... | ..... | ..... | WNW | ..... | ..... | 2 | ..... | 5 | ..... | WNW | 1 | ..... | Blue sky | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreira, dos Amas, Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.63 | 752.7 | 30.07 | 763.7 | 43.7 | 6.6 | 91 | NW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.75 | 755.6 | 30.17 | 766.2 | 58.1 | 14.5 | 63 | E | 4 | 2 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 30.17 | 766.2 | 30.41 | 772.4 | 54.7 | 12.6 | 55 | ENE | 7 | 3 | ..... | ..... | 3c | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.45 | 773.3 | 30.46 | 773.7 | 57.9 | 14.4 | 53 | ENE | 7 | 3 | ..... | ..... | 2k | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 30.17 | 766.2 | 30.49 | 774.4 | 53.4 | 11.9 | 78 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Ch. Forsten. |
| Kieff | 29.29 | 743.9 | 29.93 | 760.1 | 47.3 | 8.5 | 94 | E | 9 | 4 | ..... | ..... | 10ks;n | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.92 | 760.0 | 29.99 | 761.8 | 46.8 | 8.2 | 75 | S | 18 | 8 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.13 | 765.3 | 30.15 | 765.8 | 48.2 | 9.0 | 91 | SSW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.86 | 758.5 | 30.41 | 772.5 | 57.9 | 14.4 | 34 | S | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.77 | 756.2 | 29.97 | 761.3 | 59.9 | 15.5 | 39 | ESE | 9 | 4 | ..... | ..... | 8s | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Archangel | 30.45 | 773.5 | 30.47 | 774.0 | 38.1 | 3.4 | 90 | SSE | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.66 | 728.0 | 30.05 | 763.2 | 69.6 | 20.9 | 20 | NW | 13 | 6 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.28 | 769.0 | 30.19 | 766.9 | 58.1 | 14.5 | 38 | ENE | 9 | 4 | ..... | ..... | 10s;n | ..... | ..... | Blank | Blank | ..... | Sebastianof. |
| Krotkowo* | 29.93 | 760.1 | 30.39 | 771.9 | 63.9 | 17.7 | 29 | ENE | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 30.18 | 766.5 | 30.45 | 773.4 | 59.0 | 15.0 | 38 | NE | 2 | 1 | ..... | ..... | 2ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 29.38 | 746.3 | 30.34 | 770.5 | 51.4 | 10.8 | 29 | WNW | 7 | 3 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs |
| Nukuss | 29.65 | 753.1 | 29.88 | 758.9 | 69.3 | 20.7 | 75 | NE | 20 | 9 | ..... | ..... | 10k | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.23 | 717.1 | 29.89 | 759.1 | 68.0 | 20.0 | 32 | NNW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light clouds | Michelson. |
| Barnaul | 29.59 | 751.6 | 30.15 | 765.7 | 23.5 | — 4.7 | 53 | NW | 9 | 4 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs |
| Yeniseisk | 29.71 | 754.5 | 30.04 | 763.1 | 20.5 | — 6.4 | 57 | NW | 7 | 3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 30.06 | 763.5 | 30.20 | 767.1 | 51.1 | 10.6 | 54 | SW | 4 | 2 | ..... | ..... | 5ks | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.76 | 705.2 | 29.93 | 760.2 | 21.0 | — 6.1 | 57 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 30.06 | 763.5 | 30.16 | 766.0 | 37.4 | 3.0 | 69 | NNW | 4 | 2 | ..... | ..... | 8k | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 12.2 | —11.0 | 65 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.61 | 752.1 | 29.72 | 754.8 | 59.9 | 15.5 | 77 | ENE | 3.3 | 1.47 | ..... | 0 | 2 | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.63 | 752.5 | 29.68 | 753.9 | 73.4 | 23.0 | 54 | NW | 4.6 | 2.04 | ..... | 2 | 6 | W | ..... | 0 | 0 | Almost cov. | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.79 | 680.4 | ..... | ..... | 57.6 | 14.2 | 76 | SW | 11.2 | 5.02 | ..... | ..... | 6 | ..... | ..... | 0.236 | 6.0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.54 | 699.5 | 29.73 | 755.2 | 60.4 | 15.8 | 70 | W | 14.2 | 6.33 | ..... | 0 | 10 | ..... | ..... | 0.378 | 9.6 | Covered | The Staff. |
| Murcia, Met. Obs'y | 29.60 | 751.9 | 29.75 | 755.6 | 76.8 | 24.9 | 40 | NW | 2.4 | 1.06 | ..... | 3 | 5 | E | ..... | Inap. | Inap | Misty | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.00 | 736.6 | 29.89 | 759.3 | 55.6 | 13.1 | 90 | SW | 8.1 | 3.61 | ..... | ..... | 10 | ..... | ..... | 0.283 | 7.2 | Covered | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.85 | 758.1 | 29.91 | 759.7 | 79.9 | 26.6 | 80 | SE | 11.4 | 5.1 | ..... | 6ck | 7n | SSW | SE | Inap. | Inap. | Cloudy | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 29.87 | 758.7 | 29.97 | 761.2 | 64.2 | 17.9 | 81 | WSW | 21.6 | 9.6 | ..... | 0 | 8 | ..... | W | 0.001? | 0.3? | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W.I. | 29.93 | 760.3 | 30.02 | 762.6 | 81.0 | 27.2 | 88 | SE | 0 | 0 | ..... | 2c | 1k | E | E | 0 | 0 | Clear. | Leonardo de Tejeda, Chief of Engineers. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the cooperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATION. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–12. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.53 | 775.5 | 30.57 | 776.5 | 89.2 | 4.0 | ..... | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.56 | 776.1 | 30.61 | 777.4 | 43.9 | 6.6 | 62 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.56 | 776.3 | 30.61 | 777.6 | 40.6 | 4.8 | 68 | ENE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 30.21 | 767 4 | 30.39 | 771.9 | 44.2 | 6.8 | 88 | NNE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0.008 | 0.2 | ..... | |
| Wisby | 30.19 | 766.7 | 30.24 | 768.2 | 54.2 | 12.4 | 65 | ESE | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0.020 | 0.5 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 30.38 | 771.6 | 30.45 | 773.5 | 35.8 | 2.1 | 94 | N | 16.6 | 7.4 | ..... | ..... | 10 | ..... | ..... | 0.001 | 0.02 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.44 | 722.4 | 29.91 | 759.8 | 39.6 | 4.2 | 93 | NNE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.362 | 9.2 | Raining | The Observatory. |
| Zurich | 28.22 | 716.8 | 29.86 | 758.5 | 52.5 | 11.4 | 50 | E | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | Bright | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —0.8 mm.; Thermometer, —6.8 cent.; Relative Humidity, +35 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.04 | 763.0 | 60.4 | 15.8 | 61 | NNE | 8 | 3.5 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanides. |
| Valona | ..... | ..... | 29.89 | 759.1 | 66.2 | 19.0 | ..... | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | A. Bertrand. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 30.03 | 762.7 | 30.15 | 765.7 | 64.0 | 17.8 | 73 | N | ..... | ..... | 3 | ..... | 10cs | ..... | ..... | 0 | 0 | Overcast | Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.19 | 766.8 | 30.26 | 768.6 | 34.2 | 1.2 | 73 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | ..... | ..... | Clear | Hon. J. Ferguson. |
| Brockville, Ontario | 29.78 | 756.4 | 30.14 | 765.5 | 47 | 8.3 | ..... | NE | 5 | 2.2 | ..... | 2c | 2s | NE | Calm | 0 | 0 | Fair | W. R. Bigg. |
| *Chatham, N B | 30.23 | 767.8 | 30.29 | 769.4 | 33 | 0.6 | 83 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | G. A. Blair. |
| Charlottetown, P. E. Island | 30.20 | 767.1 | 30.25 | 768.3 | 34 | 1.1 | 82 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.98 | 761.5 | 30.18 | 766.6 | 40.8 | 4.9 | 94 | E | ..... | ..... | 1 | 2cs | 8s | ..... | ..... | 0 | 0 | Clearing | James Smith, M. A. |
| Dalhousie, N. B | 30.19 | 766.8 | 30.22 | 767.6 | ..... | ..... | ..... | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | Clear | H. A. Johnson. |
| Esquimault, B. C | 30.15 | 765.8 | 30.20 | 767.1 | 38.1 | 3.4 | 92 | Calm | ..... | ..... | ..... | 9cs | ..... | ..... | ..... | 0 | 0 | Cloudy | W. H. Bevis. |
| *Father Point, Quebec | 30.26 | 768.6 | 30.28 | 769.1 | 34 | 1.1 | 79 | SW | 7 | 3.1 | ..... | 5ck | 2s | N | N | 0 | 0 | Cloudy | J. McWilliams. |
| Fredericton, N. B | 30.26 | 768.6 | 30.33 | 770.4 | 34.0 | 1.1 | 79 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. Harrison. |
| *Fort Garry Manitoba | 28.57 | 725.7 | 29.39 | 746.5 | 42 | 5.6 | 100 | E | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0.320 | 8.13 | Light rain | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.76 | 730.5 | 29.86 | 758.4 | 45 | 7.2 | 76 | E | ..... | ..... | 2 | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | James Grant. |
| *Halifax, N. S | 30.05 | 763.3 | 30.19 | 766.8 | 36 | 1.7 | 79 | NW | 16 | 7.2 | ..... | 0 | 2ks | ..... | NW | Inap. | Inap. | Fair | F. Allison, M. A. |
| Hamilton, Ontario | 29.62 | 752.3 | 30.00 | 762.0 | 42.2 | 5.7 | 86 | E | ..... | ..... | 1 | 10cs | ..... | ..... | ..... | 0.17 | 4.3 | Cloudy | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.91 | 759.7 | 29.94 | 760.5 | 34 | 1.1 | 71 | NE | ..... | ..... | ..... | 0 | 1s | ..... | ..... | 0 | 0 | Fine | E. Weedon. |
| *Kingston, Ontario | 29.79 | 756.7 | 30.13 | 765.3 | 44 | 6.7 | 79 | NE | 4 | 1.8 | ..... | 8c | 0 | Calm | ..... | 0 | 0 | Fair | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.13 | 765.3 | 30.17 | 766.3 | 32.8 | 0.4 | ..... | NW | 6 | 2.7 | ..... | 2k | 0 | NW | ..... | 0 | 0 | Fair | C. H. Rigby. |
| *Montreal, Quebec | 30.03 | 762.7 | 30.23 | 767.8 | 38 | 3.3 | 86 | NE | 5 | 2.2 | ..... | 2k | Sm'c | ..... | ..... | 0 | 0 | Clear | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.27 | 743.4 | 29.96 | 761.0 | 46 | 7.8 | 69 | E | 24 | 10.7 | ..... | 2cs | 5ks | W | W | 0 | 0 | Fair | Rev. R. Mosley. |
| Peterboro, Ontario | 29.29 | 744.0 | 30.05 | 763.3 | 44.7 | 7.1 | 84 | S | ..... | ..... | ..... | 0 | 1s | ..... | ..... | 0 | 0 | Hazy | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.23 | 742.4 | 29.93 | 760.2 | 46 | 7.8 | 86 | NE | 7 | 3.1 | ..... | ..... | 10n | ..... | S | 0 | 0 | Threatening | H. Morgan. |
| Port Hastings, N. S | 30.15 | 765.8 | 30.20 | 767.1 | 34.6 | 1.4 | ..... | W | 12 | 5.4 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.22 | 742.2 | 29.86 | 758.4 | 52 | 11.1 | 69 | E | 16 | 7.2 | ..... | ..... | 10n | ..... | SE | Inap. | Inap. | Light rain | M. Payne. |
| *Quebec, Quebec | 29.96 | 761.0 | 30.29 | 769.4 | 34 | 1.1 | 76 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.67 | 753.6 | 30.14 | 765.5 | 40 | 4.4 | 82 | E | 10 | 4.5 | ..... | ..... | 8s | ..... | SE | 0 | 0 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 30.23 | 767.8 | 30.28 | 769.1 | 37 | 2.8 | 71 | N | 3 | 1.3 | ..... | 0 | .. | ..... | ..... | 0 | 0 | Clear | Dr. Gove. |
| St. John, N. B | 30.13 | 765.3 | 30.30 | 769.6 | 32 | 0.0 | 89 | N | 5 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.14 | 740.1 | 29.85 | 758.2 | 49 | 9.4 | 77 | SE | 15 | 6.7 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Cloudy | K. Stewart. |
| Stayner, Ontario | 29.17 | 740.9 | 29.95 | 760.7 | 46 | 7.8 | 77 | SE | 8 | 3.6 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | R. J. Cole. |
| Stratford, Ontario | 28.62 | 726.9 | 29.91 | 759.7 | 42.8 | 6.0 | 78 | SE | 9 | 4.0 | ..... | 0 | 10s | ..... | ..... | 0 | 0 | Overcast | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.15 | 765.8 | 30.18 | 766.6 | 37 | 2.8 | 80 | N | 6 | 2.7 | ..... | 10k | 0 | N | ..... | 0.02 | 0.5 | Fair | T. C. Hill. |
| *Toronto, Ontario | 29.61 | 752.1 | 30.00 | 762.0 | 43 | 6.1 | 79 | E | 12 | 5.4 | ..... | ..... | 10n | ..... | W | 0 | 0 | Cloudy | Magnetic Observatory. |
| Windsor, N. S | 30.15 | 765.8 | 30.25 | 768.3 | 33.0 | 0.6 | 85 | N | 14 | 6.3 | ..... | 10k | 0 | ..... | ..... | 0 | 0 | Fair | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 34.0 | 1.1 | 89 | NE | ..... | ..... | ..... | 2k | 4s | ..... | ..... | Inap. | Inap. | Fair | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrumental error and temperature. Inches. | BAROMETER. Corrected for instrumental error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0–10. | CLOUDS. Amount. Upper. 0–10 | CLOUDS. Amount. Low'r. 0–10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 30.00 | 762.0 | 30.23 | 767.8 | 48 | 8.9 | 63 | S | 12 | 5.4 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Alpena, Michigan | 29.15 | 740.4 | 29.79 | 756.7 | 41 | 5.0 | 82 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Atlantic City, New Jersey | 30.22 | 767.6 | 30.24 | 768.1 | 47 | 8.3 | 85 | E | 22 | 9.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Augusta, Georgia | 29.67 | 753.6 | 29.85 | 758.2 | 65 | 18.3 | 94 | SE | 13 | 5.8 | ..... | ..... | 10n | ..... | SE | 0.15 | 3.8 | Light rain | |
| Baltimore, Maryland | 30.13 | 765.3 | 30.18 | 766.6 | 51 | 10.6 | 72 | E | 8 | 3.6 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Threatening | |
| Barnegat, New Jersey | 30.22 | 767.6 | 30.25 | 768.3 | 46 | 7.8 | 85 | SE | 20 | 8.9 | ..... | 10ck | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Bismarck, Dakota | 27.67 | 702.8 | 29.53 | 750.0 | 37 | 2.8 | 71 | NW | 36 | 16.1 | ..... | ..... | 10s | ..... | NW | 0.71 | 18.0 | Cloudy | |
| Boise City, Idaho | 27.25 | 692.1 | 30.13 | 765.3 | 28 | — 2.2 | 67 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boston, Massachusetts | 30.14 | 765.5 | 30.30 | 769.6 | 41 | 5.0 | 74 | E | 8 | 3.6 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Brackettville, Texas | 28.42 | 721.9 | 29.41 | 747.0 | 59 | 15.0 | 70 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 28.12 | 714.2 | 29.03 | 738.1 | 46 | 7.8 | 100 | N | 13 | 5.8 | ..... | ..... | 10n | ..... | Calm | 0.84 | 21.1 | Light rain | |
| Brownsville, Texas | 29.59 | 749.3 | 29.56 | 750.8 | 71 | 21.7 | 85 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 29.21 | 741.9 | 29.99 | 755.4 | 52 | 11.1 | 54 | E | 6 | 2.7 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 65 | 18.3 | 49 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.98 | 761.5 | 30.24 | 768.1 | 47 | 8.3 | 69 | S | 1 | 0.4 | ..... | 2c | 0 | W | ..... | 0 | 0 | Fair | |
| Cairo, Illinois | 29.03 | 737.3 | 29.40 | 746.7 | 67 | 19.4 | 79 | S | 14 | 6.3 | ..... | 8k | 0 | S | ..... | 0.56 | 14.2 | Fair | |
| Camp Grant, Arizona | 25.03 | 635.8 | 29.83 | 757.7 | 52 | 11.1 | 42 | W | ..... | ..... | 1 | 0 | 2ks | ..... | N | 0 | 0 | Fair | |
| Camp Verde, Arizona | 26.57 | 674.9 | 30.06 | 763.5 | 54 | 12.2 | 61 | E | ..... | ..... | 1 | 0 | 8ks | ..... | NW | 0 | 0 | Fair | |
| Campo, California | 27.22 | 691.4 | 29.78 | 756.4 | 56 | 10.0 | 93 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Cape Hatteras, N. Carolina | 30.16 | 766.1 | 30.17 | 766.3 | 57 | 13.9 | 94 | E | 8 | 3.6 | ..... | 2k | 8s | Calm | Calm | 0 | 0 | Cloudy | |
| Cape Henry, Virginia | 30.16 | 766.1 | 30.18 | 766.6 | 53 | 11.7 | 73 | SE | 14 | 6.3 | ..... | 2cs | 8s | SW | S | 0 | 0 | Cloudy | |
| Cape Lookout, N. Carolina | 30.14 | 765.5 | 30.15 | 765.8 | 63 | 17.2 | 78 | SE | 14 | 6.3 | ..... | 10cs | 0 | W | ..... | 0 | 0 | Cloudy | |
| Cape May, New Jersey | 30.18 | 766.6 | 30.21 | 767.3 | 50 | 10.0 | 86 | E | 14 | 6.3 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Charleston, South Carolina | 29.97 | 761.2 | 30.04 | 763.0 | 67 | 19.4 | 89 | SE | 8 | 3.6 | ..... | ..... | 10n | ..... | S | 0.01 | 0.3 | Light rain | |
| Cheyenne, Wyoming | 23.70 | 602.0 | 29.64 | 752.8 | 23 | — 5.0 | 86 | N | 16 | 7.2 | ..... | 5cs | 0 | N | ..... | Inap. | Inap. | Fair | |
| Chicago, Illinois | 28.73 | 729.7 | 29.39 | 746.5 | 51 | 10.6 | 93 | SE | 8 | 3.6 | ..... | ..... | 10n | ..... | SE | 0.29 | 7.4 | Heavy rain | |
| Cincinnati, Ohio | 28.93 | 734.8 | 29.55 | 750.6 | 60 | 15.6 | 77 | SE | 11 | 4.9 | ..... | 9k | 0 | SW | ..... | 0.12 | 3.0 | Cloudy | |
| Cleveland, Ohio | 29.05 | 737.9 | 29.75 | 755.6 | 54 | 12.2 | 74 | SE | 12 | 5.4 | ..... | ..... | 10n | ..... | S | 0.03 | 0.8 | Light rain | |
| Concho, Texas | 27.65 | 702.3 | 29.26 | 743.2 | 54 | 12.2 | 73 | NW | ..... | ..... | 4 | 8k | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Corsicana, Texas | 28.90 | 734.0 | 29.34 | 745.2 | 64 | 17.8 | 68 | SW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0.41 | 10.4 | Clear | |
| Davenport, Iowa | 28.65 | 727.7 | 29.25 | 742.9 | 56 | 13.3 | 87 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | SE | 0.21 | 5.3 | Cloudy | |
| Deadwood, Dakota | 25.10 | 637.5 | ..... | ..... | 26 | — 3.3 | 88 | NE | 5 | 2.2 | ..... | ..... | 10s | ..... | NW | 0.50 | 12.7 | Cloudy | |
| Denison, Texas | 28.55 | 725.2 | 29.31 | 744.5 | 55 | 12.8 | 93 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.18 | 4.6 | Clear | |
| Denver, Colorado | 24.48 | 621.8 | 29.70 | 754.4 | 28 | — 2.2 | 77 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | W | 0.04 | 1.0 | Cloudy | |
| Detroit, Michigan | 29.05 | 737.9 | 29.70 | 754.4 | 53 | 11.7 | 86 | SE | 6 | 2.7 | ..... | ..... | 10n | ..... | SE | 0.15 | 3.8 | Heavy rain | |
| Dodge City, Kansas | 26.94 | 684.3 | 29.21 | 741.9 | 36 | 2.2 | 80 | NW | 28 | 12.5 | ..... | 0 | 0 | ..... | ..... | 0.42 | 10.7 | Clear | |
| Dubuque, Iowa | 28.58 | 725.9 | 29.24 | 742.7 | 55 | 12.8 | 87 | SE | 6 | 2.7 | ..... | ..... | 10n | ..... | SE | 0.59 | 15.0 | Light rain | |
| Duluth, Minnesota | 28.64 | 727.4 | 29.29 | 744.0 | 44 | 6.7 | 92 | NE | 30 | 13.4 | ..... | ..... | 10n | ..... | NE | 0.60 | 15.2 | Light rain | |
| Eagle Pass, Texas | 28.68 | 728.5 | 29.45 | 748.0 | 63 | 17.2 | 58 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 30.23 | 767.8 | 30.30 | 769.6 | 36 | 2.2 | 71 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 62 | 16.7 | 57 | W | ..... | ..... | 6 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.13 | 739.9 | 29.93 | 760.2 | 56 | 13.3 | 51 | SE | 16 | 7.2 | ..... | ..... | 10n | ..... | ..... | 0.01 | 0.3 | Light rain | |
| Escanaba, Michigan | 28.95 | 735.3 | 29.59 | 751.6 | 43 | 6.1 | 92 | E | 20 | 8.9 | ..... | ..... | 10n | ..... | E | 0.10 | 2.5 | Light rain | |
| Florence, Arizona | 28.19 | 716.0 | 29.79 | 756.7 | 65 | 18.3 | 26 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | 23.82 | 605.0 | 29.82 | 757.4 | 45 | 7.2 | 68 | NW | 7 | 3.1 | ..... | 0 | 5s | ..... | NW | 0 | 0 | Fair | |
| Fort Craig, New Mexico | 25.12 | 638.0 | ..... | ..... | 55 | 12.8 | 44 | NW | 8 | 3.6 | ..... | 5k | 0 | NW | ..... | 0 | 0 | Fair | |
| Fort Davis, Texas | 24.70 | 627.4 | 29.66 | 753.4 | 58 | 14.4 | 48 | W | 28 | 12.5 | ..... | 2k | 0 | N | ..... | 0 | 0 | Fair | |
| Fort Gibson, Indian Ter | 28.80 | 731.5 | 29.31 | 744.5 | 55 | 12.8 | 87 | W | 4 | 1.8 | ..... | 5k | 2s | SW | W | 0.10 | 2.5 | Fair | |
| Fort Griffin, Texas | 28.24 | 717.3 | 29.47 | 748.5 | 53 | 11.7 | 73 | N | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | |
| Fort St. Michael, Alaska | 29.70 | 754.4 | 29.74 | 755.4 | 11 | —11.7 | 100 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Fort Sill, Indian Territory | 28.24 | 717.3 | 29.31 | 744.5 | 51 | 10.6 | 78 | NW | 24 | 10.7 | ..... | 0 | 5s | ..... | W | 0 | 0 | Fair | |
| Galveston, Texas | 29.47 | 748.5 | 29.51 | 749.5 | 69 | 20.6 | 84 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | |
| Grand Haven, Michigan | 28.90 | 734.0 | 29.52 | 749.8 | 52 | 11.1 | 86 | SE | 16 | 7.2 | ..... | ..... | 10ks | ..... | SE | 0.07 | 1.8 | Cloudy | |
| Indianapolis, Indiana | 28.70 | 729.0 | 29.43 | 747.5 | 60 | 15.6 | 77 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | S | 0.03 | 0.8 | Cloudy | |
| Indianola, Texas | 29.51 | 749.5 | 29.53 | 750.0 | 72 | 22.2 | 80 | SW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.28 | 718.3 | 29.36 | 745.7 | 57 | 13.9 | 81 | NW | 20 | 8.9 | ..... | ..... | 10s | ..... | N | 0.14 | 3.6 | Cloudy | |
| Jacksonville, Florida | 29.90 | 759.4 | 29.92 | 760.0 | 73 | 22.8 | 76 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Keokuk, Iowa | 28.58 | 725.9 | 29.15 | 740.4 | 56 | 13.3 | 90 | SE | 11 | 4.9 | ..... | ..... | 10n | ..... | Calm | 0.09 | 2.3 | Light rain | |
| Key West, Florida | 29.88 | 758.9 | 29.91 | 759.7 | 77 | 25.0 | 86 | SE | 9 | 4.0 | ..... | 5cs | 2s | S | S | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 30.17 | 766.3 | 30.19 | 766.8 | 53 | 11.7 | 86 | E | 8 | 3.6 | ..... | ..... | 10ks | ..... | W | 0 | 0 | Cloudy | |
| Knoxville, Tennessee | 28.74 | 730.0 | 29.71 | 754.6 | 59 | 15.0 | 88 | NE | 1 | 0.4 | ..... | ..... | 10n | ..... | S | 0.52 | 13.2 | Light rain | |
| La Crosse, Wisconsin | 28.51 | 724.9 | 29.24 | 742.7 | 56 | 13.3 | 94 | S | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.31 | 7.9 | Light rain | |
| La Mesilla, New Mexico | 25.75 | 654.0 | 29.90 | 759.4 | 54 | 12.2 | 62 | SW | 12 | 5.4 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Laredo, Texas | 29.12 | 739.6 | 29.45 | 748.0 | 63 | 17.2 | 67 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 28.31 | 719.1 | 29.09 | 738.9 | 58 | 14.4 | 87 | S | 6 | 2.7 | ..... | ..... | 10ks | ..... | SW | 0.61 | 15.5 | Cloudy | |
| Los Angeles, California | 29.46 | 748.3 | 29.79 | 756.7 | 57 | 13.9 | 84 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | Calm | Inap | Inap. | Fair | |
| Louisville, Kentucky | 28.96 | 735.6 | 29.49 | 749.0 | 62 | 16.7 | 77 | SE | 16 | 7.2 | ..... | ..... | 10s | ..... | SW | 0.27 | 6.9 | Cloudy | |
| Lynchburg, Virginia | 29.38 | 746.2 | 30.06 | 763.5 | 56 | 13.3 | 62 | NE | 8 | 3.6 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Marquette, Michigan | 28.89 | 733.8 | 29.57 | 751.1 | 47 | 8.3 | 77 | SE | 12 | 5.4 | ..... | 5cs | 5s | S | Calm | 0 | 0 | Cloudy | |
| Mason, Texas | 27.87 | 707.9 | 29.53 | 750.0 | 65 | 18.3 | 35 | W | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Cloudy | |
| Memphis, Tennessee | 29.14 | 740.1 | 29.44 | 747.8 | 65 | 18.3 | 90 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 28.72 | 729.5 | 29.43 | 747.5 | 46 | 7.8 | 100 | SE | 17 | 7.6 | ..... | ..... | 10n | ..... | ..... | 1.13 | 28.7 | Clear | |
| Mobile, Alabama | 29.64 | 752.6 | 29.67 | 753.6 | 71 | 21.7 | 90 | SW | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0.06 | 1.5 | Light rain | |
| Montgomery, Alabama | 29.45 | 748.0 | 29.68 | 753.9 | 68.5 | 20.3 | 92 | SE | 5 | 2.2 | ..... | ..... | 10s | ..... | SW | 0.76 | 19.3 | Cloudy | |
| Morgantown, West Virginia | 28.81 | 731.8 | 29.83 | 757.7 | 60 | 15.6 | 49 | SE | 16 | 7.2 | ..... | ..... | 10s | ..... | SW | 0.68 | 17.3 | Cloudy | |
| Mt. Washington, N. H. | 23.91 | 607.3 | 30.27 | 768.8 | 31 | — 0.6 | 49 | E | 3 | 1.3 | ..... | ..... | 10s | ..... | S | 0.04 | 1.0 | Cloudy | |
| Nashville, Tennessee | 29.02 | 737.1 | 29.53 | 750.0 | 63 | 17.2 | 78 | SE | 16 | 7.2 | ..... | 0 | 10s | ..... | E | 0 | 0 | Fair | |
| New Haven, Connecticut | 30.18 | 766.6 | 30.30 | 769.6 | 49 | 9.4 | 71 | E | 3 | 1.3 | ..... | ..... | 10s | ..... | S | 1.05 | 26.7 | Threatening | |
| New London, Connecticut | 30.27 | 768.8 | 30.32 | 770.1 | 46 | 7.8 | 69 | E | 6 | 2.7 | ..... | 5c | Haze | Calm | Calm | 0 | 0 | Fair | |
| New Orleans, Louisiana | 29.55 | 750.6 | 29.61 | 752.1 | 68 | 20.0 | 90 | S | 8 | 3.6 | ..... | 8ck | 0 | E | ..... | 0 | 0 | Fair | |
| Newport, Rhode Island | 30.25 | 768.3 | 30.30 | 769.6 | 45 | 7.2 | 68 | NE | 6 | 2.7 | ..... | ..... | 10ks | ..... | S | 0.38 | 9.7 | Cloudy | |
| New York, New York | 30.09 | 764.3 | 30.28 | 769.1 | 46 | 7.8 | 77 | E | 10 | 4.5 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Norfolk, Virginia | 30.13 | 765.3 | 30.19 | 766.8 | 55 | 12.8 | 68 | SE | 7 | 3.1 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| North Platte, Nebraska | 26.59 | 675.4 | 29.13 | 739.9 | 34 | 1.1 | 79 | NW | 36 | 16.1 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Olympia, Washington Ter. | 30.17 | 766.3 | 30.21 | 767.3 | 32 | 0.0 | 89 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | NW | 0.14 | 3.6 | Light snow | |
| Omaha, Nebraska | 28.03 | 711.9 | 29.05 | 737.9 | 46 | 7.8 | 92 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Oswego, New York | 29.77 | 756.1 | 30.10 | 764.5 | 50 | 10.0 | 65 | S | 15 | 6.7 | ..... | ..... | 10n | ..... | NW | 1.17 | 29.7 | Light rain | |
| Pembina, Dakota | 28.51 | 724.1 | 29.34 | 745.0 | 40 | 4.4 | 100 | N | 9 | 4.0 | ..... | 8c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Philadelphia, Pennsylvania | 30.19 | 766.8 | 30.24 | 768.1 | 47 | 8.3 | 76 | E | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.59 | 15.0 | Light rain | |
| Phœnix, Arizona | 28.58 | 725.9 | 30.36 | 771.1 | 55 | 12.8 | 74 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.24 | 437.9 | 29.45 | 748.0 | — 4 | —20.6 | 100 | NW | 14 | 6.3 | ..... | ..... | 10n | ..... | Calm | 0.84 | 21.3 | Light snow | |
| Pioche, Nevada | 23.88 | 606.5 | 29.65 | 753.1 | 30 | — 1.1 | 52 | NW | 6 | 2.7 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Fair | |
| Pittsburg, Pennsylvania | 29.07 | 738.4 | 29.86 | 758.4 | 57 | 13.9 | 58 | SE | 7 | 3.1 | ..... | ..... | 10s | ..... | SW | 0.02 | 0.5 | Threatening | |
| Port Huron, Michigan | 29.08 | 738.6 | 29.72 | 754.9 | 54 | 12.2 | 55 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Threatening | |
| Portland, Maine | 30.26 | 768.6 | 30.31 | 769.9 | 45 | 7.2 | 68 | E | 4 | 1.8 | ..... | 8k | Haze | NE | ..... | 0 | 0 | Cloudy | |
| Portland, Oregon | 30.21 | 767.3 | 30.32 | 770.1 | 36 | 2.2 | 90 | SE | 2 | 0.9 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Prescott, Arizona | 24.51 | 622.5 | 29.87 | 758.7 | 48 | 8.9 | 63 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Punta Rassa, Florida | 29.93 | 760.2 | 29.95 | 760.7 | 77 | 25.0 | 82 | SE | 12 | 5.4 | ..... | 5ck | 0 | S | ..... | 0 | 0 | Fair | |

UNITED STATES SERIES.—CONTINUED

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Red Bluff, California | 29.51 | 749.5 | 29.86 | 758.4 | 57 | 13.9 | 25 | N | 28 | 12.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Rochester, New York | 29.37 | 746.0 | 29.98 | 761.5 | 50 | 10.0 | 65 | SE | 14 | 6.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Roseburg, Oregon | 29.67 | 753.6 | 30.27 | 768.8 | 35.5 | 1.9 | 90 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sacramento, California | 29.64 | 752.8 | 29.72 | 754.9 | 60 | 15.6 | 55 | NW | 28 | 12.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 28.73 | 729.7 | 29.27 | 743.4 | 60 | 15.6 | 88 | S | 16 | 7.2 | ..... | ..... | 10s | ..... | SW | 0.32 | 8.1 | Cloudy | |
| St. Marks, Florida | 29.76 | 755.9 | 29.78 | 756.4 | 70 | 21.1 | 90 | S | 25 | 11.2 | ..... | ..... | 10s | ..... | S | 0.25 | 6.3 | Cloudy | |
| St. Paul, Minnesota | 28.36 | 720.3 | 29.14 | 740.1 | 53 | 11.7 | 93 | SE | 20 | 8.9 | ..... | ..... | 10n | ..... | Calm | 0.88 | 22.4 | Light rain | |
| Salt Lake City, Utah | 25.50 | 647.7 | 29.83 | 757.7 | 35 | 1.7 | 61 | NW | 12 | 5.4 | ..... | 5kc | 0 | NW | ..... | 0 | 0 | Fair | |
| San Antonio, Texas | 28.79 | 731.3 | 29.35 | 745.5 | 68 | 14.4 | 88 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Diego, California | 29.76 | 755.9 | 29.83 | 757.7 | 68 | 14.4 | 94 | S | 7 | 3.1 | ..... | ..... | 10n | ..... | Calm | 0.09 | 2.3 | Light rain | |
| Sandusky, Ohio | 29.05 | 737.9 | 29.70 | 754.4 | 56 | 13.3 | 81 | SE | 14 | 6.3 | ..... | ..... | 10n | ..... | Calm | 0.19 | 4.8 | Light rain | |
| Sandy Hook, New Jersey | 30.23 | 767.8 | 30.27 | 768.8 | 46 | 7.8 | 77 | SE | 22 | 9.8 | ..... | 10cs | 0 | NW | ..... | 0 | 0 | Cloudy | |
| San Francisco, California | 29.70 | 754.4 | 29.77 | 756.1 | 55 | 12.8 | 74 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Santa Fé, New Mexico | 22.92 | 582.2 | 29.46 | 748.3 | 37 | 2.8 | 53 | NW | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 29.85 | 758.2 | 29.94 | 760.5 | 68 | 20.0 | 95 | S | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.01 | 0.3 | Heavy rain | |
| Shreveport, Louisiana | 29.18 | 741.2 | 29.39 | 746.5 | 67 | 19.4 | 74 | S | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0.33 | 8.4 | Clear | |
| Smithville, North Carolina | 30.08 | 764.0 | 30.12 | 765.0 | 64 | 17.8 | 83 | SE | 18 | 8.0 | ..... | 10cs | 0 | W | ..... | 0 | 0 | Cloudy | |
| Springfield, Massachusetts | 30.09 | 764.3 | 30.22 | 767.6 | 49 | 9.4 | 57 | SW | 1 | 0.4 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Stockton, Texas | 26.58 | 675.1 | 29.58 | 751.3 | 60 | 15.6 | 44 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Thatcher's Island, Mass | 30.23 | 767.8 | 30.29 | 769.4 | 43 | 6.1 | 75 | E | 12 | 5.4 | ..... | 6 | 2ks | ..... | NE | 0 | 0 | Fair | |
| Toledo, Ohio, | 28.97 | 735.8 | 29.62 | 752.3 | 55 | 12.8 | 93 | E | 8 | 3.6 | ..... | ..... | 10n | ..... | E | 0.08 | 2.0 | Light rain | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 55 | 12.8 | 73 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tybee Island, Georgia | 29.93 | 760.2 | 29.96 | 761.0 | 66 | 18.9 | 94 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Umatilla, Oregon | 29.92 | 760.0 | ..... | ..... | 30 | — 1.1 | 68 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.31 | 744.5 | 29.56 | 750.8 | 66 | 18.9 | 84 | S | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 2.38 | 60.5 | Clear | |
| Virginia City, Montana | 24.10 | 612.1 | 29.58 | 751.3 | 22 | — 5.6 | 86 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.01 | 0.3 | Light snow | |
| Visalia, California | 29.38 | 746.2 | 29.75 | 755.6 | 54 | 12.2 | 80 | S | 1 | 0.4 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Washington, D. C. | 30.08 | 764.0 | 30.19 | 766.8 | 53 | 11.7 | 67 | E | 3 | 1.3 | ..... | ..... | 10s;sm | ..... | W | 0 | 0 | Smoky | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 49 | 9.4 | 51 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 30.03 | 762.7 | 30.11 | 764.8 | 66 | 18.9 | 73 | SW | 9 | 4.0 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Winnemucca, Nevada | 25.65 | 651.5 | 30.01 | 762.2 | 27 | — 2.8 | 64 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wood's Holl, Mass. | 30.24 | 768.1 | 30.29 | 769.4 | 50 | 10.0 | 58 | E | 8 | 3.6 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear | |
| Yankton, Dakota | 27.87 | 707.9 | 29.10 | 739.1 | 42 | 5.6 | 91 | NW | 22 | 9.8 | ..... | ..... | 10n | ..... | Calm | 0.03 | 0.8 | Light rain | |
| Yuma, Arizona | 29.55 | 750.6 | 29.71 | 754.6 | 62 | 16.7 | 77 | SE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 30.22 | 767.6 | 30.28 | 769.1 | 15.0 | — 9.4 | 91 | NE | 7 | 3.1 | ..... | 3ck | 0 | NE | ..... | 0 | 0 | Fair | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 29.85 | 758.2 | 29.87 | 758.7 | 80 | 26.7 | 82 | SE | 7.2 | 3.2 | ..... | ..... | 8n | ..... | SE | 0 | 0 | Cloudy | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.11 | 764.8 | 30.12 | 765.0 | 82 | 27.8 | 91 | SE | 18 | 8.0 | ..... | 5c | 2s | SE | Calm | 0.78 | 19.8 | ..... | James Gall. |
| Navassa, W. I. | 29.89 | 759.2 | 29.97 | 761.2 | 82.5 | 28.1 | ..... | E | 18 | 8.0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | 29.99 | 761.7 | 29.99 | 761.7 | 84 | 28.9 | 79 | E | ..... | ..... | 3 | 3c | 4k | E | ..... | 0 | 0 | Fair | C. J. Hering. |
| Batavia, Dutch Guiana, S. A. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Medellin, Colombia, S. A. | 25.20 | 640.1 | ..... | ..... | 71.5 | 21.9 | 77 | Calm | ..... | ..... | 0 | 7cs | 1ks | ..... | ..... | 0 | 0 | ..... | Dr. H. Groot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Thomas Herran |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er —10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.75 | 755.6 | 59 | 15.0 | 57 | 13.9 | 75 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Pensacola, Fla. | 29.80 | 756.9 | 70 | 21.1 | 70 | 21.1 | 95 | W | 7 | 3.1 | ..... | ..... | 0 | ..... | ..... | 0.10 | 2.5 | ..... | ..... | Clear..... | |
| Navy Yard, Portsmouth, N.H. | 30.32 | 770.1 | 72 | 22.2 | 43 | 6.1 | 67 | NE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan | 30.10* | 764.5* | 62 | 16.7 | 59.8 | 15.4 | 88 | SW | ..... | ..... | 4 | ..... | 3c;ck | ..... | W | 0.06 | 1.5 | ..... | ..... | Clearing..... | |
| Adams. Panama | 29.97 | 761.2 | 82 | 27.8 | 82 | 27.8 | 81 | NNW | ..... | ..... | 0-1 | ..... | 5 | ..... | ..... | ..... | ..... | Smooth | ..... | Misty..... | |
| Alliance, N 42° 18′, E. 10° 34′ | 29.92‡ | 760.0‡ | ..... | ..... | 58 | 14.4 | 70 | NNE | ..... | ..... | 3 | ..... | 2 | ..... | S&W | ..... | ..... | None | ..... | Clear..... | |
| Ashuelot. Shanghai, China | 30.18 | 766.6 | 52 | 11.1 | 50 | 10.0 | 86 | NE | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Light rain... | |
| Canonicus, New Orleans, La. | 29.63 | 752.6 | 51 | 10.6 | 69 | 20.6 | 90 | SE | ..... | ..... | 2 | ..... | 7 | ..... | N&W | ..... | ..... | ..... | ..... | Cloudy..... | |
| Colorado. New York, N. Y. | 30.30‡ | 769.6‡ | ..... | ..... | 47 | 8.3 | 70 | SE | 11 | 4.9 | ..... | ..... | 8 | ..... | S | 0 | 0 | ..... | ..... | Hazy..... | |
| Constellation. N. 42° 14′ W. 49° 40′ | 29.54‡ | 750.3‡ | ..... | ..... | 42 | 5.6 | 100 | N | ..... | ..... | 8 | ..... | 10 | ..... | N | ..... | ..... | Very Heavy | N | Stormy..... | |
| Constitution, Havre, France | 29.80‡ | 756.9‡ | ..... | ..... | 53 | 11.7 | 86 | NNE | ..... | ..... | 1 | ..... | 7 | ..... | Calm | ..... | ..... | ..... | ..... | Cloudy..... | |
| Despatch, Constantinople, Turkey | 30.00‡ | 762.0‡ | ..... | ..... | 57 | 13.9 | 81 | NE | ..... | ..... | 2 | ..... | 8 | ..... | NE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Enterprise, Norfolk, Va | 30.21‡ | 767.3‡ | ..... | ..... | 53 | 11.7 | 86 | NW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Fair..... | |
| Franklin, Norfolk, Va. | 30.30 | 769.6 | 65 | 18.3 | 56 | 13.3 | 55 | SE | 6 | 2.7 | ..... | ..... | 5 | ..... | SE | 0.5 | 13. | ..... | ..... | Cloudy..... | |
| Gettysburg Valetta, Malta | 29.73‡ | 755.1‡ | ..... | ..... | 62 | 16.7 | ?? | N | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Hazy..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.04 | 763.0 | 75 | 23.9 | 74 | 23.3 | 76 | NE | ..... | ..... | 3 | ..... | 2 | ..... | NE | ..... | ..... | Smooth | ..... | Clear..... | |
| Hartford, Montevideo, Uraguay | 30.10 | 764.5 | 61 | 16.1 | 58 | 14.4 | 58 | SSW | 7.8 | 3.5 | ..... | ..... | 8 | ..... | SSW | 0 | 0 | Mod'ate | SW | Cloudy..... | |
| Marion, Volo Bay, Turkey | 29.94 | 760.5 | 66 | 18.9 | 65 | 18.3 | 73 | E | ..... | ..... | 1 | ..... | 10 | ..... | Calm | 0 | 0 | Smooth | ..... | Cloudy..... | |
| Michigan, Erie, Pa. | 29.30 | 744.2 | 65 | 18.3 | 53 | 11.7 | 80 | SSW | ..... | ..... | 6 | ..... | 10 | ..... | SSW | ..... | ..... | ..... | ..... | Raining..... | |
| Monocacy. Shanghai, China | 30.01‡ | 762.2‡ | ..... | ..... | 50 | 10.0 | 86 | ENE | ..... | ..... | 2 | ..... | 10 | ..... | E | ..... | ..... | ..... | ..... | Overcast..... | |
| New Hampshire, Port Royal, S. C. | 30.20 | 767.1 | 70 | 21.1 | 68 | 20.0 | 95 | SSE | 13 | 5.8 | ..... | ..... | 10 | ..... | SSE | ..... | ..... | ..... | ..... | Overcast..... | |
| Omaha, N. 20° 15′ W. 65° 35′ | 30.10* | 764.5* | 79 | 26.1 | 78 | 25.6 | 78 | NNE | 3 | 1.3 | ..... | ..... | 4 | ..... | NNE | 0 | 0 | Smooth | ..... | Bright..... | |
| Onward, Callao, Peru | 30.02† | 762.5† | ..... | ..... | 70 | 21.1 | 90 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, Pensacola, Fla. | 29.70‡ | 754.4‡ | ..... | ..... | 69 | 20.6 | 100 | SW | ..... | ..... | 2 | ..... | 8 | ..... | SW | ..... | ..... | ..... | ..... | Foggy ..... | |
| Palos, Shanghai, China | 30.23* | 767.8* | 58 | 14.4 | 49 | 9.4 | 93 | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | |
| Pensacola, Honolulu, H. I. | 30.25 | 768.3 | 75 | 23.9 | 71 | 21.7 | 71 | NE | 10 | 4.5 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | ..... | Pleasant..... | |
| Plymouth. Norfolk, Va. | 30.21‡ | 767.3‡ | ..... | ..... | 56 | 13.3 | 63 | E | ..... | ..... | 2 | ..... | 10 | ..... | W | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Powhatan, Norfolk, Va. | 30 21‡ | 767.3‡ | ..... | ..... | 56 | 13.3 | 94 | SE | 7.2 | 3.2 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Overcast..... | |
| Ranger. Amoy, China | 30.18* | 766.6* | ..... | ..... | 67.6 | 19.7 | 92 | E | ..... | ..... | 1-2 | ..... | 10 | ..... | Calm | ..... | ..... | Smooth | ..... | Foggy ..... | |
| Rio Bravo. Brownsville, Texas | 29.55 | 750.6 | 68 | 20.0 | 65 | 18.3 | 100 | SW | ..... | ..... | 0-1 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Cloudy..... | |
| Santee. Annapolis, Md | 30.17‡ | 766.3‡ | ..... | ..... | 52 | 11.1 | 79 | SE | ..... | ..... | 3 | ..... | 10 | ..... | WNW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Saratoga, Washington, D. C. | 30.08* | 764.0* | ..... | ..... | 57 | 13.9 | 100 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Cloudy..... | |
| St. Louis, League Island, Pa | 30.15 | 765.8 | 66 | 18.9 | 49 | 9.4 | 100 | E | 11 | 4.9 | ..... | ..... | 8 | ..... | WNW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Supply, Havre, France | 29.90 | 759.4 | 53 | 11.7 | 54 | 12.2 | 49 | ESE | ..... | ..... | 3 | ..... | 8 | ..... | E | ..... | ..... | ..... | ..... | Cloudy..... | |
| Swatara, Aspinwall | 29.94 | 760.5 | 82 | 27.8 | 81 | 27.2 | 96 | SSW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Tennessee, N. 11° 12′ E. 55° 54′ | 29.94* | 760.5* | 89 | 30.0 | 85 | 29.4 | 75 | Calm | 0 | 0 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Smooth | ..... | Hazy..... | |
| Trenton, Villefranche, France | 29.89‡ | 759.2‡ | ..... | ..... | 62 | 16.7 | 88 | ENE | ..... | ..... | 0-1 | ..... | 8 | ..... | NE | 0.4 | 10. | Smooth | ..... | Cloudy..... | |
| Tuscarora, N. 16° 50′, W. 100° 36′ | 29.62 | 752.3 | 78 | 25.6 | 77 | 25.0 | 73 | NW | ..... | ..... | 4 | ..... | 2 | ..... | NW | ..... | ..... | Mod'ate | NW | Clear..... | |
| Vandalia, Villefranche, France | 29.79‡ | 756.7‡ | ..... | ..... | 60 | 15.6 | 60 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | Calm | ..... | ..... | ..... | ..... | Cloudy..... | |
| Wabash. Boston, Mass | 30.29‡ | 769.4‡ | ..... | ..... | 50 | 10.0 | 79 | SE | 5 | 2.2 | ..... | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Cloudy..... | |
| Wyoming, N. 39° 50′, W. 62° 53′ | 30.22* | 767.6* | ..... | ..... | 46 | 7.8 | 69 | NE | ..... | ..... | 6 | ..... | 10 | ..... | NE | ..... | ..... | Rough | NE | Squally..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
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| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Amount. | | Direction. | | | | | |
| | | | | | | | | | | Force. | Upper | Lower | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | From— | From— | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Peking, N. 37° 27′, W. 161° 32′ | | | 30.47† | 773.9† | 52 | 11.1 | 93 | NNW | 8.0 | 3.6 | | 10 | | Calm | Smooth | Calm | Misty | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, N. 34° 32′, E. 157° 38′ | | | | | 67 | 13.9 | | E | | | 6 | 4 | | E | Smooth | ESE | D. clouds | Capt. Maury. |
| S. S. Colima, N. 20° 42′, W. 107° 11′ | | | 29.90† | 759.4† | 71 | 21.7 | 75 | NW | | | 3 | 6 | | WNW | Small | WNW | D. clouds | Capt. Searle. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Granada | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic, N. 41° 55′, W. 52° 48′ | | | 29.62* | 752.3* | | | | NE | | | 6 | | 9 | | NE | Heavy | NE | Overcast | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. W. H. Thompson. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic, N. 41° 26′, W. 50° 31′ | | | 29.36† | 745.7† | 48 | 8.9 | ?? | NNE | | | 6 | | 10 | | NNE | High | NE | Squally | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. *Aneroid; corrected for elevation; instrumental error not known. †Aneroid.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, N. 38° 36′, W. 127° 39′ | | | 30.18* | 766.6* | | | | NNW | | | 6 | | Heavy | | NNW | Mod'ate | NNW | Squally | Capt. John Metcalf. |
| S. S. Gaelic, Hong-Kong, China | | | 30.08† | 764.0† | 75 | 23.9 | 86 | SE | | | 2 | | | | | | | Misty | Capt. W. H. Kidley |
| S. S. Oceanic, N. 34° 53′, E. 140° 40′ | | | 30.00 | 762.0 | 62 | 16.7 | 88 | S | | | 6 | | 6 | | W | Mod'ate | S | D. clouds | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg, N. 26° 12′, W. 70° 09′ | | | 30.08 | 764.0 | 76.6 | 24.7 | 73 | ESE | | | 5 | | clr | | E | Light sea. | ESE | D. clouds | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | Character | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, N. 44° 28′, W. 45° 59′ | | | 29.05* | 737.9* | 52 | 11.1 | 100 | NE | | | 0 | | 9 | | NNE | Heavy | NE | Cloudy | Captain Sargent. |
| S. S. Ohio, Philadelphia, Pa. | | | 30.20 | 767.1 | 48 | 8.9 | 92 | ESE | | | 2 | | 10 | | Calm | | | Clear? | Captain Morrison. |
| S. S. Pennsylvania, N. 41° 06′, W. 57° 30′ | | | 29.85* | 758.2* | 48 | 8.9 | 100 | N | | | 6 | | 9 | | N | Heavy | NE | Cloudy | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Corrected for temperature and elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland, N. 43° 15′, W. 54° 52′ | | | 29.77* | 756.1* | | | | N | 50 | 22.4 | | 4 | | N | Heavy | NNE | D. clouds | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

*Aneroid; regulated to standard at Antwerp.

**ALLAN LINE MARINE SERIES.**

Furnished by the coöperation of A. Schumacher, & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| S. S. Scandinavian, Halifax, N. S. | | | 30.22 | 767.6 | 37 | 2.8 | | N | | | 5 | | 2 | | N | | | D. clouds | Capt. W. Richardson. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.)**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, N. 40° 34′, W. 72° 40′ | | | 29.19 | 741.4 | 58 | 14.4 | 64 | Calm | 0 | 0 | | | Haze | | | Swell | SE | Hazy | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.88 | 758.9 | 21 | — 6.1 | 93 | W | 19.6 | 8.8 | | | 10s | | | | | Cloudy | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg'd,) Chief Signal Officer, U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 10, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.11 | 764.9 | 65.5 | 18.6 | 82 | NE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Dr. Ollive. |
| Nemours | ..... | ..... | 30.09 | 764.2 | 68 0 | 20.0 | 64 | N | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Michel. |
| Algiers | ..... | ..... | 29.94 | 760.5 | 67.3 | 19.6 | 63 | W | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0.039 | 1.0 | Fair | Towiliere. |
| La Calle | ..... | ..... | 29.93 | 760.2 | 60.1 | 15.6 | 84 | NNW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 0 354 | 9.0 | Very cloudy | Boulangeot. |
| Tunis | ..... | ..... | 29.93 | 760.3 | 61.3 | 16.3 | 87 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.228 | 5.8 | Covered | Jacques. |
| Sfax | ..... | ..... | 29.92 | 760.0 | 68.0 | 20.0 | ..... | W | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Gau. |
| Saida | ..... | ..... | 30.11 | 764 7 | 59.7 | 15.4 | ..... | WNW | ..... | ..... | 5 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair | Herbin. |
| Tebessa | ..... | ..... | 29.91 | 759.7 | ..... | ..... | ..... | SW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Watrin. |
| Geriville | ..... | ..... | 30.10 | 764.6 | 64.0 | 17.8 | 82 | NW | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0 | 0 | Very cloudy | Lemaitot. |
| Laghouat | ..... | ..... | 30.14 | 765.6 | 65.8 | 18.8 | 39 | S | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Bertrand. |
| Biskra | ..... | ..... | 29.98 | 761.5 | 79.7 | 26.5 | 29 | NW | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.43 | 747.4 | 29.98 | 761.4 | 55.0 | 12 8 | 39 | NE | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29 31 | 744.4 | 30.10 | 764.5 | 39 6 | 4.2 | 90 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.322 | 8.2 | ..... | Dr. Wierzbiski. |
| Eperies | 29.10 | 739.1 | 29.99 | 761 7 | 47 8 | 8.8 | 55 | N | ..... | ..... | 1 | ..... | 38 | ..... | ..... | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.74 | 730.1 | 29.99 | 761 8 | 55.4 | 13.0 | 47 | SW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.51 | 724.2 | 29.94 | 760.5 | 49.3 | 9.6 | 65 | ESE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Rainy | Prof. Reissenberg |
| Kremsmünster | 28.63 | 727.1 | 29.97 | 761.3 | 50 7 | 10.4 | 36 | E | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner |
| Lemberg | 29.01 | 736.9 | 30.02 | 762.5 | 45.7 | 7.6 | 80 | W | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Dr. T. Stanecki. |
| Pola | 29.77 | 756.2 | 29.88 | 759.0 | 58.6 | 14.8 | 49 | WNW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | 29 53 | 750.1 | 30.03 | 762.8 | 57.2 | 14.0 | 57 | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.67 | 753.7 | 29.95 | 760.8 | 51.8 | 11.0 | 61 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.004 | 0.10 | ..... | Karl Stancel. |
| Trieste | 29.82 | 757.3 | 29.92 | 759.9 | 61.3 | 16.3 | 27 | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Fair | P. Busin. |
| Vienna | 29.29 | 743.9 | 30.00 | 762.0 | 57.2 | 14 0 | 32 | S | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met.Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.48 | 723.4 | 29.98 | 761.6 | 53.4 | 11.9 | 42 | SE | ..... | ..... | 5 | ..... | 8 | ..... | ..... | 0 | 0 | Solar halo | Prof. M. Passau., |
| Brussels | 29.78 | 756.3 | 29.98 | 761.4 | 55.8 | 13.2 | 51 | ESE | ..... | ..... | 3 | 9 | ..... | ..... | ..... | 0 | 0 | Solar halo | Royal Observatory. |
| Furnes | 29.94 | 760.4 | 29.96 | 761.0 | 59.5 | 15.3 | 46 | ESE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | M. E. de Cae. |
| Maeseyck | 29.93 | 760.2 | 30.06 | 763.4 | 55.2 | 12.9 | 49 | E | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 118 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

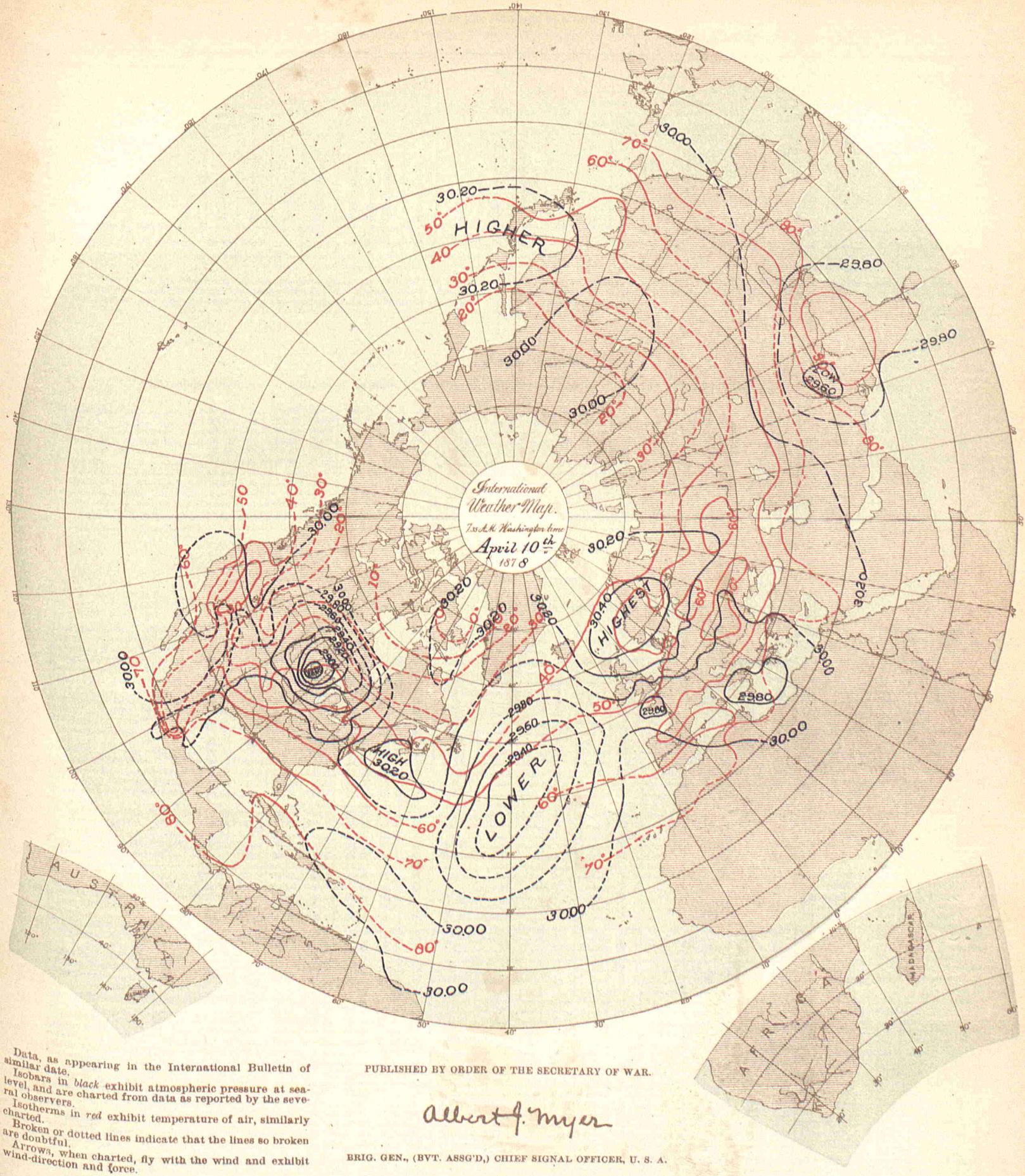
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.23 | 767.8 | 30.33 | 770.4 | 42.9 | 6.1 | ..... | ESE | 16 | 7.2 | ..... | ..... | 9 | ..... | ..... | 0.025 | 0.63 | Overcast..... | W. B. swell. |
| Ardrossan | 30.13 | 765.3 | 30.15 | 765.8 | 47 | 8.3 | ..... | E | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.10 | 764.5 | 43.4 | 6.3 | ..... | ENE | 12 | 5.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.02 | 762.5 | 46.8 | 8.2 | ..... | ENE | 23 | 10.3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 30.01 | 762.2 | 45.4 | 7.4 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | J. L. E. Dreyer. |
| Bradford, Yorkshire | 29.99 | 761.8 | 29.99 | 761.7 | 46.1 | 7.8 | ..... | NE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.04 | 1.0 | Overcast..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.97 | 761.2 | 30.00 | 762.0 | 82.5 | 28.1 | ..... | NE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.97 | 761.2 | 56.0 | 13.3 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast..... | H. Todd. [H. C. |
| Cardington | ..... | ..... | 29.96 | 761.0 | 53.0 | 11.7 | ..... | SE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John McLaren. |
| Chatham, School M. E. | 29.81 | 757.2 | 29.94 | 760.5 | 47.2 | 8.4 | ..... | NE | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.57 | 725.7 | 30.00 | 762.0 | 46.0 | 7.8 | ..... | NE | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | Showery..... | Alexander Watt. |
| Donaghadee | 30.07 | 763.8 | 30.10 | 764.5 | 46 | 7.8 | ..... | ESE | ..... | ..... | 5 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 29.89 | 759.2 | 29.92 | 760 0 | 49 | 9 4 | ..... | ENE | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | ½ clouded... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.98 | 761.5 | 49.6 | 9.8 | ..... | E | 6.8 | 3.0 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds... | Thomas Mackereth. |
| Falmouth, Observatory | 29.57 | 751.1 | 29.80 | 756.9 | 48.3 | 9.1 | ..... | NNE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | The Staff. |
| Fort Napier, (Natal) | 27.70 | 703.6 | 29.91 | 759.7 | 87.0 | 30.6 | ..... | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.69 | 754.1 | 29.92 | 760.0 | 88 | 31.1 | ..... | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's College | ..... | ..... | 29.96 | 761.0 | 47 | 8.3 | ..... | ENE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.09 | 764.3 | 30.14 | 765.5 | 69.0 | 20.6 | ..... | W | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Corpl. Wm. Allen, A. H. C. |
| Glasgow, Observatory | 29.96 | 761.0 | 30.17 | 766.3 | 45.3 | 7.4 | ..... | ENE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | D. G. Maclean. |
| Great Yarmouth | 30.03 | 762.7 | 30.04 | 763.0 | 46 | 7.8 | ..... | E | ..... | ..... | 5 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.75 | 755.6 | 29.92 | 760.0 | 47.9 | 8.8 | ..... | E | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Thin cloud.. | The Staff, for G. B. Airy. |
| Guernsey | 29.52 | 749.8 | 29.74 | 755.4 | 50 | 10.0 | ..... | SSE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling..... | Dr. S. E. Hoskins, F. R. S. |
| Helston | ..... | ..... | 29.80 | 756.9 | 52 | 11.1 | ..... | NE | ..... | ..... | 2 | ..... | 4c | ..... | ..... | 0.12 | 3.0 | Fine..... | M. P. Moyle. |
| Holyhead | 29.94 | 760.5 | 29.99 | 761.7 | 48 | 8.9 | ..... | ENE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Tilston. |
| Jersey | 29.49 | 749.0 | 29.79 | 756.7 | 49.0 | 9.4 | ..... | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | Blank | Blank | Foggy ..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 29.91 | 759.7 | 47.8 | 8.8 | ..... | E | 31 | 13.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Hazy..... | The Staff. |
| Kingstown | 29.99 | 761.7 | 30.02 | 762.5 | 48 | 8.9 | ..... | E | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.98 | 761.5 | 51.7 | 10.9 | ..... | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Wm. J. Harrison, F. G. S. |
| Malta, (Mediterranean) | 29.68 | 753.9 | 29.75 | 755.6 | 62.0 | 16.7 | ..... | W | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | Sgt. Fred. Travis, A. H. |
| Nairn | 30.18 | 766.6 | 30.28 | 769.1 | 48 | 8.9 | ..... | SE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 29.98 | 761.5 | 79.2 | 26.2 | ..... | SE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 29.83 | 757.7 | 30.02 | 762.5 | 50.8 | 10.4 | ..... | ENE | ..... | ..... | 5 | ..... | 10k;d | ..... | E | 0 | 0 | Overcast..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.43 | 747.5 | 29.96 | 761.0 | 48.5 | 9.2 | ..... | E | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.89 | 759.2 | 51 | 10.6 | ..... | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Mr. Lucas. |
| Plymouth | 29.69 | 754.1 | 29.76 | 755.9 | 46.8 | 8.2 | ..... | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Merrifield. |
| Roche's Point | 29.91 | 759.7 | 29.96 | 761.0 | 49 | 9.4 | ..... | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Dull ..... | W. Kennedy. |
| Saint Ann's Head | 29.70 | 754.4 | 29.87 | 758.7 | 46 | 7.8 | ..... | ENE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | John C. Walker. |
| Sandwick Manse, (Orkneys. | ..... | ..... | 30.38 | 771.6 | 45.9 | 7.7 | ..... | E | 24 | 10.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 29.89 | 759.2 | 77.0 | 25.0 | ..... | SSE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Hazy..... | Sergt. W. H. Lyne. |
| Sheffield | 29.79 | 756 7 | 30.08 | 764.0 | 50.0 | 10.0 | ..... | NE | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0 | 0 | Overcast..... | W. F. Cooper. |
| Silloth Rectory | 30.08 | 764.0 | 30.11 | 764.8 | 49.2 | 9.6 | 63 | SE | ..... | ..... | 5 | ..... | 4 | ..... | ..... | 0 | 0 | D. clouds..... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.67 | 753.6 | 30.07 | 763.8 | 45.4 | 7.4 | ..... | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Rev. S. J. Perry. |
| Stornoway, Lewis C., (Hebr.) | ..... | ..... | 30.24 | 768.1 | 49 | 9.4 | ..... | E | ..... | ..... | 6 | ..... | 2 | ..... | ..... | ..... | ..... | ¾ clouded... | John Sutherland. |
| Stratfield Turgiss | 29.67 | 753.6 | 29.89 | 759.2 | 49.4 | 9.7 | ..... | E | ..... | ..... | 1–2 | ..... | 10 | ..... | ..... | ..... | ..... | Squally..... | Rev. C. H. Griffith, F. M. |
| Thurso | ..... | ..... | 30.34 | 770.6 | 45 | 7.2 | ..... | ESE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 29.83 | 757.7 | 50 | 10.0 | ..... | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 29.96 | 761.0 | 48.6 | 9.2 | ..... | ENE | 20 | 8.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.94 | 760.5 | 63.0 | 17.2 | 81 | S | ..... | ..... | 1 | ..... | 6k | ..... | ..... | 0 | 0 | Sultry..... | Francis Abbott, F. R. A. S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.88 | 758.9 | 30.07 | 763.8 | 76.3 | 24.6 | 60 | ESE | 16.5 | 7.4 | ..... | ..... | 10 | ..... | SE | 0 | 0 | Squally ..... | C. Meldrum. |
| Melbourne, Observatory | 30.28 | 769.1 | 30.37 | 771.4 | 61.0 | 16.1 | 96 | W | 2 | 0.9 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | Heavy dew. | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft, or 670.6 m.

| Marine Series. Vessels. | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|
| S. S. Algeria | ..... | ..... | ..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | Capt. J. E. Moutand. |
| Ship Camperdown | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S, Hibernia | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | Capt. C. C. Prehn. [R. |
| S. S. Peruvian | ..... | ..... | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire, N. 51° 0′ W. 11° 45′ | 4 | E | D. clouds..... | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.22 | 666.0 | | | 73.4 | 23.0 | 91 | E | | | 1 | | 10s;hz | | | Inap. | Inap. | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.24 | 768.2 | 30.29 | 769.4 | 50.4 | 10.2 | 68 | SE | | | 2 | | 7 | | | | | | |
| Fanöe | 30.25 | 768.8 | 30.27 | 768.8 | 56.8 | 13.8 | 67 | E | | | 6 | | 1 | | | | | | |
| Godthaab, (Greenland) | 30.06 | 763.5 | 30.10 | 764.6 | 29.1 | — 1.6 | 74 | SE | | | 4 | | 7 | | | | | | |
| Stykkisholm, (Iceland) | 29.97 | 761.1 | 30.01 | 762.2 | 34.6 | 1.1 | 100 | Calm | | | 0 | | 10 | | | | | | Raining |
| Thorshavn, (Faröe) | 30.43 | 772.9 | 30.47 | 773.8 | 48.2 | 9.0 | 84 | SE | | | 2 | | 2 | | | | | | |
| Vestervig | 30.17 | 766.4 | 30.34 | 770.7 | 52.9 | 11.6 | 76 | ENE | | | 6 | | 0 | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.36 | 745.8 | 29.91 | 759.8 | 51.8 | 11 | 95 | SW | | | 1 | | 10 | | | 0.110 | 2.8 | Covered | Collignon, Director. |
| Amiens, Normal School | | | | | | | | | | | | | | | | | | | Bonvarne, Director. |
| Avignon, Normal School | 29.85 | 758.2 | 29.93 | 760.2 | 64.8 | 18.2 | 46 | SE | | | 1 | | 5 | | WNW | 0 | 0 | Cloudy | Mr. Giraud, Director |
| Bar-sur-Seine | 29.35 | 745.5 | 29.94 | 760.4 | 58.6 | 14.8 | 61 | SE | | | 2 | | 8km | | SE | Inap | Inap. | Very cloudy | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 56.5 | 13.6 | 57 | SSE | | | 2 | | 10 | | SSE | 0 | 0 | Covered | Normal School. |
| Besançon | 29.06 | 738.2 | 29.96 | 760.9 | 55.0 | 12.8 | 79 | ENE | | | 2 | | 8 | | NE | 0.12 | 3. | Very cloudy | Normal School. |
| Bourg-en-Bresse | 29.03 | 737.4 | 29.95 | 760.8 | 62.6 | 17 | 70 | S | | | 4 | | 8cn | | SE | 0 | 0 | Very cloudy | Normal School. |
| Bourges, Normal School | 29.32 | 744.8 | 29.87 | 758.7 | 56.5 | 13.6 | 66 | E | | | 2 | | 10 | | E | 0.59 | 15. | Covered | A. Wagner, Director. |
| Brest, Naval Observatory | 29.48 | 748.7 | 29.70 | 754.3 | 57.0 | 13.9 | 82 | W | | | 1 | | 9 | | W | 0.217 | 5.50 | Misty | The Staff. |
| Carcassonne, Normal School | 29.56 | 750.8 | 29.97 | 761.1 | 63.0 | 17.2 | 80 | W | | | 2 | | 2 | | W | 0 | 0 | Slightly cl'dy | Vateau, Director. |
| Caen | 29.71 | 754.7 | 29.79 | 756.6 | 53.6 | 12 | 87 | SSE | | | 1 | | 8 | | SE | 0 | 0 | Very cloudy | Normal School. |
| Chartres, Normal School | 29.21 | 741.9 | 29.77 | 756.2 | 55.2 | 12.9 | 93 | NE | | | 2 | | 10 | | NE | 0.012 | 0.3 | Covered | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.59 | 751.5 | 29.90 | 759.4 | 62.2 | 16.8 | 88 | SSE | | | 3 | | 5ck | | | 0 | 0 | Cloudy | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.52 | 724.5 | 29.85 | 758.2 | 61.9 | 16.6 | 61 | SW | | | 2 | | 10 | | SW | 0.146 | 3.7 | Covered | Alluard, Director. |
| Commercy, Normal School | 29.08 | 738.7 | 29.96 | 761.0 | 55.4 | 13 | 88 | E | | | 4 | | 2 | | E | 0 | 0 | Slightly cl'dy | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.83 | 732.3 | 29.97 | 761.3 | 63.5 | 17.5 | 43 | W | | | 2 | | 8 | | W | 0 | 0 | ¾ Covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 29.59 | 751.6 | 29.80 | 757.0 | 55.0 | 12.8 | 90 | E | | | 2 | | 10 | | | 0.315 | 8.0 | Covered | Mouillot, Director. |
| Le Mans, Normal School | 29.50 | 749.3 | 29.81 | 757.1 | 56.5 | 13.6 | 93 | SW | | | 2 | | 8 | | SW | 0.059 | 1.5 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.98 | 736.2 | 29.89 | 759.2 | 59.4 | 15.2 | 82 | W | | | 1 | | 8 | | | 0 | 0 | Very cloudy | Voudez, Director. |
| Lorient, Naval Observatory | 29.69 | 754.0 | 29.78 | 756.5 | 56.8 | 13.8 | 86 | SSE | | | 1 | | 10 | | | 0.213 | 5.4 | Covered | T. Carré, Director. |
| Mâcon, Normal School | 29.22 | 742.1 | 29.86 | 758.4 | 58.3 | 14.6 | 84 | Calm | | | 0 | | 10 | | | 0.20 | 5. | Covered | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | 28.91 | 734.3 | 29.95 | 760.6 | 58.6 | 14.8 | 41 | E | | | 1 | | 2 | | | 0 | 0 | Slightly cl'dy | Normal School. |
| Nismes, Normal School | 29.74 | 755.5 | 29.94 | 760.6 | 66.9 | 19.4 | 54 | S | | | 4 | | 2 | | N | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Orleans, Normal School | 29.42 | 747.2 | 29.89 | 759.9 | 58.1 | 14.5 | 84 | SE | | | 2 | | 10 | | | 0.43 | 11. | Covered | Bernard, Director. |
| Paris, Observatory | 29.63 | 752.6 | 29.87 | 758.6 | 58.8 | 14.9 | 58 | ESE | | | 2 | | 6 | | SE | 0 | 0 | Cloudy | National Observatory. |
| Privas | 28.88 | 733.6 | 29.94 | 760.4 | 59.0 | 15 | 76 | NW | | | 2 | | 5 | | NW | 0 | 0 | Cloudy | Normal School |
| Puy de Dome (Summit) | | | | | | | | | | | | | | | | | | | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.82 | 757.3 | 29.85 | 758.1 | 58.3 | 14.6 | 60 | SW | | | 5 | | 10 | | SW | 0.08 | 2. | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.78 | 756.3 | 29.86 | 758.5 | 55.4 | 13.0 | 59 | SE | | | 3 | | 10 | | SE | 0 | 0 | Covered | F. Lucard, Director. |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | M. H. Hercouet. |
| Tarbes, Normal School | 28.91 | 734.4 | 29.97 | 761.3 | 64.4 | 18 | 62 | W | | | 2 | | 10 | | | 0 | 0 | Covered | T. Hugues, Director. |
| Villefranche | 29.20 | 741.6 | 29.89 | 759.2 | 66.2 | 19 | 89 | NNW | | | 1 | | 8 | | S | 0.04 | 1. | Very cloudy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.80 | 756.9 | 29.83 | 757.6 | 77.4 | 25.2 | | | | | | | | | | 0 | 0 | | L'Abbé Marchési. |
| Lyons | | | 29.93 | 760.3 | 64.4 | 18.0 | | | | | | | 8 | | | 0 | 0 | | M. Jeys. |
| Marseilles, Observatory | | | 29.91 | 759.8 | 66.0 | 18.9 | 47 | WSW | | | 1 | | 5 | | | 0 | 0 | Cloudy | The Staff. |
| Mont-Louis | 24.78 | 629.5 | 30.10 | 764.5 | 44.8 | 7.1 | 74 | E | 13.0 | 5.83 | | | 5 | | | 0.413 | 10.5 | | Mr. Falguère. |
| Nice | | | 29.93 | 760.1 | 64.4 | 18.0 | 76 | W | | | 2 | | 2 | | | 0 | 0 | Clear | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.58 | 751.4 | 29.86 | 758.4 | 59.0 | 15.0 | 61 | SE | | | 3 | | 9 | | S | Inap. | Inap. | | Marié Davy, Director |
| Perpignan | | | 29.98 | 761.4 | 57.7 | 14.3 | 75 | NE | 5.6 | 2.50 | | | 5 | | NW | Inap. | Inap. | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.80 | 568.8 | | | 42 1 | 5.6 | | E | | | 1 | | 10 | | | 0.594 | 15.1 | Snowy | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.71 | 754.6 | 29.87 | 758.8 | 63.0 | 17.2 | 55 | SE | | | 2 | | 7 | | SSE | 0.138 | 3 5 | Raining | E. Renou. |
| Toulouse, Observatory | 29.26 | 743.2 | 29.98 | 761.5 | 59.5 | 15.3 | 92 | W | | | 1 | | 8 | | | 0.187 | 4.75 | Raining | The Staff. |
| Tours | 29.62 | 752.4 | 29.82 | 757.4 | 57.9 | 14.4 | 52 | SW | | | 1 | | 10 | | SSW | 0.047 | 1.2 | | C. Marquet. |
| Versailles, (near Paris) | | | 29.87 | 758.7 | 57.6 | 14.2 | 61 | SE | | | 3 | | 10 | | | 0 | 0 | Covered | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.07 | 763.6 | 30.09 | 764.2 | 49.5 | 9.7 | 91 | ESE | 8.1 | 3.6 | | | 10km | | | 0.327 | 8.3 | Covered | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er (1–10 | Clouds. Amount. Low'r (0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 29.98 | 761.6 | 30.16 | 766.0 | 59.4 | 15.2 | 54 | E | | | 1 | | 3 | | | 0.008 | 0.2 | Thunder-storm.. | Prof. Arndt. |
| Breslau | 29.55 | 750.5 | 30.08 | 764.0 | 52.3 | 11.3 | 77 | ESE | | | 2 | | 9 | | | 0.351 | 8.93 | | Royal University Obs'y |
| Carlsruhe | 29.57 | 751.1 | 29.00 | 761.9 | 56.8 | 13.8 | 48 | NE | | | 2 | | 0 | | | 0 | 0 | | Albert Senz. |
| Cassel | 29.57 | 751.0 | 30.18 | 766.5 | 54.7 | 12.6 | 72 | ENE | | | 2 | | 1 | ENE | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.89 | 759.1 | 30.05 | 763.2 | 60.6 | 15.9 | 34 | E | | | 5 | | 0 | | | 0 | 0 | | Director Lose. |
| Emden | 30.20 | 767.0 | 30.23 | 767.9 | 52.9 | 11.6 | 80 | NNE | | | 1 | | 6 | | | 0 | 0 | | Prof. Prestel. |
| Frankfort on the Main | 29.72 | 754.9 | 30.08 | 764.1 | 58.1 | 14.5 | 22 | ENE | | | 3 | | 0 | | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 28.54 | 724.8 | 29.98 | 761.5 | 49.3 | 9.6 | 63 | WSW | | | 4 | | 3 | W | | | | Thunder-storm.. | M. Wilhelm. |
| Hamburg | 30.15 | 765.7 | 30.22 | 767.5 | 52.9 | 11.6 | 77 | NE | | | 3 | | 10ks | | | 0 | 0 | Light fog | Captain F. Hegemann. |
| Kiel | 30.24 | 768.1 | 30.26 | 768.6 | 49.1 | 9.5 | 74 | E | | | 4 | | 0 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 30.11 | 764.9 | 30.20 | 767.0 | 61.2 | 16.2 | 43 | NE | | | 2 | | 2 | | | 0 | 0 | | Prof. E Luther |
| Köslin | | | 30.15 | 765.9 | 58.6 | 14.8 | | NE | | | 4 | | 2 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.74 | 755.4 | 30.17 | 766.3 | 45.7 | 7.6 | 91 | NNW | | | 1 | | 10 | | | 0 | 0 | | Prof. Bruhns. |
| Memel, Naval School | 30.21 | 767.4 | 30.26 | 768.6 | 61.7 | 16.5 | 42 | NE | | | 4 | | 3s | | | | | D. clouds | Reinbrecht von Skalweit. |
| Neufahrwasser | 30.21 | 767.4 | 30.23 | 767.8 | 46.4 | 8.0 | 79 | NNE | | | 2 | | 2 | | | 0.043 | 1.1 | | A. Lothes. |
| Posen | 29.86 | 758.5 | 30.15 | 765.9 | 59.4 | 15.2 | 45 | NE | | | 6 | | 6 | | | 0 | 0 | | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.45 | 747.9 | 29.99 | 761.8 | 57.2 | 14.0 | 43 | Calm | | | 0 | | 3 | | | 0 | 0 | | Dr. Schur. |
| Stuttgart | 29.04 | 737.6 | 29.97 | 761.3 | 57.7 | 14.3 | 28 | E | | | 1 | | 0 | | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | 29.39 | 746.4 | 29.91 | 759.6 | 57.4 | 14.1 | 37 | E | | | 7 | | 0 | | | 0 | 0 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.52 | 724.4 | 30.01 | 762.3 | 53.1 | 11.7 | 40 | Calm | 0 | 0 | | | 0 | | | 0 | 0 | | Dr. Von Bebber. |
| Wustrow, Naval School | 30.27 | 768.9 | 30.31 | 769.9 | 47.5 | 8.6 | 78 | ENE | | | 2 | | 3 | | | 0 | 0 | | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.44 | 747.8 | 29.82 | 757.5 | 73.4 | 23.0 | | SW | | | 3.5 | | | | | | | Dusty | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.73 | 755.1 | 29.78 | 756.4 | 82.4 | 28.0 | 73 | WSW | 31? | 13.8? | | | 2 | | | 0 | 0 | D. clouds | |
| Deesa | 29.27 | 743.5 | 29.73 | 755.2 | 93.8 | 34.3 | 44 | SW | | | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.79 | 756.6 | 29.82 | 757.5 | 82.7 | 28.2 | 73 | NW | 20 | 8.9 | | | 5 | | NW | 0 | 0 | D. clouds | |
| Poona | 27.76 | 705.0 | 29.71 | 754.7 | 89.1 | 31.7 | 35 | NE | | | | | 0 | | | 0 | 0 | Dust-whirl.. | |
| Lahore | 28.86 | 733.1 | 29.60 | 751.8 | 81.0 | 27.2 | 38 | W | 8.3 | 3.7 | | | 6 | | | 0 | 0 | Cloudy | |
| Belgaum | 27.28 | 693.0 | 29.76 | 755.9 | 87.9 | 31.1 | 47 | W | 18 | 8.0 | | | 2 | Calm | | 0 | 0 | D. clouds | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.73 | 729.8 | 29.62 | 752.3 | 84.8 | 29.3 | 21 | E | 3.0 | 1.3 | | | 8 | | | 0 | 0 | | |
| Agra | 29.07 | 738.4 | 29.61 | 752.2 | 98.6 | 37.0 | 23 | SE | | | | | 10 | SE | | 0 | 0 | Dust-whirl.. | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.65 | 727.7 | 29.65 | 753.2 | 99.2 | 37.3 | 20 | W | 5.1 | 2.3 | | | 4 | | NE | 0 | 0 | D. clouds | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.26 | 743.3 | 29.62 | 752.4 | 98.1 | 36.7 | 31 | Calm | 4.9 | 2.2 | | | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.32 | 744.7 | 29.62 | 752.3 | 97.1 | 36.2 | 22 | Calm | 1.2 | 0.5 | | | 2 | | | 0 | 0 | D. clouds | |
| Patna | 29.45 | 747.9 | 29.62 | 752.4 | 98.0 | 36.7 | 13 | W | 1.5 | 0.7 | | | | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.68 | 703.0 | 29.63 | 752.5 | 92.6 | 33.7 | 11 | NW | 8 | 3.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Cuttack | 29.61 | 752.2 | 29.69 | 754.2 | 89.1 | 31.7 | 37 | SW | 10.3 | 4.6 | | | 3 | | | 0.08 | 2.0 | D. clouds | |
| Calcutta (Alipore) | 29.65 | 753.0 | 29.67 | 753.5 | 86.5 | 30.3 | 74 | S | 7 | 3.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.36 | 745.6 | 29.75 | 755.6 | 73.9 | 23 3 | 70 | E | 9.4 | 4.2 | | | 1 | | W | 0.35 | 8.9 | D. clouds | |
| Chittagong | 29.73 | 755.2 | 29.82 | 757.5 | 77.9 | 25 5 | 90 | N | 12.1 | 5.4 | | | 10 | | | 0 | 0 | Gloomy | |
| Sibsagar | 29.50 | 749.3 | 29.85 | 758.1 | 68.6 | 20.3 | 81 | ESE | 3.7 | 1.6 | | | 8 | SSE | | 0.08 | 2.0 | D. clouds | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.33 | 719.6 | 29.65 | 753.2 | 95.2 | 35.1 | 19 | NW | 4.7 | 2.1 | | | 2 | SW | | 0 | 0 | D. clouds | |
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10 | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0 10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.50 | 749.2 | 29.91 | 759.7 | 60.6 | 15.9 | 25 | SE | 0.7 | 0.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 29.80 | 757.0 | 29.91 | 759.8 | 59.4 | 15.2 | 32 | NE | 6.3 | 2.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.73 | 755.1 | 29.92 | 760.0 | 59.2 | 15.1 | 37 | E | 4.3 | 1.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.61 | 726.8 | 29.94 | 760.4 | 59.7 | 15.4 | 47 | S | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.43 | 747.5 | 29.95 | 760.7 | 61.9 | 16.6 | ..... | N | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.04 | 737.7 | 29.96 | 760.9 | 58.1 | 14.5 | 56 | SSW | 1.8 | 0.8 | ..... | ..... | 6 | N | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 28.04 | 712.1 | 29.96 | 761.0 | 52.7 | 11.5 | 49 | NW | ..... | ..... | 2 | ..... | 3 | SSW | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.67 | 753.5 | 29.89 | 759.2 | 61.5 | 16.4 | 42 | E | ..... | ..... | 4 | ..... | 5 | W | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.71 | 754.6 | 29.88 | 758.9 | 64.9 | 18.3 | 24 | NW | 6.3 | 2.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.65? | 753.22 | 29.97? | 761.3? | 59.5 | 15.3 | 37 | ESE | ..... | ..... | 6 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.61 | 752.0 | 29.86 | 758.5 | 63.5 | 17.5 | 27 | NE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 29.78 | 756.5 | 29.87 | 758.7 | 60.8 | 16.0 | 54 | N | 8.7 | 3.9 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 29.87 | 758.8 | 29.93 | 760.1 | 53.8 | 12.1 | 69 | NW | 6.3 | 2.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.36 | 720.4 | 29.93 | 760.1 | 52.7 | 11.5 | 47 | NE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.71 | 754.6 | 29.82 | 757.4 | 67.3 | 19.6 | 37 | NNE | ..... | ..... | 4 | ..... | 3 | SE | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.60 | 751.9 | 29.78 | 756.4 | 69.3 | 20.7 | 40 | NW | 9.8 | 4.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U | 29.57 | 751.1 | 29.77 | 756.2 | 72.0 | 22.2 | 36 | NNE | ..... | ..... | 4 | ..... | 4 | S | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 59.7 | 15.4 | 64 | NNW | 24.8 | 11.1 | ..... | ..... | 9 | NW | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.64 | 752.8 | 29.83 | 757.6 | 64.2 | 17.9 | 71 | S | ..... | ..... | 2 | ..... | 9 | W | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 28.90 | 734.1 | 29.79 | 756.6 | 67.3 | 19.6 | 69 | S | 11.2 | 5.0 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.48 | 748.9 | 29.74 | 755.3 | 64.6 | 18.1 | 49 | E | 2.5 | 1.1 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.62 | 752.4 | 29.70 | 754.3 | 68.5 | 20.3 | 57 | SSE | ..... | ..... | 4 | ..... | 7 | SW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.22 | 742 3 | 29.78 | 756.4 | 69.6 | 20.9 | 39 | ESE | 1.8 | 0.8 | ..... | ..... | 2 | SE | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nagasaki | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Tokei (Yeddo) | 30.20 | 767.1 | 30.27 | 768.8 | 44.8 | 7.1 | 86 | NE | 11.2 | 5.0 | ..... | ..... | 10s | ..... | ..... | 0.165 | 4.19 | Cloudy | The Observatory. |
| Tokei (Yeddo) University | 30.16 | 766.1 | 30.26 | 768.6 | 44.9 | 7.2 | 88 | ENE | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0.158 | 4.0 | Wet | Prof. P. V. Veeder. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 61.7 | 16.7 | 41 | N | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | L. Castillo, A. E. |
| Guadalajara | 25.04 | 636.0 | 30.13 | 765.2 | 41.0 | 5.0 | 65 | S | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. L. Perez. |
| Guanajuato | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 53.8 | 12.1 | 58 | NW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico | 23.07 | 586.0 | 29.64 | 752 8 | 50.0 | 10.0 | 48 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Sl'ly hazy. | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 48.0 | 8.9 | 68 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very fine | M. V. de Leon, M. E. |
| Puebla | 23.28 | 591.0 | 30.04 | 762.9 | 45.9 | 7.7 | 71 | N | 3.1 | 1.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 29.78 | 756.5 | 29.79 | 756 8 | 76.1 | 24.5 | 87 | SW | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D |
| Vera-Cruz | 29.77 | 756.1 | 29.79 | 756.8 | 77.0 | 25.0 | 50 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Smoky | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 46.4 | 8.0 | 67 | SW | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.34 | 592 9 | 30.12 | 765.1 | 44.6 | 7.0 | 71 | NNE | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | P. Spina. [M.M. D. D |
| Morelia | 24.21 | 610.5 | ..... | ..... | 46.4 | 8.0 | 50 | SW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | M. Tena, F. L. Param. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.01 | 762 2 | 30.01 | 762.2 | 53 8 | 12 1 | ..... | ESE | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... |
| Groningen | 30.11 | 764.8 | 30.17 | 766.2 | 47.7 | 8.7 | ..... | E | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... |
| Helder | 30.12 | 765.0 | 30.12 | 765 0 | 48.2 | 9.0 | ..... | ENE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... |
| Hellevoetsluis | 30.13 | 765.4 | 30.13 | 765.4 | 54.5 | 12.5 | 53 | ENE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Utrecht | 30.04 | 763.0 | 30.09 | 764.2 | 56.7 | 13.7 | 48 | E | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0 | 0 | Light cloudy | H. v d Brink. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.42 | 772.6 | 30.47 | 774.0 | 59.0 | 15.0 | 39 | NW | 3.6 | 1.6 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 30.49 | 774.5 | 30.53 | 775.5 | 50.0 | 10.0 | 50 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 30.35 | 771.0 | 30.50 | 774.7 | 57.4 | 14.1 | 48 | ENE | 4 to 7 | 2 to 3 | ..... | ..... | 0 | ..... | ..... | 0.012 | 0.3 | ..... | |
| Tromsö | 30.29 | 769.4 | 30.34 | 770.5 | 38.1 | 3.4 | 80 | SW | 11 | 5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.52 | 749.7 | 29.71 | 754.6 | 62.4 | 16.9 | 94 | SSW | 14.3 | 6.4 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Campo Major | 29.08 | 738.6 | 30.11 | 764.8 | 59.0 | 15.0 | 80 | SW | 6.3 | 2.8 | ..... | ..... | 10 | SW | ..... | 0.035 | 0.9 | Light rain | Dr. J. A. Sampaio. |
| Funchal, (Madeira) | 30.08 | 763.9 | 30.16 | 766.1 | 67.5 | 19.7 | 75 | WSW | 9.8 | 4.4 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos |
| Lisbon, Observatory | 29.73 | 755.1 | 30.09 | 764.2 | 59.0 | 15.0 | 89 | SSW | 22.4 | 10.0 | ..... | ..... | 10 | ..... | ..... | 0.039 | 1.0 | ..... | Capt. D. A. de Cunha. |
| Ponta Delgada, (Azores) | 29.74 | 755.4 | 29.81 | 757.2 | 65.5 | 18.6 | 94 | SSW | 18.1 | 8.1 | ..... | ..... | 10 | ..... | ..... | 0.437 | 11.1 | ..... | The Staff. |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Mozambique, Mozambique | 29.74 | 755.5 | 29.75 | 755.7 | 82.4 | 28.0 | ..... | S | ..... | ..... | 5 | ..... | 6 | ..... | S | 2 | ..... | Gloomy | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Rio Douro, | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| S. 25° 58′, E. 32° 37′ | ..... | ..... | 30.09 | 764.2 | 81.5 | 27.5 | ..... | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 2 | N | Blue sky | J. T. d'Oliveria, Com'd't. |
| Sado, | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Porto Praya, Cape Verde Islands | 30.02* | 762.5* | 30.03* | 762.8* | 85.3 | 29.6 | ..... | NNE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 3 | NNE | Blue sky | |
| Sá da Bandeira, | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. N. P. Sampaio, Com'd't. |
| St. Paul de Loanda, Lower Guinea | 29.72 | 754.9 | 29.73 | 755.1 | ..... | ..... | ..... | W | ..... | ..... | 2 | ..... | 7 | ..... | W | 1 | ..... | Thunder | |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. Texeira da Silva, Com'd't. P. J. Ferreina, dos Annas, Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.63 | 752.5 | 30.05 | 763.2 | 56.8 | 13.8 | 57 | ENE | 9 | 4 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.74 | 755.5 | 30.16 | 766.1 | 61.0 | 16.1 | 34 | E | 4 | 2 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 30.13 | 765.2 | 30.37 | 771.4 | 57.0 | 13.9 | 39 | ENE | 11 | 5 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Light clouds | Astronomical Obs. |
| St. Petersburg | 30.37 | 771.5 | 30.39 | 771.9 | 56.7 | 13.7 | 50 | E | 11 | 5 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| Kuopio | 30.08 | 763.9 | 30.40 | 772.2 | 48.2 | 9.0 | 56 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kieff | 29.34 | 745.1 | 29.98 | 761.4 | 48.9 | 9.4 | 71 | NE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Ch. Forsten. |
| Nikolaiev | 30.07 | 763.7 | 30.14 | 765.5 | 54.3 | 12.4 | 59 | SSW | 9 | 4 | ..... | ..... | 9k;ks;c | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Kertch | 30.15 | 765.9 | 30.17 | 766.4 | 52.5 | 11.4 | 91 | NNE | 4 | 2 | ..... | ..... | 2k | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Moscow | 29.68 | 753.9 | 30.23 | 767.8 | 59.2 | 15.1 | 35 | SE | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light clouds | Lugorio. |
| Lugan | 29.88 | 759.0 | 30.09 | 764.2 | 48.6 | 9.2 | 88 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 30.20 | 767.0 | 30.22 | 767.5 | 37.0 | 2.8 | 89 | W | 4 | 2 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Meteorological Obs. |
| Tiflis | 29.78 | 731.0 | 30.17 | 766.3 | 69.6 | 20.9 | 43 | SE | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Astrakhan | 30.35 | 770.9 | 30.27 | 768.8 | 59.9 | 15.5 | 60 | ESE | 9 | 4 | ..... | ..... | 2c | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Krotkowo* | 29.73 | 755.1 | 30.19 | 766.8 | 65.3 | 18.5 | 25 | WSW | 2 | 1 | ..... | ..... | 5cs;s | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Kasan | 29.91 | 759.7 | 30.18 | 766.5 | 61.5 | 16.4 | 38 | W | 2 | 1 | ..... | ..... | 1s | ..... | ..... | ..... | ..... | Light clouds | Sebastianof. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 7ks | ..... | ..... | ..... | ..... | Light clouds | Cand. Fatjanow. |
| Ekaterinburg | 29.09 | 738.9 | 30.04 | 762.9 | 51.1 | 10.6 | 31 | WNW | 18 | 8 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nukuss | 29.95 | 760.8 | 30.19 | 766.7 | 59.4 | 15.2 | 76 | NE | 16 | 7 | ..... | ..... | 8k;ks | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 5ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs |
| Tashkend | 28.28 | 718.4 | 29.96 | 761.0 | 62.2 | 16 8 | 39 | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Barnaul | 29.48 | 748.9 | 30.03 | 762.7 | 32.4 | 0.2 | 55 | W | 0 | 0 | ..... | ..... | 5? | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Yeniseisk | 29.70 | 754.3 | 30.04 | 763.0 | 22.1 | — 5.5 | 63 | SE | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Peking, (China) | 29.93 | 760.3 | 30.08 | 763.9 | 56.5 | 13.6 | 39 | SW | 2 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Marks. |
| Nertchinsk | 27.72 | 704.0 | 29.81 | 757.2 | 36.3 | 2.4 | 49 | Calm | 0 | 0 | ..... | ..... | 5ks | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Vladivostock | 30.20 | 767.1 | 30.30 | 769.6 | 35.1 | 1.7 | 58 | E | 4 | 2 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 13.1 | —10.5 | 67 | W | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| | | | | | | | | | | | | | 2c | | | | | | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 51° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.84 | 757.9 | 29.95 | 760.6 | 59.4 | 15.2 | 76 | SE | 1.3 | 0.58 | ..... | 8 | 4 | NW | ..... | 0.457 | 11.59 | Covered | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.90 | 759.4 | 29.95 | 760.8 | 69.1 | 20.6 | 65 | SE | 2.0 | 0.89 | ..... | 4 | 5 | W | ..... | 0.138 | 3.5 | Almost cov. | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.04 | 686.7 | ..... | ..... | 55.4 | 13.0 | 79 | SW | 9.2 | 4.13 | ..... | ..... | 8 | ..... | ..... | 0.118 | 3.0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.82 | 706.5 | 30.04 | 763.0 | 57.2 | 14.0 | 71 | W | 20.1 | 9.00 | ..... | 0 | 10 | ..... | ..... | 0.051 | 1.3 | Covered | The Staff. |
| Murcia, Met. Obs'y | 29.85 | 758.2 | 30.00 | 761.9 | 73.8 | 23.2 | 44 | NW | 4.4 | 1.97 | ..... | 2 | 4 | SE | ..... | 0 | 0 | Cloudy | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.29 | 743.9 | 30.19 | 766.8 | 57.7 | 14.3 | 81 | SSW | 19.2 | 8.61 | ..... | ..... | 10 | ..... | ..... | 0.043 | 1.1 | Covered | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.85 | 758.3 | 29.92 | 759.9 | 81.1 | 27.3 | 80 | S | 13.2 | 5.9 | ..... | 6cs | 8kn | ..... | SSW | Inap. | Inap. | Cloudy | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 30.11 | 764.7 | 30.21 | 767.2 | 64.6 | 18.1 | 79 | WSW | 17.1 | 7.6 | ..... | 0 | 8 | ..... | W | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.93 | 760.1 | 30.02 | 762.4 | 81.0 | 27.2 | 84 | E | 0 | 0 | ..... | 3k | 1k | E | E | 0 | 0 | Clear | Leonardo de Tejeda, Chief of Engineers. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.



Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATION. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.36 | 771.1 | 30.40 | 772.1 | 36.7 | 2.6 | ..... | S | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.42 | 772.7 | 30.47 | 774.0 | 52.2 | 11.2 | 54 | S | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.47 | 774.0 | 30.52 | 775.3 | 54.3 | 12.4 | 50 | SSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 30.28 | 769.1 | 30.46 | 773.6 | 52.9 | 11.6 | 57 | NE | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0.004 | 0.1 | ..... | |
| Wisby | 30.20 | 768.5 | 30.32 | 770.0 | 57.2 | 14.0 | 47 | ESE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 30.41 | 772.4 | 30.48 | 774.3 | 49.6 | 9.8 | 75 | NNW | 9.8 | 4.4 | ..... | ..... | 0 | ..... | ..... | 0.004 | 0.10 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.55 | 725.2 | 30.00 | 761.9 | 47.5 | 8.6 | 78 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.130 | 3.3 | Covered | The Observatory. |
| Zurich | 28.35 | 720.0 | 29.98 | 761.5 | 54.7 | 12.6 | 55 | SE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +1.0 mm.; Thermometer, —2.6 cent.; Relative Humidity, +20 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.99 | 761.7 | 70.7 | 21.5 | 43 | SE | 18 | 8.0 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.82 | 757.4 | 68.5 | 20.3 | ..... | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | B. Stéfanidès. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 30.01 | 762.2 | 30.13 | 765.2 | 66.0 | 18.9 | 80 | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Hazy | Imperial Observatory. Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.05 | 763.3 | 30.12 | 765.0 | 36.0 | 2.2 | 64 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | ..... | ..... | Clear | Hon. J. Ferguson. |
| Brockville, Ontario | 29.68 | 753.9 | 29.99 | 761.7 | 51 | 10.6 | ..... | S | 3 | 1.3 | ..... | ..... | 10s | ..... | SW | 0.12 | 3.0 | Cloudy | W. R. Bigg. |
| *Chatham, N B | 30.08 | 764 0 | 30.14 | 765.5 | 37 | 2.8 | 53 | SW | 2 | 0.9 | ..... | 2c | 0 | N | ..... | 0 | 0 | Fair | G. A. Blair. |
| Charlottetown, P. E. Island | 30.10 | 764.5 | 30.15 | 765.8 | 43 | 6.1 | 66 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.77 | 756.1 | 29.96 | 761.0 | 49.2 | 9.6 | 83 | SE | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0.026 | 0.66 | Overcast | James Smith, M. A. |
| Dalhousie, N. B | 30.11 | 764.8 | 30.14 | 765.5 | 38.9 | 3.8 | 69 | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | Clear | H. A. Johnson. |
| Esquimault, B. C | 29.98 | 761.5 | 30.02 | 762.5 | 47.3 | 8.5 | 92 | SW | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Cloudy | W. H. Bevis. |
| *Father Point, Quebec | 30.12 | 765.0 | 30.14 | 765.5 | 36 | 2.2 | 71 | SW | 6 | 2.7 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | J. McWilliams. |
| Fredericton, N. B | 30.16 | 766.1 | 30.23 | 767.8 | 34.1 | 1.1 | 74 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. Harrison. |
| *Fort Garry Manitoba | 28.81 | 719.1 | 29.13 | 739.9 | 36 | 2.2 | 100 | N | 22 | 9.8 | ..... | 5k | 5n | N | N | 0.420 | 10.67 | Light rain | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Granton, Ontario | 28.60 | 726.4 | 29.68 | 753.9 | 52 | 11.1 | 86 | SE | ..... | ..... | 2 | ..... | 10n | ..... | ..... | 0.27 | 6.9 | Cloudy | H. J. Strang, M. A. |
| *Halifax, N. S | 30.02 | 762.5 | 30.16 | 766.1 | 42 | 5.6 | 63 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Grant. |
| Hamilton, Ontario | 29.44 | 747.8 | 29.81 | 757.2 | 45.7 | 7.6 | 88 | SE | ..... | ..... | 1 | 10cs | ..... | ..... | ..... | 0.9 | 23. | Cloudy | F. Allison, M. A. |
| Heart's Content, N. F | 29.95 | 760.7 | 29.97 | 761.2 | 33 | 0.6 | 75 | N | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine | Geo. Dickson, M. A. |
| *Kingston, Ontario | 29.60 | 751.8 | 29.93 | 760.2 | 47 | 8.3 | 78 | S | 9 | 4.0 | ..... | ..... | 10ks | ..... | S | 0.01 | 0.3 | Cloudy | E. Weedon. |
| Little Glace Bay, N. S | 30.01 | 763.0 | 30.08 | 764.0 | 38.0 | 3.3 | ..... | NW | 3 | 1.3 | ..... | 3c | 0 | W | ..... | 0 | 0 | Fair | S. Woods, M. A. |
| *Montreal, Quebec | 29.82 | 757.4 | 30.02 | 762.5 | 46 | 7.7 | 84 | S | 17 | 7.6 | ..... | 8k | 2n | ..... | ..... | Inap. | Inap. | Light rain | S. Woods, M. A. |
| *Parry Sound, Ontario | 29.05 | 737.9 | 29.74 | 755.4 | 48 | 8.9 | 93 | E | 26 | 11.6 | ..... | ..... | 10n | ..... | S | 0.29 | 7.4 | Cloudy | C. H. Rigby. |
| Peterboro, Ontario | 29.11 | 739.4 | 29.86 | 758.4 | 48 7 | 9.3 | 85 | SE | ..... | ..... | ..... | ..... | 10s | ..... | ..... | 0.17 | 4.3 | Overcast | C. H. McLeod, C. E. |
| Port Dover, Ontario | 29.09 | 738.9 | 29.78 | 756.4 | 49 | 9.4 | 100 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | S | 0.19 | 4.8 | Light rain | Rev. R. Mosley. |
| Port Hastings, N. S | 30.09 | 764.3 | 30.14 | 765.5 | 39.4 | 4.1 | ..... | W | 2 | 0.9 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | H. Morgan. |
| Port Stanley, Ontario | 29.08 | 738.6 | 29.72 | 754.9 | 48 | 8.9 | 89 | E | 20 | 8.9 | ..... | ..... | 10ks | ..... | S | 0.31 | 7.9 | Cloudy | Peter Grant. |
| *Quebec, Quebec | 29.81 | 757.2 | 30.13 | 765.3 | 40 | 4.4 | 73 | N | ..... | ..... | 7 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | M. Payne. |
| *Rockliffe, Ontario | 29.39 | 746.5 | 29.85 | 758.2 | 46 | 7.8 | 77 | E | 12 | 5.4 | ..... | ..... | 10s | ..... | SE | Inap | Inap. | Cloudy | Capt. Ashe, R. N. |
| St. Andrews, N. B | 30.16 | 766.1 | 30.21 | 767.3 | 39 | 3.9 | 90 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | W. H. McIntyre. |
| St. John, N. B | 30.07 | 763.8 | 30.24 | 768.1 | 32 | 0.0 | 79 | NE | 1 | 0.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Dr. Gove. |
| *Saugeen, Ontario | 28.92 | 734.6 | 29.62 | 752.3 | 54 | 12.2 | 92 | SE | 16 | 7.2 | ..... | 5k | 5ks | W | ..... | 0.22 | 5.6 | Cloudy | G. Murdock, C. E. |
| Stayner, Ontario | 28.94 | 735.1 | 29.72 | 754.9 | 49 | 9.4 | 93 | SE | 10 | 4.5 | ..... | ..... | 10n | S | ..... | 0.25 | 6.3 | Cloudy | K. Stewart. |
| Stratford, Ontario | 28.44 | 722.4 | 29.70 | 754.4 | 50.5 | 10.3 | 94 | SE | 9 | 4.0 | ..... | 2c | 9s | ..... | ..... | 0 | 0 | Cloudy | R. J. Cole. |
| *Sydney, C. B | 30.07 | 763.8 | 30.10 | 764.5 | 47 | 8.3 | 67 | W | 6 | 2.7 | ..... | 5c | 0 | ..... | ..... | 0 | 0 | Cloudy | C. J. MacGregor, M. A. |
| *Toronto, Ontario | 29.43 | 747.5 | 29.81 | 757.2 | 47 | 8.3 | 87 | E | 5 | 2.2 | ..... | ..... | 10ks | ..... | S | 0.24 | 6.1 | Cloudy | T. C. Hill. |
| Windsor, N. S | 30.08 | 764.0 | 30.18 | 766.6 | 40.0 | 4.4 | 72 | S | 1 | 0.4 | ..... | 1cs | 0 | ..... | ..... | 0 | 0 | Clear | Magnetic Observatory. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 32.0 | 0.0 | 89 | NW | ..... | ..... | ..... | ..... | 10 | ..... | ..... | Inap | Inap. | Fair | J. Montgomery. John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,017 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Byt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Upper. 0–10 | Clouds. Amount. Low'r. 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.89 | 759.2 | 30.11 | 764.8 | 44 | 6.7 | 84 | SE | 12 | 5.4 | | | 10n | | SE | Inap. | Inap. | Light rain... | |
| Alpena, Michigan | 28.87 | 733.3 | 29.49 | 749.0 | 45 | 7.2 | 92 | S | 12 | 5.4 | | | 10s | | S | 0.21 | 5.3 | Cloudy | |
| Atlantic City, New Jersey | 30.08 | 764.0 | 30.10 | 764.5 | 49 | 9.4 | 100 | SE | 15 | 6.7 | | | 10n | | Calm | 0.21 | 5.3 | Light rain... | |
| Augusta, Georgia | 29.69 | 754 1 | 29.87 | 758.7 | 65 | 18.3 | 89 | Calm | 0 | 0 | | | 10ks | | W | 0.58 | 14.7 | Cloudy | |
| Baltimore, Maryland | 29.98 | 761.5 | 30.02 | 762 5 | 53 | 11.7 | 100 | SE | 10 | 4.5 | | | 10n | | Calm | 0.59 | 15.0 | Light rain... | |
| Barnegat, New Jersey | 30.10 | 764.5 | 30.12 | 765.0 | 48 | 8.9 | 96 | SE | 18 | 8.0 | | | 10n | | SE | 0.02 | 0.5 | Light rain... | |
| Bismarck, Dakota | 27.58 | 700.5 | 29.43 | 747.5 | 34 | 1.1 | 61 | NW | 48 | 21.5 | | | 10s | | NW | Inap. | Inap. | Cloudy | |
| Boise City, Idaho | 27.21 | 691.1 | 30.09 | 764.5 | 32 | 0.0 | 79 | S | 1 | 0.4 | | 2k | 5s | Calm | Calm | 0 | 0 | Fair | |
| Boston, Massachusetts | 30.07 | 763.8 | 30.23 | 767.8 | 42 | 5.6 | 83 | S | 3 | 1.3 | | 5ck | 5s;hz | W | | 0 | 0 | Cloudy | |
| Brackettville, Texas | 28.74 | 730.0 | 29.76 | 755.9 | 56 | 13.3 | 81 | NE | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 27.90 | 708.6 | 28.85 | 732.8 | 35 | 1.7 | 100 | N | 24 | 10.7 | | | 10n | | Calm | 3.83 | 97.3 | Sleeting | |
| Brownsville, Texas | 29.74 | 755.4 | 29.80 | 756.9 | 66 | 18.9 | 94 | Calm | 0 | 0 | | | Fog | | Calm | 0 | 0 | Foggy | |
| Buffalo, New York | 29.09 | 738.9 | 29.77 | 756 1 | 55 | 12.8 | 74 | S | 8 | 3.6 | | | 10s | | S | 0.21 | 5.3 | Cloudy | |
| Burkes, Arizona | | | | | 59 | 15.0 | 76 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Burlington, Vermont | 29.81 | 757.2 | 30.07 | 763.8 | 49 | 9.4 | 63 | S | 10 | 4.5 | | | 10s | | SW | 0.02 | 0.5 | Cloudy | |
| Cairo, Illinois | 29.52 | 749.8 | 29.90 | 759.4 | 53 | 11.7 | 67 | Calm | 0 | 0 | | 5c | 0 | Calm | | 0.02 | 0.5 | Fair | |
| Camp Grant, Arizona | 25.15 | 638.8 | 29.95 | 760.7 | 54 | 12.2 | 55 | N | | | 1 | 0 | 2ks | | N | 0 | 0 | Clear | |
| Camp Verde, Arizona | 26.84 | 681.7 | 30.33 | 770.4 | 42 | 5.6 | 42 | NW | | | 1 | 0 | 0 | | | 0 | 0 | Clear | |
| Campo, California | 27.37 | 695.2 | 29.94 | 760.5 | 51 | 10.6 | 93 | Calm | 0 | 0 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Cape Hatteras, N. Carolina | 29.94 | 760.5 | 29.95 | 760.7 | 64 | 17.8 | 94 | SE | 30 | 13.4 | | | 10n | | SE | 0.05 | 1.3 | Light rain,. | |
| Cape Henry, Virginia | 29.96 | 761.0 | 29.98 | 761.5 | 54 | 12.2 | 100 | SE | 3 | 1.3 | | | 10n | | SE | 0.33 | 8.4 | Light rain.. | |
| Cape Lookout, N. Carolina | 29.88 | 758.9 | 29.90 | 759.4 | 63 | 17.2 | 94 | SE | 20 | 8.9 | | | 10n | | SE | 0.10 | 2.5 | Light rain... | |
| Cape May, New Jersey | 30.08 | 764.0 | 30.11 | 764.8 | 51 | 10.6 | 100 | SE | 18 | 8.0 | | | 10n | | | 0.24 | 6.1 | Light rain.... | |
| Charleston, South Carolina | 29.81 | 757.2 | 29.87 | 758.7 | 67 | 19.4 | 95 | W | 9 | 4.0 | | | 10s | | W | 5.45 | 138.4 | Cloudy | |
| Cheyenne, Wyoming | 23.89 | 606.8 | 29.83 | 757.7 | 20 | — 6.7 | 70 | NW | 16 | 7.2 | | 0 | 0 | | | Inap. | Inap. | Clear. | |
| Chicago, Illinois | 28.90 | 734 0 | 29.58 | 751.3 | 46 | 7.8 | 62 | S | 17 | 7.6 | | 0 | 0 | | | 0.23 | 5.8 | Clear | |
| Cincinnati Ohio | 29.12 | 739 6 | 29.75 | 755.6 | 57 | 13.9 | 69 | NW | 6 | 2.7 | | 9k | 0 | W | | 1.19 | 30.2 | Cloudy | |
| Cleveland, Ohio | 28.96 | 735.6 | 29.65 | 753.1 | 58 | 14.4 | 70 | SE | 18 | 8.0 | | | 10s | | SE | 0.03 | 0.8 | Threatening | |
| Concho, Texas | 28.09 | 711.2 | 29.70 | 754.4 | 47 | 8.3 | 85 | NE | | | 1 | 0 | 0 | | | 0 | 0 | Clear | |
| Corsicana, Texas | 29.46 | 748.3 | 29.93 | 760.2 | 50 | 10.0 | 86 | N | 4 | 1.8 | | 0 | 2s | | N | 0 | 0 | Fair | |
| Davenport, Iowa | 28.85 | 732.8 | 29.47 | 748.5 | 45 | 7.2 | 53 | SW | 24 | 10.7 | | 0 | 0 | | | 0.22 | 5.6 | Clear | |
| Deadwood, Dakota | 25 12 | 638.0 | | | 28 | — 2.2 | 77 | NE | 4 | 1.8 | | 10cs | 0 | NW | | 0 | 0 | Cloudy | |
| Denison, Texas | 29.16 | 740.7 | 29.97 | 761.2 | 49 | 9.4 | 71 | N | 4 | 1.8 | | | 10s | | SW | 0.04 | 1.0 | Cloudy | |
| Denver, Colorado | 24 72 | 627.9 | 29.94 | 760.5 | 27 | — 2.8 | 76 | W | 4 | 1.8 | | 0 | 0 | | | 0.01 | 0.3 | Clear | |
| Detroit, Michigan | 28.97 | 735.8 | 29.62 | 752.3 | 54 | 12.2 | 74 | SW | 8 | 3.6 | | | 10s | | SW | 0.12 | 3.0 | Cloudy | |
| Dodge City, Kansas | 27.36 | 694.9 | 29.69 | 754.1 | 39 | 3.9 | 46 | NW | 24 | 10.7 | | | 8s | | W | 0 | 0 | Cloudy | |
| Dubuque, Iowa | 28.61 | 726.7 | 29.28 | 743.7 | 44 | 6.7 | 69 | SW | 17 | 7.6 | | | 10ks | | SW | 0.49 | 10.2 | Cloudy | |
| Duluth, Minnesota | 28.18 | 715.8 | 28.82 | 732.0 | 41 | 5.0 | 91 | NE | 30 | 13.4 | | | 10n | | NE | 0.80 | 20.3 | Light rain... | |
| Eagle Pass, Texas | 29.09 | 738.9 | 29.81 | 757.2 | 59 | 15.0 | 82 | E | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Eastport, Maine | 30.16 | 766.1 | 30.23 | 767.8 | 41 | 5.0 | 65 | SW | 5 | 2.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| El Paso, Texas | | | | | 64 | 17.8 | 44 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.01 | 736.8 | 29.69 | 754.1 | 58 | 14.4 | 76 | S | 26 | 11.6 | | | 10n | | S | 0.35 | 8.9 | Light rain... | |
| Escanaba, Michigan | 28.72 | 729.5 | 29.35 | 745.7 | 42 | 5.6 | 83 | S | 24 | 10.7 | | | 10s | | S | 1.07 | 27.2 | Cloudy | |
| Florence, Arizona | 28.33 | 719.6 | 29.93 | 760.2 | 65 | 18.3 | 49 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | 24.08 | 611.6 | 30.08 | 764.0 | 45 | 7.2 | 52 | NW | 3 | 1.3 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.48 | 647.2 | | | 41 | 5.0 | 25 | SW | 16 | 7.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.09 | 637.3 | 30.05 | 763.3 | 60 | 15.6 | 44 | NW | 19 | 8.5 | | 0 | 0 | | | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.40 | 746.7 | 29.94 | 760.5 | 40 | 4.4 | 82 | Calm | 0 | 0 | | 5ck | 0 | SW | | 0 | 0 | Fair | |
| Fort Griffin, Texas | 28.70 | 729.0 | 29.98 | 761.5 | 49 | 9.4 | 78 | N | 2 | 0.9 | | | 10s | | W | 0.02 | 0.5 | Cloudy | |
| Fort St. Michael, Alaska | 29.98 | 761.5 | 30.02 | 762.5 | — 9 | —22.8 | 100 | W | 23 | 10.3 | | | 10s | | W | 0.01 | 0.3 | Cloudy | |
| Fort Sill, Indian Territory | 28.77 | 730.7 | 29.88 | 758.9 | 49 | 9.4 | 57 | NE | 2 | 0.9 | | 0 | 5s | | W | 0 | 0 | Fair | |
| Galveston, Texas | 29.77 | 756.1 | 29.81 | 757.2 | 67 | 19.4 | 90 | N | 12 | 5.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Grand Haven, Michigan | 28.95 | 735.3 | 29.58 | 751.3 | 49 | 9.4 | 71 | SW | 21 | 9.4 | | 0 | 0 | | | 0.14 | 3.6 | Clear | |
| Indianapolis, Indiana | 29.02 | 737.1 | 29.78 | 756.4 | 51 | 10.6 | 53 | SW | 3 | 1.3 | | 0 | 0 | | | 0.74 | 18.8 | Clear | |
| Indianola, Texas | 29.82 | 757.4 | 29.84 | 757.9 | 64 | 17.8 | 63 | N | 15 | 6.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.83 | 732.3 | 30.01 | 762.2 | 48 | 8.9 | 78 | NW | 4 | 1.8 | | 4k | 0 | W | | 0.05 | 1.3 | Fair | |
| Jacksonville, Florida | 29.85 | 758.2 | 29.87 | 758.7 | 68 | 20.0 | 84 | Calm | 0 | 0 | | 0 | 0 | | | 1.85 | 47.0 | Clear | |
| Keokuk, Iowa | 28.99 | 736.3 | 29.59 | 751.6 | 48 | 8.9 | 63 | SW | 18 | 8.0 | | 0 | 0 | | | 0.08 | 2.0 | Clear | |
| Key West, Florida | 29.87 | 758.7 | 29.91 | 759.7 | 78 | 25.6 | 86 | S | 9 | 4.0 | | | 10s | | SW | 0 | 0 | Cloudy | |
| Kittyhawk, North Carolina | 29.95 | 760.7 | 29.97 | 761.2 | 56 | 13.3 | 100 | SE | 13 | 5.8 | | | 10n | | SE | 0.10 | 2.5 | Light rain... | |
| Knoxville, Tennessee | 28.84 | 732.5 | 29.82 | 757.4 | 58 | 14.4 | 94 | S | 4 | 1.8 | | | 10n | | W | 0.98 | 24.9 | Light rain... | |
| La Crosse, Wisconsin | 28.27 | 718.0 | 28.97 | 735.8 | 43 | 6.1 | 75 | S | 36 | 16.1 | | | 10n | | S | 0.27 | 6.9 | Light rain... | |
| La Mesilla, New Mexico | 26.01 | 660.6 | 30.16 | 766.1 | 48 | 8.9 | 54 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Laredo, Texas | 29.39 | 746.5 | 29.72 | 754.9 | 69 | 20.6 | 80 | NE | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Leavenworth, Kansas | 28.87 | 733.3 | 29.72 | 754.9 | 41 | 5.0 | 57 | W | 24 | 10.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Los Angeles, California | 29.60 | 751.8 | 29.93 | 760.2 | 59 | 15.0 | 85 | Calm | 0 | 0 | | 0 | 5s | | Calm | 0 | 0 | Fair | |
| Louisville, Kentucky | 29.25 | 742.9 | 29.80 | 756.9 | 53 | 11.7 | 54 | W | 8 | 3.6 | | 8ck | Sm'e | SW | SW | 0.97 | 24.6 | Fair | |
| Lynchburg, Virginia | 29.24 | 742.7 | 29.92 | 760.0 | 57 | 13.9 | 100 | E | 4 | 1.8 | | | 10n | | Calm | 2.32 | 58.9 | Light rain... | |
| Marquette, Michigan | 28.57 | 725.7 | 29.24 | 742.7 | 43 | 6.1 | 67 | SE | 24 | 10.7 | | 5k | 0 | SE | | 0.24 | 6.1 | Fair | |
| Mason, Texas | 28.26 | 717.8 | 30.02 | 762.5 | 51 | 10.6 | 72 | N | 2 | 0.9 | | | 0 | | | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.60 | 751.8 | 29.92 | 760.0 | 54 | 12.2 | 53 | N | 8 | 3.6 | | | 0 | 1ks | NW | 0.02 | 0.5 | Clear | |
| Milwaukee, Wisconsin | 28.74 | 730.0 | 29.45 | 748.0 | 44 | 6.7 | 76 | S | 28 | 12.5 | | | 0 | | | 0.59 | 15.0 | Clear | |
| Mobile, Alabama | 29.81 | 757.2 | 29.86 | 758.4 | 65.5 | 18 6 | 98 | Calm | 0 | 0 | | | 0 | 1s | SW | 0 | 0 | Clear | |
| Montgomery, Alabama | 29.62 | 752.3 | 29.85 | 758.2 | 68 | 20.0 | 84 | S | 6 | 2.7 | | | 0 | | | 0 | 0 | Clear | |
| Morgantown, West Virginia | 28.73 | 729.7 | 29.74 | 755.4 | 61 | 16.1 | 71 | SE | 6 | 2.7 | | | 10s | | SW | Inap. | Inap | Threatening | |
| Mt. Washington, N. H. | 23.87 | 606.3 | 30.23 | 767.8 | 34 | 1.1 | 69 | W | 24 | 10.7 | | 10s | Haze | W | Calm | 0 | 0 | Cloudy | |
| Nashville, Tennessee | 29.32 | 744.7 | 29.85 | 758.2 | 57 | 13.9 | 75 | N | 4 | 1.8 | | 0 | 5s | | SW | 0.29 | 7.4 | Clearing | |
| New Haven, Connecticut | 30.09 | 764.3 | 30.21 | 767.3 | 46 | 7.8 | 77 | SE | 8 | 3.6 | | | 10s;hz | | Calm | Inap. | Inap. | Cloudy | |
| New London, Connecticut | 30.20 | 767.1 | 30.25 | 768.3 | 44 | 6.7 | 92 | SE | 10 | 4.5 | | 2ck | 8s | NW | SE | Inap. | Inap. | Cloudy | |
| New Orleans, Louisiana | 29.76 | 755.9 | 29.82 | 757 4 | 69 | 20.6 | 85 | SW | 2 | 0.9 | | 8k | 0 | W | | 0 | 0 | Fair | |
| Newport, Rhode Island | 30.17 | 766.3 | 30.22 | 767.6 | 44 | 6.7 | 84 | SE | 6 | 2.7 | | | 10ks | | | 0 | 0 | Threatening | |
| New York, New York | 29.98 | 761.5 | 30.16 | 766.1 | 45 | 7.2 | 92 | NE | 12 | 5.4 | | | 10n;fg | | E | 0.03 | 0.8 | Light rain... | |
| Norfolk, Virginia | 29.95 | 760.7 | 30.01 | 762.2 | 57 | 13.9 | 100 | E | 3 | 1.3 | | | 10n | | Calm | 0.27 | 6.9 | Heavy rain.. | |
| North Platte, Nebraska | 26.84 | 681.7 | 29.43 | 747.5 | 35 | 1.7 | 49 | NW | 32 | 14.3 | | 10cs | 0 | NW | | 0 | 0 | Cloudy | |
| Olympia, Washington Ter. | 30.03 | 762.7 | 30.07 | 763.8 | 46 | 7.8 | 85 | SW | 9 | 4.0 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Omaha, Nebraska | 28.41 | 721.6 | 29.47 | 748.5 | 41 | 5.0 | 65 | W | 25 | 11.2 | | | 10s | | W | 0.68 | 17.3 | Cloudy | |
| Oswego, New York | 29.61 | 752.1 | 29.92 | 760.0 | 51 | 10.6 | 72 | S | 14 | 6.3 | | | 10s | | | 0.13 | 3.3 | Threatening | |
| Pembina, Dakota | 28.29 | 718.6 | 29.11 | 739.4 | 35 | 1.7 | 100 | NW | 25 | 11.2 | | | 10n | | NW | 1.77 | 45.0 | Light rain... | |
| Philadelphia, Pennsylvania | 30.07 | 763.8 | 30.12 | 765.0 | 48 | 8.9 | 100 | E | 8 | 3.6 | | | 10n | | Calm | 0.40 | 10.2 | Heavy rain.. | |
| Phœnix, Arizona | 28.80 | 731.5 | 30.60 | 777.2 | 55 | 12.8 | 81 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.36 | 440.9 | 29.57 | 751.1 | —14 | —25.6 | 42 | N | 34 | 15.2 | | 0 | Haze | | Calm | 0.33 | 8.4 | Hazy | |
| Pioche, Nevada | 24.04 | 610.6 | 29.81 | 757.2 | — 27 | — 2.8 | 53 | S | 1 | 0.4 | | 0 | 0 | | | 6 | 0 | Clear | |
| Pittsburg, Pennsylvania | 28.98 | 735.6 | 29.74 | 755.4 | 59 | 15.0 | 76 | E | 5 | 2.2 | | | 10n | | SW | 0.03 | 0.8 | Light rain... | |
| Port Huron, Michigan | 28.95 | 735.3 | 29.58 | 751.3 | 56 | 13.3 | 87 | SE | 15 | 6.7 | | | 10s | | SE | 0.52 | 13.5 | Cloudy | |
| Portland, Maine | 30.16 | 766.1 | 30.21 | 767.3 | 45 | 7.2 | 84 | S | 10 | 4.5 | | 8k;hz | Haze | Calm | | 0 | 0 | Hazy | |
| Portland, Oregon | 30.08 | 764.0 | 30.19 | 766.8 | 40 | 4.4 | 91 | E | 4 | 1.8 | | | 10s | | W | 0 | 0 | Cloudy | |
| Prescott, Arizona | 24.77 | 629.2 | 30.13 | 765.3 | 29 | — 1.7 | 56 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Punta Rassa, Florida | 29.84 | 757.9 | 29.86 | 758.4 | 73 | 22.8 | 95 | S | 24 | 10.7 | | | 10s | | Calm | 0.46 | 11.7 | Threatening | |

UNITED STATES SERIES.—CONTINUED

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Red Bluff, California | 29.57 | 751.1 | 29.92 | 760.0 | 54 | 12.2 | 43 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Rochester, New York | 29.22 | 742.2 | 29.82 | 757.4 | 55 | 12 8 | 68 | S | 10 | 4.5 | ..... | ..... | 10s | ..... | SW | 0.18 | 4.6 | Cloudy | |
| Roseburg, Oregon | 29.60 | 751.8 | 30.19 | 766.8 | 35 | 1.7 | 95 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sacramento, California | 29.82 | 757.4 | 29.91 | 759.7 | 51 | 10.6 | 86 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.22 | 742.2 | 29.79 | 756.7 | 47 | 8.3 | 62 | S | 12 | 5.4 | ..... | 2c | 0 | Calm | ..... | Inap. | Inap. | Clear | |
| St. Marks, Florida | 29.86 | 758.4 | 29.87 | 758.7 | 65 | 18.3 | 94 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 1.43 | 36.3 | Clear. | |
| St. Paul, Minnesota | 27.96 | 710.2 | 28.74 | 730.0 | 40 | 4.4 | 82 | SW | 13 | 5.8 | ..... | ..... | 10n | ..... | SW | 0.19 | 4.8 | Light rain | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.69 | 652.5 | 30.02 | 762.5 | 33 | 0.6 | 42 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Antonio, Texas | 29.18 | 741.2 | 29.76 | 755.9 | 59 | 15.0 | 88 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Diego, California | 29.92 | 760.0 | 29.99 | 761.7 | 59 | 15.0 | 88 | E | 2 | 0.9 | ..... | ..... | 10n | ..... | Calm | 0.08 | 2.0 | Cloudy | |
| Sandusky, Ohio | 29.03 | 737.3 | 29.67 | 753.6 | 58 | 14.4 | 76 | W | 16 | 7.2 | ..... | ..... | 10ks | ..... | SW | 0.11 | 2.8 | Cloudy | |
| Sandy Hook, New Jersey | 30.12 | 765.0 | 30.15 | 765.8 | 45 | 7.2 | 92 | E | 24 | 10.7 | ..... | ..... | 10ks | ..... | SE | 0.05 | 1.3 | Threatening | |
| San Francisco, California | 29.89 | 759.2 | 29.96 | 761.0 | 54 | 12.2 | 87 | W | 6 | 2.7 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Clear | |
| Santa Fé, New Mexico | 23.19 | 589.0 | 29.73 | 755.1 | 27 | — 2.8 | 42 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 29.77 | 756.1 | 29.86 | 758.4 | 68 | 18.9 | 89 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | NW | 3.51 | 89.2 | Cloudy | |
| Shreveport, Louisiana | 29.71 | 754.6 | 29.93 | 760.2 | 58 | 14.4 | 64 | NE | 4 | 1.8 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Smithville, North Carolina | 29.77 | 756.1 | 29.80 | 756.9 | 66 | 18.9 | 89 | S | 33 | 14.8 | ..... | ..... | 10s | ..... | S | 0.48 | 12.2 | Cloudy | |
| Springfield, Massachusetts | 30.01 | 762.2 | 30.14 | 765.5 | 45 | 7.2 | 76 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Stockton, Texas | 26.84 | 681.7 | 29.84 | 757.9 | 53 | 11.7 | 60 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 30.16 | 766.1 | 30.22 | 767.6 | 45 | 7.2 | 84 | S | 8 | 3.6 | ..... | 2k | 5s | W | W | 0 | 0 | Fair | |
| Toledo, Ohio | 28.99 | 736.3 | 29.64 | 752.8 | 55 | 12.8 | 74 | SW | 10 | 4.5 | ..... | ..... | 10s | ..... | SW | 0.08 | 2.0 | Cloudy | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 57 | 13.9 | 81 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tybee Island, Georgia | 29.83 | 757.7 | 29.86 | 758.4 | 65 | 18.3 | 94 | W | 6 | 2.7 | ..... | ..... | 10s | ..... | W | 4.36 | 110.7 | Threatening | |
| Umatilla, Oregon | 29.71 | 754.6 | ..... | ..... | 40 | 4.4 | 65 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Vicksburg, Mississippi | 29.63 | 752.6 | 29.88 | 758.9 | 64 | 17.8 | 73 | N | 5 | 2.2 | ..... | 10c | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Virginia City, Montana | 24.19 | 614.4 | 29.67 | 753.6 | 19 | — 7.2 | 69 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Visalia, California | 29.58 | 751.3 | 29.95 | 760.7 | 52 | 11.1 | 86 | S | 2 | 0.9 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Washington, D. C. | 29.90 | 759.4 | 30.01 | 762.2 | 54 | 12.2 | 97 | SE | 10 | 4.5 | ..... | ..... | 10n | ..... | SE | 0.93 | 23.6 | Heavy rain. | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 43 | 6.1 | 36 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 29.74 | 755.4 | 29.82 | 757.4 | 65 | 18.3 | 89 | SE | 14 | 6.3 | ..... | ..... | 10n | ..... | SE | 0.43 | 10.9 | Light rain | |
| Winnemucca, Nevada | 25.68 | 652.3 | 30.04 | 763.0 | 25 | — 3.9 | 75 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Wood's Holl, Mass | 30.17 | 766.3 | 30.22 | 767.6 | 44 | 6.7 | 67 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Yankton, Dakota | 28.08 | 713.2 | 29.35 | 745.5 | 34 | 1.1 | 94 | W | 32 | 14.3 | ..... | ..... | 10n | ..... | Calm | 2.06 | 52.3 | Light snow | |
| Yuma, Arizona | 29.76 | 755.9 | 29.92 | 760.0 | 59 | 15.0 | 81 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 30.06 | 763.5 | 30.11 | 764.8 | 13.0 | —10.6 | 91 | NE | 21 | 9.4 | ..... | 3c | 6s | E | ..... | 0 | 0 | Cloudy | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 29.88 | 758.9 | 29.90 | 759.4 | 81 | 27.2 | 82 | S | 3.6 | 1.6 | ..... | 8cs | 4n | SW | ..... | 0 | 0 | Cloudy | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.12 | 765.0 | 30.13 | 765.3 | 81 | 27.2 | 87 | SE | 17 | 7.6 | ..... | 8c | 2s | Calm | SE | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.88 | 758.9 | 29.96 | 761.0 | 82 | 27.8 | ..... | E | 15 | 6.7 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | 30.00 | 762.0 | 30.00 | 762.0 | 84 | 28.9 | 75 | NE | ..... | ..... | 3 | 4c | 5k | NE | ..... | 0 | 0 | Fair | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.24 | 641.1 | ..... | ..... | 71.0 | 21.7 | 72 | Calm | ..... | ..... | 0 | 1ks | 2c;cs | E | ..... | 0 | 0 | ..... | Thomas Herran. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medillin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,560 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,140.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,650 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er —10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.00 | 762.0 | 67 | 13.9 | 67 | 13.9 | 81 | SW | 15 | 6.7 | ..... | ..... | 2 | ..... | Calm | 0 | 0 | ..... | ..... | Fair | |
| Navy Yard, Pensacola, Fla. | 29.96 | 761.0 | 67 | 19.4 | 67 | 19.4 | 95 | SE | 0 | 0 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy | |
| Navy Yard, Portsmouth, N.H. | 30.21 | 767.3 | 69 | 20.6 | 44 | 6.7 | 84 | SSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy | |
| Naval Hospital, Yokohama, Japan | 30.19* | 766.8* | 58 | 14.4 | 45.8 | 7.7 | 88 | E | ..... | ..... | 5 | ..... | 10n | ..... | NE | 0.56 | 14.2 | ..... | ..... | Light rain | |
| Adams. Panama | 29.96 | 761.0 | 82 | 27.8 | 82 | 27.8 | 81 | W | ..... | ..... | 0-1 | ..... | 2 | ..... | ..... | ..... | ..... | Smooth | ..... | Misty | |
| Alliance. Villefranche, France | 29.91‡ | 759.7‡ | ..... | ..... | 64 | 17.8 | 58 | E | ..... | ..... | 0-1 | ..... | 5 | ..... | NNE | ..... | ..... | Light | S | Pleasant | |
| Ashuelot. Shanghai, China | 30.07 | 763.8 | 54 | 12.2 | 53 | 11.7 | 93 | NE | ..... | ..... | 3 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Heavy rain | |
| Canonicus, New Orleans, La. | 29.82 | 757.4 | 50 | 10.0 | 66 | 18.9 | 94 | ESE | ..... | ..... | 1 | ..... | 6 | ..... | N | ..... | ..... | ..... | ..... | Fair | |
| Colorado. New York, N. Y. | 30.14‡ | 765.5‡ | ..... | ..... | 45 | 7.2 | 92 | SE | 4 | 1.8 | ..... | ..... | 10 | ..... | SE | 0.06 | 1.5 | ..... | ..... | Drizzling | |
| Constellation, N. 41° 17′ W. 46° 20′ | 29.53‡ | 750.0‡ | ..... | ..... | 50 | 10.0 | 93 | N | ..... | ..... | 8 | ..... | 10 | ..... | N | ..... | ..... | Very Heavy | N | Threatening | |
| Constitution. Havre, France | 29.79‡ | 756.7‡ | ..... | ..... | 49 | 9.4 | 93 | E | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Raining | |
| Despatch, Constantinople, Turkey | 30.01‡ | 762.2‡ | ..... | ..... | 66 | 18.9 | 54 | SSE | ..... | ..... | 4 | ..... | 8 | ..... | SW | ..... | ..... | ..... | ..... | Cloudy | |
| Enterprise, Norfolk, Va | 30.02‡ | 762.5‡ | ..... | ..... | 57 | 13.9 | 94 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Fair | |
| Franklin, Norfolk, Va. | 30.10 | 764.5 | 71 | 21.7 | 60 | 15.6 | 82 | SE | 5 | 2.2 | ..... | ..... | 10 | ..... | SSE | 2. | 51. | ..... | ..... | Cloudy | |
| Gettysburg Valetta, Malta | 29.78‡ | 756.4‡ | ..... | ..... | 71 | 21.7 | 95 | WNW | ..... | ..... | 2 | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Cloudy | |
| Guard, Porto Grande, Cape Verde Islands | 30.04 | 763.0 | 75 | 23.9 | 75 | 23.9 | 72 | NE | ..... | ..... | 2 | ..... | 2 | ..... | NE | ..... | ..... | Smooth | ..... | Clear. | |
| Hartford, Montevideo, Uraguay | 30.11 | 764.8 | 63 | 17.2 | 58 | 14.4 | 64 | NNW | 13 | 5.8 | ..... | ..... | 8 | ..... | NNW | 0 | 0 | Smooth | ..... | Cloudy | |
| Marion, Volo Bay, Turkey | 29.95 | 760.7 | 68 | 20.0 | 67 | 19.4 | 69 | SSE | ..... | ..... | 1 | ..... | 10 | ..... | SW | 0 | 0 | Smooth | ..... | Cloudy | |
| Michigan, Erie, Pa. | 29.26 | 743.2 | 59 | 15.0 | 56 | 13.3 | 75 | SSW | ..... | ..... | 5 | ..... | 10 | ..... | SSW | ..... | ..... | ..... | ..... | Cloudy | |
| Monocacy. Shanghai, China | 29.87‡ | 758.7‡ | ..... | ..... | 51 | 10.6 | 93 | SE | ..... | ..... | 2 | ..... | 10 | ..... | E | ..... | ..... | ..... | ..... | Overcast | |
| New Hampshire, Port Royal, S. C. | 30.08† | 764.0† | ..... | ..... | 66 | 18.9 | 100 | W | 6 | 2.7 | ..... | ..... | 10 | ..... | W | 3.57 | 90.7 | ..... | ..... | Cloudy | |
| Omaha, N. 21° 30′ W. 66° 50′ | 30.18* | 766.6* | 77 | 25.0 | 75.5 | 24.2 | 66 | NNE | 4 | 1.8 | ..... | ..... | 3 | ..... | NE | 0 | 0 | Slight | NE | Bright | |
| Onward, Callao, Peru | 30.02† | 762.5† | ..... | ..... | 69 | 20.6 | 90 | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty | |
| Ossipee. Pensacola, Fla. | 29.89‡ | 759.2‡ | ..... | ..... | 69 | 20.6 | 100 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Misty | |
| Palos, Shanghai, China | 30.13* | 765.3* | 61 | 16.1 | 49 | 9.4 | 100 | ESE | ..... | ..... | 3 | ..... | 10 | ..... | S&E | ..... | ..... | ..... | ..... | Overcast | |
| Pensacola, N. 22° 45′, W. 157° 50′ | 30.22 | 767.6 | 73 | 22.8 | 71 | 21.7 | 80 | NE | 10 | 4.5 | ..... | ..... | 5 | ..... | NE | 0.01 | 0.3 | Smooth | NE | Pleasant | |
| Plymouth. Norfolk, Va. | 30.02‡ | 762.5‡ | ..... | ..... | 50 | 10.0 | ?? | ENE | ..... | ..... | 1-2 | ..... | 10 | .... | SE | ..... | ..... | ..... | ..... | Rain & fog | |
| Powhatan, Norfolk, Va. | 30.02‡ | 762.5‡ | ..... | ..... | 59 | 15.0 | 100 | E | 9.5 | 4.2 | ..... | ..... | 10 | ..... | E | 0.20 | 5.1 | ..... | ..... | Rainy | |
| Ranger. Takao, Formosa | 30.12* | 765.0* | ..... | ..... | 80.5 | 26.9 | 89 | Calm | ..... | ..... | 0 | ..... | 7 | ..... | Calm | ..... | ..... | Smooth | ..... | D. clouds | |
| Rio Bravo, Brownsville, Texas | 29.74 | 755.4 | 66 | 18.9 | 65 | 18.3 | 100 | E | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Cloudy | |
| Santee, Annapolis, Md | 30.02‡ | 762.5‡ | ..... | ..... | 53 | 11.7 | 93 | SE | ..... | ..... | 5 | ..... | 10 | ..... | S | 0.49 | 12.4 | ..... | ..... | Light rain | |
| Saratoga, Washington, D. C. | 29.97* | 761.2* | ..... | ..... | 55 | 12.8 | 100 | E | ..... | ..... | 2 | ..... | 10 | ..... | E | ..... | ..... | Mod'ate | Mod'ate | Cloudy | |
| St. Louis, League Island, Pa | 30.05 | 763.3 | 65 | 18.3 | 45 | 9.4 | 93 | ESE | 15 | 6.7 | ..... | ..... | 10 | ..... | NW | 0.73 | 18.5 | ..... | ..... | Heavy rain | |
| Supply, Havre, France | 29.86 | 758.4 | 54 | 12.2 | 51 | 10.6 | 93 | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Rainy | |
| Swatara, Aspinwall | 29.97 | 761.2 | 81 | 27.2 | 80 | 26.7 | 96 | S | ..... | ..... | 1 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Fair | |
| Tennessee, N. 11° 42′ E. 52° 43′ | 29.92* | 760.0* | 88 | 31.1 | 86 | 30.0 | 76 | SW | 1 | 0.4 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | Smooth | ..... | Hazy | |
| Trenton, Villefranche, France | 29.89‡ | 759.2‡ | ..... | ..... | 70 | 21.1 | 52 | Calm | ..... | ..... | 0 | ..... | 5 | ..... | ..... | 0 | 0 | Smooth | ..... | Clearing | |
| Tuscarora, Acapulco, Mexico | 25.65 | 753.1 | 78 | 25.6 | 79 | 26.1 | 54 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear | |
| Vandalia, Villefranche, France | 29.87‡ | 758.7‡ | ..... | ..... | 63 | 17.2 | 62 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | NW | ..... | ..... | ..... | ..... | Clear. | |
| Wabash, Boston, Mass. | 30.23‡ | 767.8‡ | ..... | ..... | 45 | 7.2 | 92 | SW | 6 | 2.7 | ..... | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Cloudy | |
| Wyoming, N. 33° 49′, W. 59° 53′ | 30.26* | 768.6* | ..... | ..... | 52 | 11.1 | 66 | NE | ..... | ..... | 4 | ..... | 10 | ..... | SSE | ..... | ..... | Rough | NE; NNW | Squally | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Upper | Low'r | Upper. | Lower. | Character. | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Peking, N. 37° 22', W. 166° 53' | | | 30.48† | 772.1† | 52 | 11.1 | 100 | S | 21.0 | 9.4 | | 8 | | S | | Smooth | Calm | Misty | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio, N. 34° 23', E. 162° 32' | | | | | 58 | 14.4 | | NE | | | 6 | | 10 | | ESE | Mod'ate | ENE | Overcast | Capt. Searle. |
| S. S. Colima, N. 23° 11', W. 110° 29' | | | 30.02† | 762.5† | 66 | 18.9 | 79 | NW | | | 4 | | 2 | | NW | Small | NW | D. clouds | Capt. Whitebury. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Austin. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic, N. 41° 19', W. 60° 23' | | | 30.17* | 766.3* | | | | N | | | 4 | | 4 | | NE | Mod'ate | N | Clear | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. W. H. Thompson. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic, N. 42° 20', W. 45° 13' | | | 29.22† | 742.2† | 52 | 11.1 | ?? | N | | | 7 | | 10 | | N | Cross | N; ENE | Squally | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. *Aneroid; corrected for elevation; instrumental error not known. †Aneroid.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, San Francisco, Cal. | | | 30.15* | 765.8* | | | | Var. | | | 3 | | Heavy | | NW | | | Overcast | Capt. John Metcalf. |
| S. S. Gaelic, Hong-Kong, China | | | 30.12† | 765.0† | 76 | 24.4 | 82 | ESE | | | 2 | | | | | | | D. clouds | Capt. W. H. Kidley |
| S. S. Oceanic, Yokohama, Japan | | | 30.02 | 762.5 | 50 | 10.0 | 93 | NNE | | | 0 | | 9 | | NNE | Mod'ate | NE | Showery | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg, N. 25° 08', W. 80° 09' | | | 29.92 | 760.0 | 79.0 | 26.1 | 89 | S | | | 2 | | clr | | SE | Smooth | S | D. clouds | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | Character. | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, N. 39° 41′, W. 49° 57′ | | | 29.63* | 752.6* | 46 | 7.8 | 84 | NNE | | | 0 | | 9 | | NNE | Heavy | NE | Cloudy | Captain Sargent. |
| S. S. Ohio, Philadelphia, Pa | | | 30.08 | 764.0 | 51 | 10.6 | 93 | ESE | | | 3 | | 10 | | Calm | | | Dull | Captain Morrison. |
| S. S. Pennsylvania, N. 41° 41′, W. 62° 40′ | | | 29.89* | 759.2* | 45 | 7.2 | 100 | N | | | 6 | | 8 | | N | Heavy | NE;N | Cloudy | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Corrected for temperature and elevation, instrumental error not known.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RED STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland, N. 42° 16′, W. 60° 57′ | | | 30.12 | 765.0 | | | | NW | 15 | 6.7 | | | 0 | | | Mod'ate | NE | Clear | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
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*Aneroid; regulated to standard at Antwerp.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ALLAN LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of A. Schumacher, & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| S. S. Scandinavian, N. 42° 0′, W. 65° 42′ | | | 30.29 | 769.4 | 34 | 1.1 | | WNW | | | 3 | | 10 | | | Mod'ate | ENE | Foggy | Capt. W. Richardson. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MARINE SERIES. (Miscellaneous.)** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller, Off Block Island, R. I. | | | 30.11 | 764.8 | 46 | 7.8 | 92 | SE | 10 | 4.5 | | | 10kts | | SE | Smooth | | Overcast | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 30.22 | 767.6 | — 1 | —18.3 | 91 | NW | 20.1 | 9.0 | | | 10kts | | W | | | Fair | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg$^{d}$,) Chief Signal Officer, U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 11, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the last 24 hours. Inches. | Rain-fall or melted snow in the last 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.11 | 764.8 | 66.4 | 19.1 | 83 | NE | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair. ... | Dr. Ollive. |
| Nemours | ..... | ..... | 30.15 | 765.8 | 71.6 | 22.0 | 69 | Calm | ..... | ..... | 0 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy..... | Michel. |
| Algiers | ..... | ..... | 29.99 | 761.8 | 69 1 | 20.6 | 62 | W | ..... | ..... | 7 | ..... | 2 | ..... | ..... | 0 | 0 | Fair..... | Towiliere. |
| La Calle | ..... | ..... | 29.97 | 761.2 | 59.4 | 15.2 | 81 | NW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0.039 | 1.0 | Cloudy..... | Boulangeot. |
| Tunis | ..... | ..... | 29.94 | 760.4 | 62 8 | 17 1 | 81 | NW | ..... | ..... | 5 | ..... | 9 | ..... | ..... | 0.532 | 13.5 | Covered..... | Jacques. |
| Sfax | ..... | ..... | 29.98 | 761.5 | 66 2 | 19.0 | ..... | Calm | ..... | ..... | 0 | ..... | 6 | ..... | ..... | 0.236 | 6.0 | Cloudy..... | Gau. |
| Saida | ..... | ..... | 30.15 | 765.8 | 64.4 | 18.0 | ..... | WNW | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0 | 0 | Fair ..... | Herbin. |
| Tebessa | ..... | ..... | 29.96 | 760.9 | ..... | ..... | ..... | NNW | ..... | ..... | 7 | ..... | 9 | ..... | ..... | 0 | 0 | Covered..... | Watrin. |
| Geriville | ..... | ..... | 30.20 | 767.1 | 64.8 | 18.2 | 82 | NW | ..... | ..... | 6 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy..... | Lemaillot. |
| Laghouat | ..... | ..... | 30.16 | 766.1 | 66.7 | 19.3 | 40 | NW | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair.. | Bertrand. |
| Biskra | ..... | ..... | 30.04 | 763.1 | 82.0 | 27.8 | 28 | NW | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0.039 | 1.0 | Fair..... | Chauvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.28 | 743.8 | 29.83 | 757.6 | 59.5 | 15.3 | 39 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozar |
| Cracow, I. R. Observatory | 29.25 | 742.9 | 30.02 | 762.6 | 48.9 | 9.4 | 74 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.016 | 0.4 | ..... | Dr. Wierzbiski. |
| Eperies | 29.03 | 737.3 | 29.88 | 759.0 | 65.1 | 18.4 | 50 | N | ..... | ..... | 3 | ..... | Scs | ..... | ..... | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.63 | 727.2 | 29.85 | 758.3 | 56.3 | 13.5 | 48 | S | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.41 | 721.6 | 29.82 | 757.4 | 53.8 | 12.1 | 65 | ESE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Rainy..... | Prof. Reissenberg |
| Kremsmünster | 28.55 | 725.1 | 29.91 | 759.7 | 44.6 | 7.0 | 85 | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.543 | 13.8 | ..... | Prof. C. Wagner |
| Lemberg | 28.98 | 736.1 | 29.97 | 761.2 | 52.5 | 11.4 | 61 | SE | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Dr. T. Stanecki. |
| Pola | 29.71 | 754 7 | 29.82 | 757.5 | 61.0 | 16 1 | 43 | WNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.46 | 748.3 | 29.93 | 760.1 | 55.0 | 12.8 | 70 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.079 | 2.0 | Raining..... | Johann Tamas, S. J. |
| Szegedin | 29.60 | 751.9 | 29.88 | 759.0 | 56.1 | 13.4 | 54 | S | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Karl Stancel. |
| Trieste | 29.74 | 755.4 | 29.84 | 758.0 | 60.4 | 15.8 | 55 | W | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Fair..... | P. Busin. |
| Vienna | 29.22 | 742.3 | 29.96 | 760.9 | 43.9 | 6.6 | 87 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0.402 | 10.2 | Raining ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.52 | 724.5 | 30.01 | 762.3 | 58.3 | 14.6 | 46 | E | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. M. Passau. |
| Brussels | 29.82 | 757.4 | 30.02 | 762.4 | 61.2 | 16.2 | 50 | ESE | ..... | ..... | 2 | ..... | 1 | ..... | ESE | 0 | 0 | ..... | Royal Observatory. |
| Furnes | 30.00 | 762.0 | 30.02 | 762.6 | 62.2 | 16.8 | 53 | ESE | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | M. E. de Cae. |
| Maeseyck | 29.94 | 760.4 | 30.07 | 763.6 | 60.8 | 16.0 | 55 | ESE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.24 | 768.1 | 30.34 | 770.6 | 45.4 | 7.4 | ..... | ENE | 12 | 5.4 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Blue sky..... | W. Buswell. |
| Ardrossan | 30.14 | 765.5 | 30.16 | 766.1 | 57 | 13.9 | ..... | NE | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | Hazy ..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.14 | 765.5 | 52.4 | 11.3 | ..... | E | 13 | 5.8 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.06 | 763.5 | 59.7 | 15.4 | ..... | E | 19 | 8.5 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 30.10 | 764.5 | 52.5 | 11.4 | ..... | NNE | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | J. L. E. Dreyer. |
| Bradford, Yorkshire | 29.68 | 753.9 | 30.07 | 763.8 | 56.5 | 13.6 | ..... | E | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0.01 | 0.3 | D. clouds..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.97 | 761.2 | 30.00 | 762.0 | 84.0 | 28.9 | ..... | NE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 30.06 | 763.5 | 62.0 | 16.7 | ..... | ESE | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | H. Todd. [H.C. |
| Cardington | ..... | ..... | 30.05 | 763.3 | 56.0 | 13.3 | ..... | E | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | John McLaren. |
| Chatham, School M. E. | 29.81 | 757.2 | 29.95 | 760.7 | 45.2 | 7.3 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.57 | 725.7 | 30.06 | 763.5 | 46.0 | 7.8 | ..... | N | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy..... | Alexander Watt. |
| Donaghadee | 30.11 | 764.8 | 30.14 | 765.5 | 55 | 12.8 | ..... | ESE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 29.98 | 761.5 | 30.00 | 762.0 | 50 | 10.0 | ..... | ENE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 30.07 | 763.8 | 61.3 | 16.3 | ..... | NE | 7.8 | 3.5 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds... | Thomas Mackereth. |
| Falmouth, Observatory | 29.84 | 757.9 | 30.07 | 763.8 | 52.6 | 11.4 | ..... | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy ..... | The Staff. |
| Fort Napier, (Natal) | 27.65 | 702.3 | 29.86 | 758.4 | 79.0 | 26.1 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky... | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.67 | 753.6 | 29.86 | 759.4 | 88 | 31.1 | ..... | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds... | |
| Galway, Queen's College | ..... | ..... | 30.04 | 763.0 | 52 | 11.1 | ..... | W | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.08 | 764.0 | 30.13 | 765.3 | 67.8 | 19.9 | ..... | W | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Corpl. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.98 | 761.5 | 30.19 | 766.8 | 50.8 | 10.4 | ..... | ENE | ..... | ..... | 6 | ..... | ..... | ..... | ..... | ..... | ..... | Blue sky..... | D. G. Maclean. |
| Great Yarmouth | 30.10 | 764.5 | 30.10 | 764.5 | 47 | 8.3 | ..... | E | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | Misty..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.87 | 758.7 | 30.04 | 763.0 | 46.3 | 7.9 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 2.52* | 71.6* | Raining..... | The Staff, for G. B. Airy. |
| Guernsey | 29.78 | 756.4 | 30.00 | 762.0 | 51 | 10.6 | ..... | WNW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds... | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 30.10 | 764.5 | 54 | 12.2 | ..... | NW | ..... | ..... | 2 | ..... | 4c | ..... | ..... | 0 | 0 | Fine..... | M. P. Moyle. |
| Holyhead | 30.02 | 762.5 | 30.07 | 763.8 | 55 | 12.8 | ..... | ENE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Tilston. |
| Jersey | 29.74 | 755.4 | 30.04 | 763.0 | 50.8 | 10.4 | ..... | WNW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 30.04 | 763.0 | 47.0 | 8.3 | ..... | ENE | 12 | 5.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | The Staff. |
| Kingstown | 30.08 | 764.0 | 30.11 | 764.8 | 50 | 10.0 | ..... | SE | ..... | ..... | 1 | ..... | 6 | ..... | ..... | Blank | Blank | D. clouds..... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 30.06 | 763.5 | 59.0 | 15.0 | ..... | SE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.74 | 755.4 | 29.81 | 757.2 | 65.0 | 18.3 | ..... | NW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Sgt. Fred. Travis, A. H. |
| Nairn | 30.18 | 766 6 | 30.28 | 769.1 | 56 | 13.3 | ..... | SE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | ¾ clouded... | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 29.95 | 760.7 | 72.8 | 22.7 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | C. S. Duncombe. |
| Nottingham, Observatory | 29.90 | 759.4 | 30.00 | 764.3 | 61.2 | 16.2 | ..... | SE | ..... | ..... | 3 | ..... | 3cjck;d | ..... | SE | 0 | 0 | D. clouds..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.52 | 749.8 | 30.05 | 763.3 | 54.5 | 12.5 | ..... | ENE | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.02 | 762.5 | 53 | 11.7 | ..... | E | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | Raining..... | Mr. Lucas. |
| Plymouth | 29.95 | 760.7 | 30.02 | 762.5 | 54.2 | 12.3 | ..... | NNW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | John Merrifield. |
| Roche's Point | 30.04 | 763.0 | 30.08 | 764.0 | 52 | 11.1 | ..... | NNW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Dull..... | W. Kennedy. |
| Saint Ann's Head | 29.87 | 758.7 | 30.03 | 762.7 | 53 | 11.7 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | John C. Walker. |
| Sandwick Manse, (Orkneys. | ..... | ..... | 30.38 | 771.6 | 51.2 | 10.7 | ..... | SE | 29 | 13.0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 29.74 | 755.4 | 70.4 | 21.3 | ..... | ENE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Sergt. W. H. Lyne. |
| Sheffield | 29.85 | 758.2 | 30.12 | 765.0 | 58.0 | 14.4 | ..... | NE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | Blue sky..... | W. F. Cooper. |
| Silloth Rectory | 30.11 | 764.8 | 30.14 | 765.5 | 63.6 | 17.6 | 43 | SE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.71 | 754.6 | 30.11 | 764.8 | 57.7 | 14.3 | ..... | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 30.24 | 768.1 | 51 | 10.6 | ..... | E | ..... | ..... | 5 | ..... | 2 | ..... | ..... | ..... | ..... | ¾ clouded... | John Sutherland. |
| Stratfield Turgiss | 29.79 | 756.7 | 30.01 | 762.2 | 48.0 | 8.9 | ..... | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Rev. C. H. Griffith, F.M. |
| Thurso | ..... | ..... | 30.34 | 770.6 | 51 | 10.6 | ..... | ESE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 30.06 | 763.5 | 55 | 12.8 | ..... | NW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 30.10 | 764.5 | 54.0 | 12.2 | ..... | SW | 7 | 3.1 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | Hazy..... | The Staff. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.73 | 755.1 | 64.0 | 17.8 | 86 | SE | ..... | ..... | 2 | ..... | 10kn | ..... | ..... | 0.04 | 1.0 | Light rain .. | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.79 | 756.7 | 29.97 | 761.2 | 78.6 | 25.9 | 61 | ESE | 19.0 | 8.5 | ..... | 4 | 4 | ..... | ESE | 0 | 0 | Squally..... | C. Meldrum. |
| Melbourne, Observatory | 30.22 | 767.6 | 30.31 | 769.9 | 57.0 | 13.9 | 86 | SE | 3 | 1.3 | ..... | ..... | 7 | ..... | W | 0 | 0 | Fine..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m. following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m. *Rain-fall from 5 p. m. of the 10th, until 1:40 p. m. of the 11th.

| MARINE SERIES. VESSELS. | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|
| S. S. Algeria | ..... | ..... | ..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | Capt. C. C. Prehn. [R. |
| S. S. Peruvian | ..... | ..... | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire, Queenstown, Ireland | Calm | 0 | Misty..... | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.23 | 666.2 | | | 73.8 | 23.2 | 88 | E | | | 1 | | Haze | | | Inap. | Inap. | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.23 | 767.8 | 30.28 | 769.0 | 51.4 | 10.8 | 69 | ESE | | | 2 | | 0 | | | | | | |
| Fanöe | 30.23 | 767.9 | 30.25 | 768.4 | 57.3 | 14.0 | 54 | ENE | | | 4 | | 2 | | | | | | |
| Godthaab, (Greenland) | 30.08 | 764.1 | 30.13 | 765.2 | 37.4 | 2.8 | 57 | Calm | | | 0 | | 9 | | | | | | |
| Stykkisholm, (Iceland) | 30.24 | 768.1 | 30.28 | 769.2 | 33.3 | 0.7 | 89 | W | | | 4 | | 5 | | | | | | |
| Thorshavn, (Faröe) | 30.10 | 772.2 | 30.44 | 773.1 | 49.0 | 9.8 | 86 | SE | | | 2 | | 8 | | | | | | |
| Vestervig | 30.12 | 765.0 | 30.29 | 769.3 | 55.8 | 13.2 | 89 | NE | | | 6 | | 0 | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.57 | 751.0 | 30.12 | 765.0 | 53.6 | 12 | 83 | NW | | | 1 | | 8 | | NW | 0.346 | 8.8 | Very cloudy | Collignon, Director. |
| Amiens, Normal School | | | | | | | | | | | | | | | | | | | Bonvarne, Director. |
| Avignon, Normal School | 29.82 | 757.5 | 29.99 | 759.5 | 69.4 | 20.8 | 43 | N | | | 2 | | 5 | | NNW | 0 | 0 | Cloudy | Mr. Giraud, Director |
| Bar-sur-Seine | 29.41 | 747.0 | 29.96 | 761.0 | 59.2 | 15.1 | 61 | NW | | | 2 | | 10ku | | | 0.039 | 1.0 | Covered | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 59.5 | 10.3 | 89 | ESE | | | 1 | | 10 | | ENE | 0.148 | 3.75 | Covered | Normal School. |
| Besançon | 29.06 | 738.1 | 29.94 | 760.4 | 62.2 | 16.8 | 64 | E | | | 2 | | 0 | | | Inap. | Inap. | Clear | Normal School. |
| Bourg-en-Bresse | 29.10 | 739.1 | 30.01 | 762.2 | 58.1 | 14.5 | 82 | W | | | 2 | | 10n | | W | 0.32 | 8. | Covered | Normal School. |
| Bourges, Normal School | 29.45 | 747.9 | 30.00 | 761.9 | 55.2 | 12.9 | 90 | SW | | | 2 | | 5 | | SW | 0.138 | 3.5 | Cloudy | A. Wagner, Director. |
| Brest, Naval Observatory | 29.80 | 757.0 | 30.02 | 762.5 | 52.7 | 11.5 | 65 | WNW | | | 3 | | 10 | | WNW | 0 | 0 | | The Staff. |
| Carcassonne, Normal School | 29.60 | 751.8 | 30.00 | 762.1 | 65.5 | 18.6 | 81 | W | | | 2 | | 5 | | W | 0.256 | 6.5 | Cloudy | Vateau, Director. |
| Caen | 29.94 | 760.5 | 30.02 | 762.4 | 55.4 | 13 | 68 | WSW | | | 1 | | 8 | | W | 0.83 | 21. | Very cloudy | Normal School. |
| Chartres, Normal School | 29.42 | 747.2 | 29.98 | 761.5 | 52.7 | 11.5 | 83 | N | | | 2 | | 10 | | N | 0.20 | 5. | Covered | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.65 | 753.0 | 29.96 | 761.0 | 60.8 | 16.0 | 49 | SSE | | | 3 | | 5ck | | | 0 | 0 | Cloudy | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.65 | 727.6 | 30.00 | 761.9 | 55.6 | 13.1 | 70 | W | | | 2 | | 10 | | W | 0.024 | 0.6 | Covered | Alluard, Director. |
| Commercy, Normal School | 29.10 | 739.1 | 29.97 | 761.3 | 56.8 | 13.8 | 52 | E | | | 2 | | 1 | | E | 0 | 0 | Clear | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.76 | 730.6 | 29.92 | 760.0 | 66.7 | 19.3 | 43 | NW | | | 4 | | 5 | | NW | 0 | 0 | ½ Covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 29.87 | 758.6 | 30.08 | 764.0 | 52.5 | 11.4 | 69 | NW | | | 2 | | 8 | | NW | 0.008 | 0.2 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.76 | 756.0 | 30.08 | 763.9 | 52.0 | 11.1 | 65 | NW | | | 2 | | 8 | | NW | 0.12 | 3. | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.02 | 737.2 | 29.93 | 760.3 | 58.6 | 14.8 | 70 | NNE | | | 1 | | 2 | | S | 0.740 | 18.8 | Slightly cl'dy | Voudez, Director. |
| Lorient, Naval Observatory | 30.02 | 762.4 | 30.11 | 764.9 | 52.5 | 11.4 | 75 | NW | | | 2 | | 10 | | | 0 | 0 | Covered | T. Carré, Director. |
| Mâcon, Normal School | 29.27 | 743.4 | 29.91 | 759.7 | 59.4 | 15.2 | 64 | S | | | 4 | | 10 | | S | 0.20 | 5 | Covered | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | 28.89 | 733.8 | 29.92 | 760.0 | 59.0 | 15 | 48 | NE | | | 2 | | 1 | | SW | 0 | 0 | Clear | Normal School. |
| Nismes, Normal School | 29.70 | 754.3 | 29.89 | 759.3 | 68.4 | 20.2 | 40 | NE | | | 4 | | 0 | | | 0 | 0 | Clear | Boyer, Director. |
| Orleans, Normal School | 29.55 | 750.5 | 29.93 | 760.2 | 59.0 | 15 | 95 | W | | | 2 | | 10 | | | 0.39 | 10. | Covered | Bernard, Director. |
| Paris, Observatory | 29.74 | 755.5 | 29.98 | 761.6 | 53.2 | 11.8 | 80 | NW | | | 1 | | 10 | | NW | 0.423 | 10.75 | Rainy | National Observatory. |
| Privas | 28.87 | 733.3 | 29.92 | 760.0 | 60.8 | 16 | 81 | NW | | | 2 | | 5 | | NW | 0 | 0 | Cloudy | Normal School |
| Puy de Dome (Summit) | | | | | | | | | | | | | | | | | | | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.09 | 764.2 | 30.12 | 765.0 | 58.3 | 14.6 | 48 | W | | | 3 | | 8 | | W | 0 | 0 | ¾ covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.94 | 760.4 | 30.02 | 762.6 | 52.7 | 11.5 | 76 | NW | | | 2 | | 10 | | | 0.331 | 8.4 | Covered | F. Lucard, Director. |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | M. H. Hercouet. |
| Tarbes, Normal School | 28.99 | 736.4 | 30.06 | 763.4 | 62.6 | 17 | 52 | WSW | | | 2 | | 10 | | | 0.16 | 4. | Raining | T. Hugues, Director. |
| Villefranche | 29.22 | 742.3 | 29.93 | 760.1 | 62.8 | 17.1 | 80 | S | | | 1 | | 10 | | S | 0.177 | 4.5 | Covered | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.82 | 757.3 | 29.84 | 758.0 | 79.5 | 26.4 | | | | | | | | | | 0 | 0 | | L'Abbé Marchési. |
| Lyons | | | 30.00 | 762.1 | 59.4 | 15.2 | | | | | | | 8 | | | | | Rainy | M. Jeys. |
| Marseilles, Observatory | | | 29.84 | 757.8 | 71.4 | 21.9 | 53 | NW | | | 4 | | 4 | | | 0 | 0 | Partly cl'dy | The Staff. |
| Mont-Louis | 24.85 | 631.2 | 30.17 | 766.2 | 46.9 | 7.9 | 56 | NW | 13.0 | 5.83 | | | 4 | | NW | 0.602 | 15.3 | | Mr. Falguère. |
| Nice | | | 29.89 | 759.1 | 63.7 | 17.6 | 72 | W | | | 1 | | 2 | | | 0 | 0 | Clear | Dr. A. Niepce. |
| Paris, Montsouris Obs'y † | 29.70 | 754.3 | 29.97 | 761.3 | 50.9 | 10.5 | 100 | WNW | | | 2 | | 10 | | | 0.453 | 11.5 | Raining | Marié Davy, Director |
| Perpignan | | | 30.01 | 762.2 | 65.7 | 18.7 | 55 | NW | 22.4 | 10.00 | | | 7 | | NW | 0.177 | 4.5 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 23.51 | 571.8 | | | 38.3 | 3.5 | | Calm | | | 0 | | 10 | | | 0.602 | 15.3 | Snowy | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.82 | 757.4 | 29.98 | 761.6 | 53.8 | 12.1 | 90 | WNW | | | 1 | | 10 | | | 0.366 | 9.3 | Raining | E. Renou. |
| Toulouse, Observatory | 29.38 | 746.2 | 30.10 | 764.6 | 57.2 | 14.0 | 90 | NW | | | 2 | | 10 | | | 0.026 | 0.65 | Raining | The Staff. |
| Tours | 29.84 | 757.8 | 30.03 | 762.8 | 57.9 | 14.4 | 60 | W | | | 1 | | 10 | | WNW | 0.031 | 0.8 | | C. Marquet. |
| Versailles, (near Paris) | | | 29.99 | 761.8 | 52.5 | 11.4 | 90 | NW | | | 1 | | 10 | | | 0.448 | 11.37 | Covered | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 29.93 | 760.1 | 29.95 | 760.7 | 62.4 | 16.9 | 97 | NNE | 4.7 | 2.1 | | ck | kn | SSW | | 0.327 | 8.3 | Covered | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône. †Observation approximated.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | |
| Berlin | | | | | | | | | | | | | | | | | | | |
| Breslau | 29.91 | 759.8 | 30.09 | 764.2 | 56.3 | 13.5 | 56 | SE | | | 1 | | 9 | | | 0.091 | 2.3 | Raining | Prof. Dr. Hoh. |
| Carlsruhe | 29.52 | 749.7 | 30.05 | 763.2 | 48.9 | 9.4 | 81 | SE | | | 2 | | 10 | | | 0.404 | 10.26 | | Prof. Arndt. |
| Cassel | 29.56 | 750.7 | 29.98 | 761.5 | 57.9 | 14.4 | 62 | NE | | | 3 | | 9 | | | 0.236 | 6.0 | | Royal University Obs'y |
| Crefeld | 29.49 | 749.1 | 30.10 | 764.6 | 58.6 | 14.8 | 57 | ENE | | | 2 | | 7 | | | 0.060 | 1.53 | Raining | Albert Senz. |
| Emden | 29.89 | 759.3 | 30.06 | 763.4 | 63.1 | 17.3 | 44 | NE | | | 5 | | 1k | NE | | | | | Dr. H. Möhl. |
| Frankfort on the Main | 30.16 | 766.1 | 30.20 | 767.0 | 57.7 | 14.3 | 61 | NE | | | 3 | | 0 | | | 0 | 0 | | Director Lose. |
| Friedrichshafen | 29.69 | 754.1 | 30.06 | 763.4 | 55.4 | 13 | 48 | NE | | | 2 | | 7 | | | 0 | 0 | | Prof. Prestel. |
| Hamburg | 28.53 | 724.6 | 29.97 | 761.1 | 54.3 | 12.4 | 46 | S | | | 2 | | 1 | | | 0.004 | 0.1 | | Physical Society. |
| Kiel | 30.11 | 764.8 | 30.18 | 766.6 | 55.0 | 12.8 | 65 | NE | | | 5 | | 0 | ENE | | 0.185 | 4.7 | | M. Wilhelm. |
| Königsberg, (Prussia) | 30.20 | 767.1 | 30.22 | 767.6 | 51.8 | 11.0 | 75 | NE | | | 6 | | 0 | | | 0 | 0 | Clear. | Captain F. Hegemann. |
| Köslin | 30.09 | 764.2 | 30.17 | 766.3 | 62.2 | 16.8 | 43 | NE | | | 2 | | 0 | | | 0 | 0 | | Prof. G. Karsten. |
| Leipsic, Observatory | | | 30.11 | 764.8 | 61.0 | 16.1 | | NE | | | 4 | | 2 | | | 0 | 0 | | Prof. E Luther |
| Memel, Naval School | 29.64 | 752 8 | 30.07 | 763.6 | 50.4 | 10.2 | 78 | NNE | | | 3 | | 2 | | | 0 | 0 | | H. Müller. |
| Neufahrwasser | 30.19 | 766.9 | 30.24 | 768.1 | 60.4 | 15.8 | 37 | ENE | | | 2 | | 10 | NE | | 0.063 | 1.6 | Raining | Prof. Bruhns. |
| Posen | 30.19 | 766.9 | 30.21 | 767.3 | 47.5 | 8.6 | 77 | N | | | 2 | | 0 | | | | | | Reinbrecht von Skalweit. |
| Strassburg Obs., (in Alsace | 29.87 | 758.6 | 30.16 | 766 0 | 53.2 | 11.8 | 80 | SW | | | 6 | | 0 | | | 0 | 0 | | A. Lothes. |
| Stuttgart | 29.44 | 747.8 | 29.99 | 761.7 | 59.7 | 15.4 | 48 | NE | | | 3 | | 7 | | | 0.157 | 4.0 | | Dr. Magener. |
| Treves, (Trier) | 29.04 | 737.6 | 29.97 | 761.3 | 53.1 | 14.5 | 48 | NE | | | 1 | | 3 | ENE | | 0 | 0 | | Dr. Schur. |
| Weissenburg, (Bavaria) | 29.39 | 746.5 | 29.91 | 759.7 | 62.4 | 16.9 | 38 | NE | | | 6 | | 5 | E | | 0.067 | 1.7 | Raining | Prof. Schoder. |
| Wustrow, Naval School | 28.48 | 723.5 | 29.99 | 761.8 | 48.4 | 9.1 | 71 | Calm | 0 | 0 | | | 3 | | | 0 | 0 | | Prof. Flesch. |
| | 30.24 | 768.1 | 30.28 | 769.1 | 48.0 | 8.9 | 73 | ENE | | | 2 | | 6ck | N | N | 0.012 | 0.3 | | Dr. Von Bebber. |
| German Naval Series. | | | | | | | | | | | | | 2 | | | 0 | 0 | | E. F. Schütz. |
| | | | | | | | | | | | | | | | | | | | |
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Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.30 | 744.3 | 29.69 | 754.0 | 72.9 | 22.7 | | SW | | | 2.5 | | | | | | | ⅛ clear | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.63 | 752.6 | 29.68 | 753 9 | 81.3 | 27.4 | 37 | WSW | 83? | 14.8? | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29 20 | 741.5 | 29.66 | 753.3 | 90.5 | 32.5 | 36 | SSW | | | | | 2 | SSE | | 0 | 0 | D. clouds | |
| Bombay | 29.70 | 754.3 | 29.74 | 755.3 | 83.3 | 28.5 | 71 | NW | 12 | 5.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.74 | 704.5 | 29.70 | 754.3 | 88.6 | 31.4 | 36 | NW | | | | | 0 | | | 0 | 0 | Dust-whirl. | |
| Lahore | 28.89 | 733.7 | 29.64 | 752.7 | 72.8 | 22.7 | 63 | NE | 4.4 | 2.0 | | | 2 | | | 0.09 | 2.3 | Blue sky | |
| Belgaum | 27.22 | 691.4 | 29.71 | 754.6 | 85.0 | 29.4 | 59 | W | 17 | 7.6 | | | 1 | | | 0 | 0 | D. clouds | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.73 | 729.6 | 29.62 | 752.3 | 79.8 | 26.6 | 44 | SE | 6.5 | 2.9 | | | 9 | | | 0.04 | 1.0 | | |
| Agra | 29.00 | 736.6 | 29.54 | 750.4 | 97.6 | 36.4 | 26 | SE | | | | | | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.67 | 728.3 | 29.69 | 754.0 | 94.5 | 34.7 | 27 | SW | 4.6 | 2.1 | | | 7 | NE | | 0 | 0 | D. clouds | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.26 | 743.1 | 29.62 | 752.3 | 96.1 | 35.6 | 41 | SSW | 4.7 | 2.1 | | | | | | | | | |
| Allahabad | 29.27 | 743.5 | 29.57 | 751.1 | 96.4 | 35.8 | 27 | Calm | 1.3 | 0.6 | | | | | | 0 | 0 | Blue sky | |
| Patna | 29.44 | 747.8 | 29.62 | 752.2 | 91.9 | 33.3 | 36 | E | 1.5 | 0.7 | | | | | | 0 | 0 | B ue sky | |
| Hazaribagh | 27.64 | 701.9 | 29.58 | 751.4 | 91.6 | 33.1 | 17 | N | 4.4 | 2.0 | | | 2 | E | E | 0 | 0 | | |
| Cuttack | 29.58 | 751.3 | 29.66 | 753.4 | 88.1 | 31.2 | 61 | SSW | 0.4 | 2.9 | | | 1 | | | 0 | 0 | | |
| Calcutta (Alipore) | 29.65 | 753.1 | 29.67 | 753.6 | 83.7 | 28.7 | 81 | SSW | 12 | 5.4 | | | 8 | | | 0 | 0 | D. clouds | |
| Goalpara | 29.32 | 744.7 | 29.71 | 754.7 | 71.9 | 22.2 | 81 | E | 10.2 | 4.6 | | | 2 | | S | 0 | 0 | D. clouds | |
| Chittagong | 29.69 | 754.2 | 29.78 | 756.5 | 83.9 | 28.8 | 78 | S | 11.4 | 5.1 | | | 2 | W | | 0.04 | 1.0 | D. clouds | |
| Sibsagar | 29.44 | 747.9 | 29.78 | 756.5 | 72.8 | 22.7 | 76 | S | 1.3 | 0 6 | | | 10 | | | 0 | 0 | Overcast | |
| Rangoon | | | | | | | | | | | | | 10 | SW | SW | 0.01 | 0.3 | Overcast | |
| Jubbulpore | 28.23 | 717.1 | 29.55 | 750.5 | 95.5 | 35.3 | 19 | NW | 5.2 | 2.3 | | | | | | | | | |
| | | | | | | | | | | | | | | | | 0 | 0 | Blue sky | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,962.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer, corrected for instrum'tal error and temperature. Inches. | Barometer, corrected for instrum'tal error and temperature. Millimeters | Barometer, reduced to sea-level. Inches. | Barometer, reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.41 | 747.0 | 29.82 | 757.3 | 62.8 | 17.1 | 26 | SW | 1.3 | 0.6 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 29.72 | 755.0 | 29.83 | 757.7 | 59.5 | 15.3 | 39 | SSE | 1.8 | 0.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.64 | 752.8 | 29.83 | 757.6 | 60.3 | 15.7 | 38 | E | 3.1 | 1.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.53 | 724.7 | 29.83 | 757.7 | 61.2 | 16.2 | 49 | S | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.33 | 745.0 | 29.85 | 758.1 | 62.8 | 17.1 | ..... | E | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 28.96 | 735.6 | 29.86 | 758.5 | 61.2 | 16.2 | 50 | SSW | 1.8 | 0.8 | ..... | ..... | 6 | SE | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 27.94 | 709.7 | 29.84 | 757.9 | 58.8 | 14.9 | 42 | NNE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.66 | 753.3 | 29.88 | 758.9 | 63.0 | 17.2 | 50 | Calm | ..... | ..... | 0 | ..... | 9 | W | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.69 | 754.0 | 29.85 | 758.3 | 63.0 | 17.2 | 41 | SW | 3.1 | 1.4 | ..... | ..... | 4 | SW | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.56 | 750.7 | 29.87 | 758.7 | 64.4 | 18.0 | 41 | NE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.56 | 750.7 | 29.81 | 757.2 | 67.1 | 19.5 | 23 | N | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 29.77 | 756.1 | 29.85 | 758.2 | 60.4 | 15.6 | 65 | W | 2.6 | 1.1 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 29.83 | 757.7 | 29.88 | 758.9 | 53.8 | 12.1 | 71 | N | 15.4 | 6.9 | ..... | ..... | 5 | W | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.32 | 719.2 | 29.87 | 758.6 | 54.5 | 12.5 | 87 | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.71 | 754.5 | 29.82 | 757.3 | 69.1 | 20.6 | 34 | NNE | ..... | ..... | 4 | ..... | 4 | NE | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.63 | 752.5 | 29.80 | 756.9 | 69.1 | 20.6 | 44 | SW | 3.1 | 1.4 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U. | 29.62 | 752.3 | 29.82 | 757.4 | 66.9 | 19.4 | 56 | SSW | ..... | ..... | 4 | ..... | 7 | SW | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 59.0 | 15.0 | 66 | WNW | 12.5 | 5.6 | ..... | ..... | 5 | ..... | ..... | 0.252 | 6.4 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.66 | 753.3 | 29.85 | 758.1 | 68.9 | 20.5 | 47 | NW | ..... | ..... | 4 | ..... | 2 | NW | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 28.92 | 734.6 | 29.80 | 757.0 | 67.3 | 19.6 | 67 | SW | 0 | 0 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.54 | 750 4 | 29.80 | 756.8 | 64.4 | 18.0 | 45 | N | 8.7 | 3.9 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.70 | 754.3 | 29.77 | 756.2 | 64.4 | 18.0 | 71 | SSE | ..... | ..... | 1 | ..... | 8 | NW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.28 | 743.6 | 29.83 | 757.7 | 64.0 | 17.8 | 57 | WNW | 6.9 | 3.1 | ..... | ..... | 5 | W | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nagasaki | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Tokei (Yeddo) | 30.35 | 770 9 | 30.42 | 772 6 | 46.2 | 7.9 | 83 | NE | 6.3 | 2.8 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | The Observatory. |
| Tokei (Yeddo) University | 30.27 | 768.8 | 30.38 | 771.5 | 46.7 | 8.2 | 83 | NE | 4 | 1.8 | ..... | 10cs | ..... | ..... | ..... | 0 | 0 | Cloudy | Prof. P. V. Veeder. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascallentes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 62.1 | 16.7 | 34 | N | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | L. Castillo, A. E. |
| Guadalajara | 25.06 | 636.5 | 30.13 | 765.4 | 43.7 | 6.5 | 58 | SW | 6.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | Prof. L. Perez. |
| Guanajuato | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 53.6 | 12.0 | 42 | N | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico | 23.12 | 587.2 | 29.66 | 753.3 | 50 9 | 10.5 | 40 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Slightly hazy | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 51.6 | 10.9 | 64 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | M. V. de Leon, M. E. |
| Puebla | 23.37 | 593.7 | 30.15 | 766 9 | 44.1 | 6.7 | 54 | NE | 3.1 | 1.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. R. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 29.89 | 759.2 | 29.90 | 759.4 | 76.1 | 24.5 | 92 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 29.94 | 760.5 | 29.97 | 761.2 | 78.8 | 26.0 | 76 | WNW | 3.4 | 1.5 | ..... | 0 | 10sk | ..... | SW | 0 | 0 | Covered | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 48.2 | 9.0 | 67 | SW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.32 | 592.4 | 30.10 | 764.5 | 44 6 | 7.0 | 57 | NNE | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | P. Spina. [M. M. D. D |
| Morelia | 24.02 | 611.5 | ..... | ..... | 50.0 | 10.0 | 66 | SW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | M. Tena, F. L. Param. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The elevation of Aguascallentes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.06 | 763.4 | 30.06 | 763.4 | 58.0 | 14.8 | ..... | E | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 30.11 | 764.8 | 30.17 | 766.2 | 56.7 | 13.7 | ..... | ENE | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 30.14 | 765.5 | 30.14 | 765.5 | 49.6 | 9.8 | ..... | ENE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 30.07 | 763.8 | 30.07 | 763.8 | 61.7 | 16.5 | 49 | E | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 30.06 | 763.4 | 30.10 | 764.6 | 62.8 | 17.1 | 48 | E | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | Light cloudy | H. v d Brink. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.37 | 771.4 | 30.43 | 772.8 | 55.8 | 13.2 | 41 | NNW | 2.0 | 0.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Brônо | 30.44 | 773.1 | 30.48 | 774.1 | 44.2 | 6.8 | 60 | Calm | 0 | 0 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 30.25 | 768.4 | 30.40 | 772.1 | 59.4 | 15.2 | 43 | ESE | 7 | 3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 30.39 | 771.9 | 30.43 | 773.0 | 36.0 | 2.2 | 96 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0.748 | 19.0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.46 | 748.3 | 29.65 | 753.2 | 61.9 | 16.6 | 96 | SSW | 7.4 | 3.3 | ..... | ..... | 9 | ..... | ..... | 0.315 | 8.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.21 | 741.8 | 30.23 | 767.7 | 65.3 | 18.5 | 63 | WNW | 8.0 | 3.6 | ..... | ..... | 4 | WNW | ..... | 0.130 | 3.3 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.11 | 764.9 | 30.20 | 767.1 | 66.2 | 19.0 | 78 | SSE | 3.8 | 1.7 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.89 | 759.1 | 30.24 | 768 2 | 62.4 | 16.9 | 71 | S | 4.9 | 2.2 | ..... | ..... | 5 | ..... | ..... | 0.280 | 7.1 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 29.70 | 754.3 | 29.77 | 756.1 | 63.7 | 17.6 | 94 | S | 21.7 | 9.7 | ..... | ..... | 10 | ..... | ..... | 0.740 | 18.8 | Raining | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, | | | | | | | | | | | | | | | | | | | |
| Mozambique, Mozambique | 29.76 | 756.0 | 29.77 | 756.2 | 76.1 | 24.5 | ..... | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 1 | ..... | Raining | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Rio Douro, | | | | | | | | | | | | | | | | | | | |
| S. 25° 58′, E. 32° 37′ | ..... | ..... | 30.00 | 762.0 | 78.8 | 26.0 | ..... | ESE | ..... | ..... | 5 | ..... | 1 | ..... | ESE | 4 | E | D. clouds | J. T. d'Oliveria, Com'd't. |
| Sado, | | | | | | | | | | | | | | | | | | | |
| Porto Praya, Cape Verde Islands. | 30.08* | 764.0* | 30.09* | 764.3* | 85.6 | 29.8 | ..... | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 2 | NE | Blue sky | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, | | | | | | | | | | | | | | | | | | | |
| St. Paul de Loanda, Lower Guinea | 29.74 | 755.4 | 29.75 | 755.6 | ..... | ..... | ..... | NW | ..... | ..... | 2 | ..... | 5 | ..... | NW | 1 | ..... | Blue sky | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreina,dos Amas,Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.63 | 752.5 | 30.05 | 763.2 | 57.2 | 14.0 | 55 | E | 7 | 3 | ..... | ..... | 8ks;c | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.75 | 755.6 | 30.17 | 766.2 | 59.7 | 15.4 | 33 | Calm | 0 | 0 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Light clouds | Astronomical Obs. |
| Dorpat | 30.02 | 762.4 | 30.26 | 768.6 | 55.2 | 12.9 | 45 | NW | 11 | 5 | ..... | ..... | 1c | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Wellrauch. |
| St. Petersburg | 30.21 | 767.3 | 30.23 | 767.7 | 50.5 | 10.3 | 48 | N | 11 | 5 | ..... | ..... | 1ks | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.98 | 761.6 | 30.31 | 769.9 | 46.8 | 8.2 | 65 | N | 7 | 3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Ch. Forsten. |
| Kieff | 29.34 | 745.3 | 29.98 | 761.5 | 53.4 | 11.9 | 56 | NNE | 7 | 3 | ..... | ..... | 9k;ks;c | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.89 | 759.2 | 29.96 | 761.0 | 50.6 | 10.0 | 92 | NE | 18 | 8 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Raining | Kurdakof. |
| Kertch | 29.94 | 760.4 | 29.96 | 760.9 | 57.9 | 14.4 | 87 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.40 | 746.8 | 29.95 | 760.7 | 54.9 | 12.7 | 46 | N | 9 | 4 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.68 | 753.8 | 29.88 | 759.0 | 55.2 | 12.9 | 57 | W | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 30.18 | 766.5 | 30.20 | 767.0 | 28.4 | — 2.0 | 92 | NNW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.61 | 726.8 | 30.00 | 762.0 | 68.5 | 20.3 | 48 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.08 | 764.1 | 30.00 | 762.0 | 59.5 | 15.3 | 36 | S | 9 | 4 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Krotkowo* | 29.26 | 743.3 | 29.73 | 755.2 | 54.3 | 12.4 | 66 | SW | 7 | 3 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.40 | 746.8 | 29.67 | 753.5 | 60.3 | 15.7 | 31 | W | 7 | 3 | ..... | ..... | 5ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.58 | 725.9 | 29.52 | 749.9 | 42.4 | 5.8 | 70 | W | 22 | 10 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.90 | 759.5 | 30.13 | 765.4 | 59.4 | 15.2 | 70 | N | 2 | 1 | ..... | ..... | 1k | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.45 | 722.5 | 30.15 | 765.5 | 56.1 | 13.4 | 46 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light clouds | Michelson. |
| Barnaul | 29.45 | 748.0 | 29.99 | 761.8 | 31.6 | — 0.3 | 98 | SW | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Meteorological Obs. |
| Yeniseisk | 29.67 | 753.6 | 30.00 | 762.1 | 26.1 | — 3.3 | 68 | S | 4 | 2 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 29.95 | 760.7 | 30.09 | 764.3 | 56.5 | 13.6 | 57 | S | 2 | 1 | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.55 | 699.7 | 29.61 | 752.2 | 39.2 | 4.0 | 75 | NE | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Meteorological Obs. |
| Vladivostock | 30.28 | 769.2 | 30.38 | 771.7 | 37.9 | 3.3 | 82 | NE | 4 | 2 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 14.0 | —10.0 | 61 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.88 | 758.9 | 29.98 | 761.6 | 58.6 | 14.8 | 76 | SSE | 3.0 | 1.33 | ..... | 0 | 1k | ..... | ..... | 0.150 | 3.96 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.13 | 765.4 | 30.19 | 766.8 | 59.7 | 15.4 | 88 | NW | 2.4 | 1.08 | ..... | ..... | 10 | ..... | ..... | 0.220 | 5.6 | Covered | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.19 | 690.6 | ..... | ..... | 61.5 | 16.4 | 73 | W | 8.5 | 3.78 | ..... | 1 | 5 | N | ..... | 0 | 0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.91 | 709.0 | 30.10 | 764.6 | 66.7 | 19.3 | 50 | W | 13.4 | 6.00 | ..... | 0 | 7 | ..... | ..... | 0.079 | 2.0 | Cloudy | The Staff. |
| Murcia, Met. Obs'y | 29.92 | 759.9 | 30.07 | 763.6 | 72.5 | 26.4 | 38 | NW | 4.5 | 2.03 | ..... | 3 | 5 | E | ..... | ..... | ..... | Cloudy | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.29 | 743.9 | 30.18 | 766.6 | 61.3 | 16 3 | 81 | SW | 8.7 | 3.89 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Covered | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.88 | 758.9 | 29.94 | 760.6 | 81.2 | 27.4 | 84 | S | 6.7 | 3.0 | ..... | 0 | 3k | ..... | SW | 0 | 0 | Fair | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 30.15 | 765.9 | 30.25 | 768.4 | 64.9 | 18.3 | 79 | W | 15.0 | 6.7 | ..... | 0 | 3 | ..... | W | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W.I. | 29.93 | 760.1 | 30.02 | 762 4 | 78.4 | 25.8 | 78 | SE | 0 | 0 | ..... | 1s | 0 | E | ..... | 0 | 0 | Clear. | Leonardo de Tejeda, Chief of Engineers. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATION. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.49 | 774.5 | 30.53 | 775.5 | 43.2 | 6.2 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.43 | 772.8 | 30.54 | 775.8 | 47.5 | 8.6 | 55 | E | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.40 | 772.2 | 30.45 | 773.5 | 46.8 | 8.2 | 44 | E | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 30.24 | 768.1 | 30.42 | 772.6 | 58.3 | 14.6 | 46 | NNE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 30.22 | 767.6 | 30.28 | 769.1 | 44.2 | 6.8 | 80 | NE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 30.29 | 769.4 | 30.37 | 771.3 | 55.9 | 13.3 | 46 | NNW | 11.0 | 4.9 | ..... | ..... | 0 | ..... | ..... | 0.002 | 0.05 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.55 | 725.2 | 29.99 | 761.7 | 50.4 | 10.2 | 68 | NNE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.256 | 6.5 | Covered | The Observatory. |
| Zurich | 28.34 | 719.7 | 29.97 | 761.1 | 56.1 | 13.4 | 46 | E | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0.020 | 0.5 | Clear | The Observatory. |
| " | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| " | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +1.0 mm.; Thermometer, —1.1 cent.; Relative Humidity, +10 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.80 | 756.8 | 69.8 | 21.0 | 47 | ENE | 15 | 6.5 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanidès. |
| Varna | ..... | ..... | 29.82 | 757.5 | 66.5 | 13.6 | ..... | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.83 | 21. | Raining | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | Imperial Observatory. |
| Beirut, (Syria,) Lee Obs'y | 29.76 | 755.9 | 29.87 | 758.8 | 79.0 | 26.1 | 43 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.94 | 760.5 | 30.01 | 762.2 | 34.1 | 1.2 | 74 | Calm | 0 | 0 | ..... | 7k | 0 | ..... | ..... | ..... | ..... | Fair | Hon. J. Ferguson. |
| Brockville, Ontario | 29.42 | 747.3 | 29.72 | 754.9 | 52 | 11.1 | ..... | Calm | 0 | 0 | ..... | ..... | 10s | ..... | SW | 0.27 | 6.9 | Cloudy | W. R. Bigg. |
| *Chatham, N. B | 29.97 | 761.2 | 30.03 | 762.7 | 34 | 1.1 | 74 | NE | 5 | 2.2 | ..... | 2ck | 0 | N | ..... | Inap | Inap. | Fair | G. A. Blair. |
| Charlottetown, P. E. Island | 30.00 | 762.0 | 30.04 | 763.0 | 37 | 2.8 | 75 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.48 | 748.8 | 29.67 | 753.6 | 50.8 | 10.4 | 98 | SW | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0.286 | 7.26 | Raining | James Smith, M. A. |
| Dalhousie, N. B. | 29.99 | 761.7 | 30.02 | 762.5 | 32.8 | 0.4 | 88 | SE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast | H. A. Johnson. |
| Esquimault, B. C | 30.04 | 763.0 | 30.05 | 764.3 | 38.1 | 3.4 | 82 | N | ..... | ..... | ..... | 1ck | 0 | ..... | ..... | 0 | 0 | Overcast | H. A. Johnson. |
| *Father Point, Quebec | 29.88 | 758.9 | 29.90 | 759.4 | 36 | 2.2 | 85 | NE | 21 | 9.4 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Clear | W. H. Bevis. |
| Fredericton, N. B | 29.96 | 761.0 | 30.02 | 762.5 | 36.0 | 2.2 | 80 | E | 3 | 1.3 | ..... | ..... | 10s | Calm | ..... | 0 | 0 | Cloudy | J. McWilliams. |
| *Fort Garry Manitoba | 28.32 | 719.3 | 29.14 | 740.1 | 32 | 0.0 | 100 | NW | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | 0.160 | 4.06 | Cloudy | Prof. Harrison. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.350 | 8.89 | Sleeting | James Stewart. |
| Granton, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| *Halifax, N. S | 28.58 | 725.9 | 29.67 | 753.6 | 48 | 8.9 | 63 | SW | ..... | ..... | 2 | 2cs | 0 | E | ..... | 0 | 0 | Clear | James Grant. |
| Hamilton, Ontario | 29.85 | 758.2 | 29.99 | 761.7 | 42 | 5.6 | 64 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | F. Allison, M. A. |
| Heart's Content, N. F | 29.33 | 745.0 | 29.69 | 754.1 | 50.2 | 10.1 | 71 | SW | ..... | ..... | 1 | 0 | ..... | ..... | ..... | 0 | 0 | Clear | Geo. Dickson, M. A. |
| *Kingston, Ontario | 29.56 | 750.8 | 29.58 | 751.3 | 35 | 1.7 | 100 | N | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine | E. Weedon. |
| Little Glace Bay, N. S | 29.38 | 746.2 | 29.71 | 754.6 | 48 | 8.9 | 93 | SW | 6 | 2.7 | ..... | ..... | Fog | ..... | SW | 0.49 | 12.4 | Light rain | S. Woods, M. A. |
| *Montreal, Quebec | 29.97 | 761.2 | 30.01 | 762.2 | 34.0 | 1.1 | ..... | NW | 8 | 3.6 | ..... | 2k | 0 | NW | ..... | 0 | 0 | Fair | C. H. Rigby. |
| *Parry Sound, Ontario | 29.63 | 750.0 | 29.73 | 755.1 | 49 | 9.4 | 100 | S | 16 | 7.2 | ..... | ..... | 10n | ..... | ..... | 0.31 | 7.9 | Light rain | C. H. McLeod, C. E. |
| Peterboro, Ontario | 28.93 | 734.8 | 29.62 | 752.3 | 48 | 8.9 | 81 | S | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0.27 | 6.9 | Clear | Rev. R. Mosley. |
| Port Dover, Ontario | 28.91 | 735.1 | 29.68 | 753.9 | 49.7 | 9.8 | 85 | SW | ..... | ..... | ..... | 2c | 4ks | ..... | ..... | 0 | 0 | Hazy | J. F. Jeffers, B. A. |
| Port Hastings, N. S | 29.02 | 737.1 | 29.71 | 754.6 | 46 | 7.8 | 86 | SW | 2 | 0.9 | ..... | 2c | 0 | SW | ..... | 0.04 | 1.0 | Fair | H. Morgan. |
| Port Stanley, Ontario | 29.98 | 761.5 | 30.03 | 762.7 | 30.9 | 0.6 | ..... | W | 2 | 0.9 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| *Quebec, Quebec | 29.08 | 738.6 | 29.73 | 755.1 | 43 | 6.1 | 85 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | M. Payne. |
| *Rockliffe, Ontario | 29.53 | 750.0 | 29.86 | 758.4 | 36 | 2.2 | 90 | NE | ..... | ..... | 7 | ..... | 10n | ..... | NE | 0.04 | 1.0 | Light rain | Capt. Ashe, R. N. |
| St. Andrews, N. B | 29.19 | 741.4 | 29.65 | 753.1 | 47 | 8.3 | 100 | SE | 3 | 1.3 | ..... | ..... | Fog | ..... | ..... | 0.26 | 6.6 | Foggy | W. H. McIntyre. |
| St. John, N. B | 29.93 | 760.2 | 29.98 | 761.5 | 39 | 3.9 | 90 | SW | 2 | 0.9 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | Dr. Gove. |
| *Saugeen, Ontario | 29.84 | 757.9 | 30.01 | 762.2 | 35 | 1.7 | 90 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | ..... | 0.010 | 0.25 | Overcast | G. Murdock, C. E. |
| Stayner, Ontario | 28.90 | 734.0 | 29.61 | 752.1 | 50 | 10.0 | 81 | SW | 12 | 5.4 | ..... | 2cs | 0 | SW | ..... | 0 | 0 | Clear | K. Stewart. |
| Stratford, Ontario | 28.85 | 732.8 | 29.61 | 752.1 | 52 | 11.1 | 51 | W | 10 | 4.5 | ..... | 5c | 0 | ..... | ..... | 0.07 | 1.8 | Fair | R. J. Cole. |
| *Sydney, C. B | 28.40 | 721.3 | 29.67 | 753.6 | 46.2 | 7.9 | 64 | SW | 12 | 5.4 | ..... | 2cs | ..... | SW | ..... | 0 | 0 | Clear | C. J. MacGregor, M. A. |
| *Toronto, Ontario | 29.98 | 761.5 | 30.01 | 762.2 | 37 | 2.8 | 65 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | T. C. Hill. |
| Windsor, N. S | 29.32 | 744.7 | 29.71 | 754.6 | 44 | 6.7 | 92 | SE | 5 | 2.2 | ..... | ..... | 8n | ..... | E | 0.07 | 1.8 | Foggy | Magnetic Observatory. |
| Woodstock, Ontario | 29.92 | 760.0 | 30.02 | 762.5 | 36.0 | 2.2 | 90 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | J. Montgomery. |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 33.0 | 0.6 | 89 | N | ..... | ..... | ..... | ..... | 10 | ..... | ..... | Inap. | Inap. | Stormy | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrumental error and temperature. Inches. | BAROMETER. Corrected for instrumental error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0–10. | CLOUDS. Amount. Up'er 0–10 | CLOUDS. Amount. Low'r 0–10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.56 | 750.8 | 29.78 | 756.4 | 53 | 11.7 | 86 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Alpena, Michigan | 28.82 | 732.0 | 29.45 | 748.0 | 47 | 8.3 | 48 | SW | 16 | 7.2 | ..... | 0 | 8s | ..... | SW | 0 | 0 | Fair | |
| Atlantic City, New Jersey | 29.77 | 756.1 | 29.79 | 756.7 | 51 | 10.6 | 93 | SE | 17 | 7.6 | ..... | ..... | 10s | ..... | Calm | 0.26 | 6.6 | Threatening | |
| Augusta, Georgia | 29.64 | 752.8 | 29.82 | 757.4 | 65 | 18.3 | 84 | Calm | 0 | 0 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair | |
| Baltimore, Maryland | 29.69 | 754.1 | 29.74 | 755.4 | 57 | 13.9 | 100 | SE | 3 | 1.3 | ..... | ..... | 10n;fg | ..... | Calm | 0.37 | 9.4 | Light rain | |
| Barnegat, New Jersey | 29.77 | 756.1 | 29.79 | 756.7 | 51 | 10.6 | 93 | SE | 18 | 8.0 | ..... | ..... | 10n | ..... | SE | 0.04 | 1.0 | Light rain | |
| Bismarck, Dakota | 27.64 | 702.0 | 29.49 | 749.0 | 35 | 1.7 | 53 | NW | 8 | 3.6 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Boise City, Idaho | 27.08 | 687.8 | 29.96 | 761.0 | 48 | 8.9 | 62 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Boston, Massachusetts | 29.77 | 756.1 | 29.92 | 760.0 | 44 | 6.7 | 92 | SE | 3 | 1.3 | ..... | ..... | 10s;hz | ..... | SW | Inap. | Inap. | Cloudy | |
| Brackettville, Texas | 28.90 | 734.0 | 29.94 | 760.5 | 55 | 12.8 | 55 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 28.30 | 718.8 | 29.28 | 743.7 | 35 | 1.7 | 80 | W | 21 | 9.4 | ..... | 5cs | 0 | NW | ..... | 0.54 | 13.7 | Fair | |
| Brownsville, Texas | 29.93 | 760.2 | 30.00 | 762.0 | 64 | 17.8 | 88 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 28.98 | 736.1 | 29.65 | 753.1 | 46 | 7.8 | 92 | S | 4 | 1.8 | ..... | 0 | 1s | ..... | SW | 0.13 | 3.3 | Clear | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 60 | 15.6 | 49 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.52 | 749.8 | 29.77 | 756.1 | 53 | 11.7 | 86 | S | 8 | 3.6 | ..... | ..... | 10n | ..... | S | 0.01 | 0.3 | Light rain | |
| Cairo, Illinois | 29.52 | 749.8 | 29.91 | 759.7 | 54 | 12.2 | 43 | SW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Grant, Arizona | 25.21 | 640.3 | 30.01 | 762.2 | 54 | 12.2 | 38 | NE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | 26.82 | 681.2 | 30.31 | 769.9 | 41 | 5.0 | 57 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.42 | 696.5 | 29.99 | 761.7 | 49 | 9.4 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Cape Hatteras, N. Carolina | 29.80 | 756.9 | 29.81 | 757.2 | 59 | 15.0 | 100 | W | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 2.80 | 71.1 | Light rain | |
| Cape Henry, Virginia | 29.70 | 754.4 | 29.72 | 754.9 | 57 | 13.9 | 100 | W | 3 | 1.3 | ..... | ..... | 10n | ..... | SW | 0.90 | 22.9 | Light rain | |
| Cape Lookout, N. Carolina | 29.80 | 756.9 | 29.82 | 757.4 | 62 | 16.7 | 88 | W | 6 | 2.7 | ..... | 0 | 2s | ..... | Calm | 0.55 | 14.0 | Fair | |
| Cape May, New Jersey | 29.73 | 755.1 | 29.76 | 755.9 | 54 | 12.2 | 93 | NE | 14 | 6.3 | ..... | ..... | 10s | ..... | ..... | 0.18 | 4.6 | Cloudy | |
| Charleston, South Carolina | 29.80 | 756.9 | 29.86 | 758.4 | 67 | 19.4 | 89 | SW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 23.80 | 604.5 | 29.74 | 755.4 | 42 | 5.6 | 58 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 28.91 | 734.3 | 29.58 | 751.3 | 49 | 9.4 | 51 | S | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cincinnati Ohio | 29.14 | 740.1 | 29.78 | 756.4 | 52 | 11.1 | 54 | SE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cleveland, Ohio | 29.03 | 737.3 | 29.74 | 755.4 | 51 | 10.6 | 46 | SW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Concho, Texas | 28.06 | 712.7 | 29.76 | 755.9 | 47 | 8.3 | 26 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Corsicana, Texas | 29.55 | 750.6 | 30.03 | 762.7 | 45 | 7.2 | 76 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Davenport, Iowa | 28.98 | 736.1 | 29.60 | 751.8 | 45 | 7.2 | 53 | SW | 9 | 4.0 | ..... | Haze | 4s | Calm | SW | 0.02 | 0.5 | Fair | |
| Deadwood, Dakota | 25.12 | 638.0 | ..... | ..... | 39 | 3.9 | 64 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Denison, Texas | 29.20 | 741.7 | 30.01 | 762.2 | 50 | 10.0 | 65 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denver, Colorado | 24.58 | 624.3 | 29.80 | 756.9 | 53 | 11.7 | ..... | NW | 16 | 7.2 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| Detroit, Michigan | 29.00 | 736.6 | 29.66 | 753.4 | 48 | 8.9 | 56 | SW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dodge City, Kansas | 27.26 | 692.4 | 29.55 | 750.6 | 42 | 5.6 | 74 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 28.81 | 731.8 | 29.50 | 749.3 | 42 | 5.6 | 58 | SW | 8 | 3.6 | ..... | 5c | Haze | NW | Calm | 0.14 | 3.6 | Fair | |
| Duluth, Minnesota | 28.48 | 723.4 | 29.13 | 739.9 | 39 | 3.9 | 82 | SW | 6 | 2.7 | ..... | ..... | 10s | ..... | SW | 0.33 | 8.4 | Cloudy | |
| Eagle Pass, Texas | 29.30 | 744.2 | 30.04 | 763.0 | 61 | 16.1 | 66 | Calm | 0 | 0 | ..... | 10k | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Eastport, Maine | 29.92 | 760.0 | 29.98 | 761.5 | 40 | 4.4 | 82 | SW | 2 | 0.9 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light rain | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 64 | 17.8 | 47 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 28.99 | 736.3 | 29.68 | 753.9 | 54 | 12.2 | 55 | W | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0.09 | 2.3 | Clear | |
| Escanaba, Michigan | 28.66 | 728.0 | 29.29 | 744.0 | 40 | 4.4 | 91 | SW | 13 | 5.8 | ..... | ..... | 10n | ..... | SW | 0.08 | 2.0 | Light rain | |
| Florence, Arizona | 28.30 | 718.8 | 29.90 | 759.4 | 55 | 12.8 | 68 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | 24.12 | 612.6 | 30.12 | 765.0 | 44 | 6.7 | 51 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.52 | 648.2 | ..... | ..... | 39 | 3.9 | 34 | NE | 1 | 0.4 | ..... | 0 | c | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.18 | 639.6 | 30.14 | 765.5 | 57 | 13.9 | 48 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.38 | 746.2 | 29.93 | 760.2 | 44 | 6.7 | 60 | E | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.72 | 729.5 | 30.01 | 762.2 | 45 | 7.2 | 76 | SE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 30.15 | 765.8 | 30.19 | 766.8 | —12 | —24.4 | 100 | S | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Sill, Indian Territory | 28.75 | 730.2 | 29.87 | 758.7 | 48 | 8.9 | 62 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Galveston, Texas | 29.99 | 761.7 | 30.03 | 762.7 | 64 | 17.8 | 62 | NE | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 28.89 | 733.8 | 29.52 | 749.8 | 47 | 8.3 | 70 | SW | 27 | 12.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianapolis, Indiana | 28.98 | 736.1 | 29.75 | 755.6 | 51 | 10.6 | 46 | S | 6 | 2.7 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Indianola, Texas | 30.01 | 762.2 | 30.03 | 762.7 | 66 | 18.9 | 54 | NE | 30 | 13.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.85 | 732.8 | 29.99 | 761.7 | 47 | 8.3 | 70 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 29.87 | 758.7 | 29.89 | 759.2 | 70 | 21.1 | 85 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.03 | 737.3 | 29.93 | 752.6 | 48 | 8.9 | 63 | SW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Key West, Florida | 29.89 | 759.2 | 29.92 | 760.0 | 78 | 25.6 | 91 | SW | 7 | 3.1 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Kittyhawk, North Carolina | 29.74 | 755.4 | 29.76 | 755.9 | 58 | 14.4 | 100 | W | 13 | 5.8 | ..... | ..... | Fog | ..... | Calm | 2.61 | 66.3 | Foggy | |
| Knoxville, Tennessee | 28.89 | 733.8 | 29.88 | 758.9 | 57 | 13.9 | 69 | Calm | 0 | 0 | ..... | 2ck | 0 | W | ..... | 0.88 | 22.4 | Fair | |
| La Crosse, Wisconsin | 28.66 | 728.0 | 29.37 | 746.0 | 42 | 5.6 | 66 | SW | 12 | 5.4 | ..... | 2ck | 0 | SW | ..... | 0.16 | 4.1 | Clear | |
| La Mesilla, New Mexico | 26.07 | 662.2 | 30.22 | 767.6 | 44 | 6.7 | 42 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.63 | 752.6 | 29.97 | 761.2 | 66 | 18.9 | 69 | NE | 11 | 4.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 28.88 | 733.5 | 29.73 | 755.1 | 42 | 5.6 | 50 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.66 | 753.4 | 29.99 | 761.7 | 61 | 16.1 | 82 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Louisville, Kentucky | 29.27 | 743.4 | 29.82 | 757.4 | 54 | 12.2 | 43 | S | 6 | 2.7 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Lynchburg, Virginia | 29.09 | 738.9 | 29.75 | 755.6 | 63 | 17.2 | 78 | SW | 2 | 0.9 | ..... | 0 | 8ks | ..... | Calm | 0.08 | 2.0 | Cloudy | |
| Marquette, Michigan | 28.52 | 724.4 | 29.20 | 741.7 | 39 | 3.9 | 82 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | S | 0.16 | 4.1 | Cloudy | |
| Mason, Texas | 28.39 | 721.1 | 30.16 | 766.1 | 48 | 8.9 | 78 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.66 | 753.4 | 29.98 | 761.5 | 51 | 10.6 | 64 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 28.75 | 730.2 | 29.46 | 748.3 | 46 | 7.8 | 69 | SW | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Mobile, Alabama | 29.91 | 759.7 | 29.95 | 760.7 | 65.5 | 18.6 | 91 | N | 8 | 3.6 | ..... | 0 | 5s | ..... | W | 0 | 0 | Fair | |
| Montgomery, Alabama | 29.70 | 754.4 | 29.93 | 760.2 | 64 | 17.8 | 58 | NW | 5 | 2.2 | ..... | 10cs | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Morgantown, West Virginia | 28.75 | 730.2 | 29.77 | 756.1 | 56 | 13.3 | 81 | W | 17 | 7.6 | ..... | ..... | 10s | ..... | SW | 0.81 | 20.6 | Cloudy | |
| Mt. Washington, N. H. | 23.67 | 691.2 | 30.03 | 762.7 | 36 | 2.2 | 100 | SW | 48 | 21.5 | ..... | ..... | 10n | ..... | SW | 1.82 | 46.2 | Light rain | |
| Nashville, Tennessee | 29.40 | 746.7 | 29.93 | 760.2 | 53 | 11.7 | 54 | W | 3 | 1.3 | ..... | ..... | 10s | ..... | W | Inap. | Inap. | Cloudy | |
| New Haven, Connecticut | 29.75 | 755.6 | 29.86 | 758.4 | 51 | 10.6 | 93 | E | 2 | 0.9 | ..... | ..... | Fog | ..... | ..... | 0.17 | 4.3 | Foggy | |
| New London, Connecticut | 29.86 | 758.4 | 29.91 | 759.7 | 46 | 7.8 | 100 | SE | 8 | 3.6 | ..... | ..... | Fog | ..... | ..... | 0.12 | 3.0 | Dense fog | |
| New Orleans, Louisiana | 29.89 | 759.2 | 29.95 | 760.7 | 68 | 20.0 | 56 | N | 6 | 2.7 | ..... | 2k | 0 | N | ..... | 0 | 0 | Fair | |
| Newport, Rhode Island | 29.86 | 758.4 | 29.91 | 759.7 | 46 | 7.8 | 92 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | SE | 0.02 | 0.5 | Threatening | |
| New York, New York | 29.65 | 753.1 | 29.83 | 757.7 | 50 | 10.0 | 100 | E | 7 | 3.1 | ..... | ..... | Fog | ..... | Calm | 0.12 | 3.0 | Foggy | |
| Norfolk, Virginia | 29.71 | 754.6 | 29.76 | 755.9 | 58 | 14.4 | 94 | W | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0.33 | 8.4 | Cloudy | |
| North Platte, Nebraska | 26.84 | 681.7 | 29.44 | 747.8 | 36 | 2.2 | 61 | NW | 8 | 3.6 | ..... | 5k | 0 | NW | ..... | 0 | 0 | Fair | |
| Olympia, Washington Ter. | 30.08 | 764.0 | 30.12 | 765.0 | 40 | 4.4 | 91 | Calm | 0 | 0 | ..... | ..... | 9s | ..... | Calm | 0 | 0 | Cloudy | |
| Omaha, Nebraska | 28.52 | 724.4 | 29.59 | 751.6 | 41 | 5.0 | 65 | SW | 10 | 4.5 | ..... | 5c | 2s | Calm | Calm | 0.06 | 1.5 | Fair | |
| Oswego, New York | 29.39 | 746.5 | 29.70 | 754.4 | 56 | 13.3 | 87 | S | 3 | 1.3 | ..... | ..... | 10n | ..... | ..... | 0.51 | 13.0 | Heavy rain | |
| Pembina, Dakota | 28.34 | 719.8 | 29.17 | 740.9 | 32 | 0.0 | 100 | NW | 16 | 7.2 | ..... | ..... | 10n | ..... | NW | 0.96 | 24.4 | Light snow | |
| Philadelphia, Pennsylvania | 29.74 | 755.4 | 29.79 | 756.7 | 56 | 13.3 | 62 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | SE | 0.22 | 5.6 | Cloudy | |
| Phœnix, Arizona | 28.79 | 731.3 | 30.61 | 777.5 | 50 | 10.0 | 65 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.58 | 446.5 | 29.80 | 756.9 | 7 | —13.9 | 31 | NW | 20 | 8.9 | ..... | 2c | 0 | N | ..... | 0 | 0 | Clear | |
| Pioche, Nevada | 24.03 | 610.4 | 29.80 | 756.9 | 40 | 4.4 | 31 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 28.97 | 735.8 | 29.77 | 756.1 | 53 | 11.7 | 73 | W | 11 | 4.9 | ..... | ..... | 10s | ..... | W | 0.69 | 17.5 | Cloudy | |
| Port Huron, Michigan | 28.98 | 736.1 | 29.63 | 752.6 | 48 | 8.9 | 49 | S | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Portland, Maine | 29.88 | 758.9 | 29.93 | 760.2 | 47 | 8.3 | 85 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Threatening | |
| Portland, Oregon | 30.09 | 764.3 | 30.20 | 767.1 | 45 | 7.2 | 76 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Prescott, Arizona | 24.77 | 629.2 | 30.13 | 765.3 | 38 | 3.3 | 38 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Punta Rassa, Florida | 29.92 | 760.0 | 29.94 | 760.5 | 75 | 23.9 | 90 | SW | 4 | 1.8 | ..... | 5k | 0 | W | ..... | 1.58 | 40.1 | Fair | |

UNITED STATES SERIES.—CONTINUED

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. | | Reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | Force. | Clouds. | | | | Rain-fall or melted snow in the past 24 hours. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | Inches. | Millimeters. | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | Inches. | Millimeters. | | |
| Red Bluff, California | 29.62 | 752.3 | 29.98 | 761.5 | 54 | 12.2 | 87 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Rochester, New York | 29.06 | 738.1 | 29.66 | 753.4 | 51 | 10.6 | 93 | NW | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | 1.04 | 26.4 | Foggy | |
| Roseburg, Oregon | 29.57 | 751.1 | 30.15 | 765.8 | 44.5 | 6.9 | 96 | Calm | 0 | 0 | ..... | 8cs | 2s | Calm | Calm | 0 | 0 | Cloudy | |
| Sacramento, California | 29.89 | 759.2 | 29.98 | 761.5 | 54 | 12.2 | 87 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.22 | 742.2 | 29.79 | 756.7 | 49 | 9.4 | 44 | S | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Marks, Florida | 29.89 | 759.2 | 29.91 | 759.7 | 66 | 18.9 | 94 | NW | 7 | 3.1 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| St. Paul, Minnesota | 28.47 | 723.1 | 29.27 | 743.4 | 40 | 4.4 | 73 | SW | 10 | 4.5 | ..... | ..... | 10s | ..... | W | 0.04 | 1.0 | Cloudy | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.58 | 649.7 | 29.91 | 759.7 | 43 | 6.1 | 36 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Antonio, Texas | 29.36 | 745.7 | 29.95 | 760.7 | 53 | 11.7 | 67 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Diego, California | 29.95 | 760.7 | 30.02 | 762.5 | 61 | 16.1 | 82 | NW | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 29.09 | 738.9 | 29.75 | 755.6 | 50 | 10.0 | 52 | SW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandy Hook, New Jersey | 29.79 | 756.7 | 29.82 | 757.4 | 49 | 9.4 | 100 | SE | 11 | 4.9 | ..... | ..... | Fog | ..... | SE | 0.08 | 2.0 | Foggy | |
| San Francisco, California | 29.96 | 761.0 | 30.02 | 762.5 | 53 | 11.7 | 83 | SW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Santa Fé, New Mexico | 23.27 | 591.0 | 29.81 | 757.2 | 40 | 4.4 | 14 | NE | 12 | 5.4 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 29.76 | 755.9 | 29.85 | 758.2 | 67 | 19.4 | 95 | W | 3 | 3.1 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Shreveport, Louisiana | 29.84 | 757.9 | 30.07 | 763.8 | 53 | 11.7 | 86 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 29.79 | 756.7 | 29.83 | 757.7 | 64 | 17.8 | 100 | SW | 4 | 1.8 | ..... | 0 | Fog | ..... | SW | 0.33 | 8.4 | Fair | |
| Springfield, Massachusetts | 29.69 | 754.1 | 29.82 | 757.4 | 51 | 10.6 | 86 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0.09 | 2.3 | Foggy | |
| Stockton, Texas | 26.94 | 684.3 | 29.94 | 760.5 | 57 | 13.9 | 40 | NW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.89 | 759.2 | 29.94 | 760.5 | 45 | 7.2 | 84 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Toledo, Ohio | 29.01 | 736.8 | 29.66 | 753.4 | 54 | 12.2 | 43 | S | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 50 | 10.0 | 59 | SE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tybee Island, Georgia | 29.82 | 757.4 | 29.85 | 758.2 | 65 | 18.3 | 100 | SW | 4 | 1.8 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Umatilla, Oregon | 29.70 | 754.4 | ..... | ..... | 49 | 9.4 | 64 | W | 16 | 7.2 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Vicksburg, Mississippi | 29.78 | 756.4 | 30.04 | 763.0 | 56 | 13.3 | 69 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Virginia City, Montana | 24.01 | 609.8 | 29.49 | 749.0 | 42 | 5.6 | 65 | SW | 12 | 5.4 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Visalia, California | 29.62 | 752.3 | 29.99 | 761.7 | 53 | 11.7 | 93 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C. | 29.65 | 753.1 | 29.76 | 755.9 | 58 | 14.4 | 94 | SE | 1 | 0.4 | ..... | ..... | 10n;fg | ..... | SE | 0.45 | 11.4 | Light rain | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 42 | 5.6 | 42 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 29.72 | 754.9 | 29.80 | 756.9 | 63 | 17.2 | 83 | SW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0.37 | 9.4 | Clear | |
| Winnemucca, Nevada | 25.61 | 650.5 | 29.97 | 761.2 | 40 | 4.4 | 65 | SW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wood's Holl, Mass | 29.87 | 758.7 | 29.92 | 760.0 | 51 | 10.6 | 78 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | ..... | Inap | Inap. | Cloudy | |
| Yankton, Dakota | 28.28 | 718.3 | 29.55 | 750.6 | 42 | 5.6 | 83 | SW | 14 | 6.3 | ..... | 5c | 0 | NW | ..... | 0.25 | 6.3 | Fair | |
| Yuma, Arizona | 29.78 | 756.4 | 29.94 | 760.5 | 59 | 15.0 | 83 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 29.77 | 756.1 | 29.82 | 757.4 | 15.0 | — 9.4 | 91 | E | 11 | 4.9 | ..... | ..... | 9s | ..... | ..... | 0.08 | 2.0 | Cloudy | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 29.91 | 759.7 | 29.93 | 760.2 | 82 | 27.8 | 83 | SW | 3.6 | 1.6 | ..... | 2k | 0 | SW | ..... | 0 | 0 | Fair | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.13 | 765.3 | 30.14 | 765.5 | 79 | 26.1 | 95 | Calm | 0 | 0 | ..... | 8c | 0 | Calm | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.91 | 759.7 | 29.99 | 761.7 | 82 | 27.8 | ..... | E | 12 | 5.4 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | 29.99 | 761.7 | 29.99 | 761.7 | 82 | 27.8 | 83 | NE | ..... | ..... | 2 | 6k | 6ks | NE | ..... | 0 | 0 | ½ cloudy | C. J. Hering. |
| Batavia, Dutch Guiana, S. A. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.28 | 642.1 | ..... | ..... | 67.0 | 19.4 | 82 | Calm | ..... | ..... | 0 | ..... | 10n;s | ..... | ..... | 0.18 | 4.6 | ..... | Thomas Herrae. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,560 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,170.7 ft., or 4,318.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er —1c. | Clouds. Amount. Low't 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low't From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.94 | 760.5 | 54 | 12.2 | 53 | 11.7 | 86 | WSW | 7 | 3.1 | .... | ..... | 10 | ..... | S | 0 | 0 | ..... | ..... | Overcast..... | |
| Navy Yard, Pensacola, Fla. | 30.03 | 762.7 | 69 | 20.6 | 69 | 20.6 | 95 | N | 2 | 0.9 | .... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Fair ..... | |
| Navy Yard, Portsmouth, N.H | 29.97 | 761.2 | 61 | 16.1 | 44 | 6.7 | 84 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Naval Hospital, Yokohama, Japan..... | 30.31* | 769.9* | 55.8 | 13.2 | 47.8 | 8.8 | 78 | ENE | ..... | ..... | 2 | ..... | 10s | ..... | WSW | 0 | 0 | ..... | ..... | Overcast..... | |
| Adams. Panama..... | 29.98 | 761.5 | 85 | 29.4 | 85 | 29.4 | 87 | NE | ..... | ..... | 0-1 | ..... | 8 | ..... | ..... | ..... | ..... | Smooth | ..... | Hazy..... | |
| Alliance, Villefranche, France..... | 29.86‡ | 758.4‡ | ..... | ..... | 63 | 17.2 | 62 | SW | ..... | ..... | 0-1 | ..... | 3 | ..... | S; W | ..... | ..... | Light | S;W | Pleasant..... | |
| Ashuelot. Shanghai, China ..... | 29.98 | 761.5 | 65 | 18.3 | 60 | 15.6 | 94 | ENE | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Misty..... | |
| Canonicus, New Orleans, La..... | 29.98 | 761.5 | 50 | 10.0 | 67 | 19.4 | 64 | NNW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Colorado, New York, N. Y..... | 29.80‡ | 756.9‡ | ..... | ..... | 51 | 10.6 | 93 | SE | 5 | 2.2 | ..... | ..... | 10 | ..... | SE | 0.12 | 3.0 | ..... | ..... | Foggy ..... | |
| Constellation, N. 41° 41′ W. 44° 26′..... | 29.50‡ | 749.3‡ | ..... | ..... | 54 | 12.2 | 67 | NW | ..... | ..... | 7 | ..... | 10 | ..... | NW | ..... | ..... | Heavy | N | Threatening | |
| Constitution, Havre, France..... | 30.00‡ | 762.0‡ | ..... | ..... | 54 | 12.2 | 80 | W | ..... | ..... | 1 | ..... | 9 | ..... | Calm | ..... | ..... | ..... | ..... | Overcast..... | |
| Despatch, Gulf of Ismid, Turkey... | 29.85‡ | 758.2‡ | ..... | ..... | 63 | 17.2 | 83 | E | ..... | ..... | 3 | ..... | 10 | ..... | SW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Enterprise, Norfolk, Va ..... | 29.82‡ | 757.4‡ | ..... | ..... | 60 | 15.6 | 94 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Franklin, Norfolk, Va..... | 29.89 | 759.2 | 71 | 21.7 | 60 | 15.6 | 88 | WNW | 4 | 1.8 | ..... | ..... | 8 | ..... | WNW | 3.8 | 97. | ..... | ..... | Foggy ..... | |
| Gettysburg Valetta, Malta..... | 29.89‡ | 756.9‡ | ..... | ..... | 63 | 17.2 | 100 | NNW | ..... | ..... | 2 | ..... | 2 | ..... | Calm | 0 | 0 | ..... | ..... | Fair ..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.08 | 764.0 | 74 | 23.3 | 73 | 22.8 | 85 | NNE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear ..... | |
| Hartford, Montevideo, Uraguay .... | 30.05 | 763.3 | 63 | 17.2 | 63 | 17.2 | 67 | E | 2 | 0.9 | ..... | ..... | 8 | ..... | E | 0 | 0 | Smooth | ..... | Hazy..... | |
| Marion, Volo Bay, Turkey..... | 29.98 | 758.9 | 65 | 18.3 | 68 | 20.0 | 70 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | SSE | 0 | 0 | Smooth | ..... | Fair ..... | |
| Michigan, Erie, Pa..... | 29.22 | 742.2 | 64 | 17.8 | 53 | 11.7 | 54 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Monocacy. Shanghai, China..... | 29.91‡ | 759.7‡ | ..... | ..... | 61 | 16.1 | 88 | NE | ..... | ..... | 1 | ..... | 10 | ..... | SE | ..... | ..... | ..... | ..... | Overcast..... | |
| New Hampshire, Port Royal, S. C..... | 30.08† | 763.5† | ..... | ..... | 66 | 18.9 | 100 | SW | 6 | 2.7 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Foggy ..... | |
| Omaha, N. 23° 00′ W. 67° 57′..... | 30.11* | 764.8* | 77 | 25.0 | 77 | 25.0 | 69 | SSE | 3 | 1.3 | ..... | ..... | 2 | ..... | SSE | 0 | 0 | Slight | SE | Bright..... | |
| Onward, Callao, Peru ..... | 30.02† | 762.5† | ..... | ..... | 68 | 20.0 | 90 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, Pensacola, Fla..... | 29.94‡ | 760.5‡ | ..... | ..... | 70 | 21.1 | 95 | N | ..... | ..... | 1 | ..... | 5 | ..... | SW | ..... | ..... | ..... | ..... | Clear..... | |
| Palos, Shanghai, China..... | 30.03* | 762.7* | 68 | 20.0 | 60 | 15.6 | 94 | NE | ..... | ..... | 2 | ..... | 10 | ..... | E | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Pensacola, N. 24° 32′, W. 159° 25′..... | 30.22 | 767.6 | 73 | 22.8 | 71 | 21.7 | 75 | NNE | 20 | 8.9 | ..... | ..... | 4 | ..... | ..... | 0.01 | 0.3 | Smooth | NE | Cloudy..... | |
| Plymouth. Norfolk, Va..... | 29.75‡ | 755.6‡ | ..... | ..... | 60 | 15.6 | 88 | WSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | |
| Powhatan, Norfolk, Va..... | 29.80‡ | 756.9‡ | ..... | ..... | 61 | 16.1 | 94 | W | 6.0 | 2.7 | ..... | ..... | 10 | ..... | W | 0.55 | 14.0 | ..... | ..... | Rainy... ..... | |
| Ranger. Takao, Formosa..... | 30.09* | 764.3* | ..... | ..... | 82 | 27.8 | 79 | NNE | ..... | ..... | 2-3 | ..... | 6 | ..... | Calm | ..... | ..... | Smooth | ..... | D. clouds..... | |
| Rio Bravo, Brownsville, Texas..... | 29.92 | 760.0 | 67 | 19.4 | 66 | 18.9 | 100 | NNW | ..... | ..... | 2 | ..... | 7 | ..... | N | ..... | ..... | ..... | ..... | Clear..... | |
| Santee, Annapolis, Md ..... | 29.72‡ | 754.9‡ | ..... | ..... | 57 | 13.9 | 100 | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.25 | 6.3 | ..... | ..... | Foggy ..... | |
| Saratoga, Washington, D. C..... | 29.74* | 755.4* | ..... | ..... | 59 | 15.0 | 88 | S | ..... | ..... | 1 | ..... | 10 | ..... | Calm | Mod'ate | Mod'ate | ..... | ..... | Rainy ..... | |
| St. Louis, League Island, Pa ..... | 29.77 | 756.1 | 66 | 18.9 | 56 | 13.3 | 94 | SE | 10 | 4.5 | ..... | ..... | 10 | ..... | SE | 0.27 | 6.9 | ..... | ..... | Drizzling..... | |
| Supply, Havre, France..... | 30.06 | 763.5 | 55 | 12.8 | 52 | 11.1 | 86 | W | ..... | ..... | 2 | ..... | 8 | ..... | W | ..... | ..... | ..... | ..... | Cloudy..... | |
| Swatara, Aspinwall..... ..... | 30.00 | 762.0 | 84 | 28.9 | 84 | 28.9 | 87 | ENE | ..... | ..... | 1 | ..... | 5 | ..... | N;E | ..... | ..... | ..... | ..... | Fair ..... | |
| Tennessee, N. 12° 24′ E. 49° 33′..... | 29.86* | 758.4* | 80 | 30.0 | 84 | 28.9 | 87 | NE | 3 | 1.3 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | Smooth | ..... | D. clouds..... | |
| Trenton, Villefranche, France ..... | 29.86‡ | 758.4‡ | ..... | ..... | 68 | 20.0 | 60 | S | ..... | ..... | 0-1 | ..... | 8 | ..... | ..... | 0 | 0 | Smooth | ..... | Hazy..... | |
| Tuscarora, Acapulco, Mexico..... | 29.72 | 754.9 | 74 | 23.3 | 74 | 23.3 | 76 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |
| Vandalia, Villefranche, France..... | 29.84‡ | 757.9‡ | ..... | ..... | 61 | 16.1 | 66 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Clear..... | |
| Wabash, Boston, Mass..... | 29.94‡ | 760.5‡ | ..... | ..... | 53 | 11.7 | 86 | SSE | 2 | 0.9 | .... | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Cloudy..... | |
| Wyoming, N. 38° 40′, W. 56° 35′..... | 30.12* | 765.0* | ..... | ..... | 59 | 15.0 | 59 | NNW | ..... | ..... | 6 | ..... | 3 | ..... | ..... | ..... | ..... | Rough chop'd | NW | D. clouds..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time. **Errata:** From April 1st to 10th, 1878, inclusive, the barometer of the "Monocacy" needs a further correction of +0.19 inches, or 4.8 mm., as ascertained by comparison with the observatory of Zi-ka-Wei, near Shanghai.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Panama, N. 39° 20′ W. 123° 56′ | | | 30.04* | 763.0* | | | | NNW | | | 3 | | 2 | | NW | Light | W | Variable | Capt. Cobb. |
| S. S. City of Peking, N. 37° 13′, W. 172° 16′ | | | 30.50† | 776.2† | 50 | 10.0 | 93 | E | 7.0 | 3.1 | | | 9 | | E | Small | E | Misty | Capt. Seabury. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Tokio, N. 33° 58′, E. 167° 15′ | | | | | 59 | 15.0 | | E | | | 7 | | 10 | | | Rough | ENE | Overcast | Capt. Dearborn. |
| S. S. Colima, N. 25° 49′, W. 113° 20′ | | | 30.03† | 762.7† | 63 | 17.2 | 83 | NW | | | 4 | | 4 | | NW | Small | NW | D. clouds | Capt. Maury. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic, N. 40° 47′, W. 68° 38′ | | | 30.03* | 762.7* | | | | SSE | | | 3 | | 3 | | S | Light | SW | Cloudy | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. W. H. Thompson. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic, N. 44° 47′, W. 38° 42′ | | | 29.68† | 738.6† | 58 | 14.4 | ?? | S | | | 3 | | | | SE | Mod'ate | NE | D. clouds | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. * Aneroid; corrected for elevation; instrumental error not known. †Aneroid.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic | | | | | | | | | | | | | | | | | | | |
| S. S. Gaelic, Hong-Kong, China | | | 30.05† | 763.3† | 72 | 22.2 | 95 | SE | | | 4 | | | | | | | | Capt. John Metcalf. |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | D. clouds | Capt. W. H. Kidley |
| | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | Character | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, N. 39° 01′, W. 55° 22′ | | | 29.84* | 757.9* | 55 | 12.8 | 93 | NNW | | | 0 | | 7 | | N | Heavy | NE | Cloudy | Captain Sargent. |
| S. S. Ohio, Philadelphia, Pa | | | 29.74 | 755.4 | 58 | 14.4 | 94 | SSE | | | 3 | | 10 | | Calm | | | Dull | Captain Morrison. |
| S. S. Pennsylvania, N. 42° 49′, W. 45° 54′ | | | 29.38* | 746.2* | 43 | 6.1 | 100 | NW | | | 6 | | 9 | | NW | Heavy | NE;N | Cloudy | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Corrected for temperature and elevation, instrumental error not known.

## RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland, N. 41°, W. 66° 47′ | | | 29.97* | 761.2* | | | | SE | 10 | 4.5 | | | Fog | | | Long | NE | Foggy | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

*Aneroid; regulated to standard at Antwerp.

## ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| S. S. Scandinavian, N. 38° 53′, W. 70° 2′ | | | 29.99 | 761.7 | 60 | 10.0 | | SW | | | 3 | | 10 | | SW | Mod'ate | ENE | D. clouds | Capt. W. Richardson. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

## MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Falmouth, Mass | | | 29.89 | 759.2 | 58 | 14.4 | 12 | Calm | 0 | 0 | | | 10ks | | | | | Overcast | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 30.27 | 768.8 | — 2 | —18.9 | 91* | W | 0.9 | 0.4 | | 0 | 0 | | | | | Clear | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Determined by use of hair hygrometer.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Ass't.) Chief Signal Officer, U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 12, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer: Corrected for instrumental error and temperature. Inches. | Barometer: Corrected for instrumental error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.02 | 762.6 | 67.1 | 19.5 | 83 | NE | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair.... | Dr. Ollive. |
| Nemours | ..... | ..... | 30.06 | 763.5 | 73.4 | 23.0 | 59 | NNW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair..... | Michel. |
| Algiers | ..... | ..... | 29.95 | 760.8 | 66.6 | 19.2 | 70 | W | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair..... | Towiliere. |
| La Calle | ..... | ..... | 29.96 | 760.9 | 59.9 | 15.5 | 77 | NW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0.079 | 2.0 | Cloudy..... | Boulangeot. |
| Tunis | ..... | ..... | 29.93 | 760.1 | 68.0 | 20.0 | 57 | NW | ..... | ..... | 8 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy..... | Jacques. |
| Sfax | ..... | ..... | 29.98 | 761.5 | 68.0 | 20.0 | ..... | W | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0.315 | 8.0 | Covered..... | Gau. |
| Saida | ..... | ..... | 30.11 | 764.7 | 68.2 | 20.1 | ..... | NNW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair..... | Herbin. |
| Tebessa | ..... | ..... | 29.94 | 760.4 | ..... | ..... | ..... | NNW | ..... | ..... | 7 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Watrin. |
| Geriville | ..... | ..... | 30.17 | 766.2 | 62.6 | 17.0 | 81 | NNW | ..... | ..... | 5 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy..... | Lemaillot. |
| Laghouat | ..... | ..... | 30.12 | 765.1 | 69.8 | 21.0 | 37 | Calm | ..... | ..... | 0 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair.... | Bertrand. |
| Biskra | ..... | ..... | 30.07 | 763.7 | 79.3 | 26.3 | 39 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear..... | Chauvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,369? m.; or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.35 | 745.5 | 29.90 | 759.4 | 54.1 | 12.3 | 56 | NE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.27 | 743.4 | 30.07 | 763.8 | 57.6 | 14.2 | 61 | NE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0.126 | 3.2 | ..... | Dr. Wierzbiski. |
| Eperies | 29.06 | 738.1 | 29.92 | 760.0 | 61.2 | 16.2 | 40 | NE | ..... | ..... | 2 | ..... | 8c;s | ..... | ..... | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.69 | 728.8 | 29.94 | 760.5 | 55.0 | 12.8 | 50 | SE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.193 | 4.90 | ..... | Andreas Rospini. |
| Hermannstadt | 28.46 | 722.8 | 29.88 | 758.9 | 54.0 | 12.2 | 57 | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Rainy..... | Prof. Reissenberg |
| Kremsmünster | 28.58 | 726.0 | 29.92 | 760.0 | 52.3 | 11.3 | 47 | E | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner |
| Lemberg | 29.40 | 736.7 | 29.98 | 761.5 | 57.9 | 14.4 | 51 | E | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Dr. T. Stanecki. |
| Pola | 29.73 | 755.2 | 29.84 | 758.0 | 62.1 | 16.7 | 36 | E | ..... | ..... | 4 | ..... | 2k | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.48 | 748.8 | 29.94 | 760.4 | 63.1 | 17.3 | 40 | SE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.54 | 750.3 | 29.82 | 757.4 | 54.5 | 12.5 | 83 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0.108 | 2.75 | ..... | Karl Stancel. |
| Trieste | 29.78 | 756.3 | 29.88 | 758.9 | 62.4 | 16.9 | 27 | ENE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair..... | P. Busin. |
| Vienna | 29.26 | 743.1 | 29.97 | 761.3 | 56.1 | 13.4 | 57 | NE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0.047 | 1.2 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.56 | 725.4 | 30.08 | 764.1 | 49.1 | 9.5 | 49 | ENE | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. M. Passau. |
| Brussels | 29.91 | 759.6 | 30.11 | 764.7 | 56.3 | 13.5 | 51 | E | ..... | ..... | 3 | ..... | 5 | ..... | NE | 0 | 0 | ..... | Royal Observatory. |
| Furnes | 30.12 | 765.0 | 30.14 | 765.6 | 57.7 | 14.3 | 63 | NW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | M. E. de Cae. |
| Maeseyck | 30.00 | 762.0 | 30.13 | 765.2 | 55.6 | 13.1 | 55 | E | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.16 | 766.1 | 30.26 | 768.6 | 46.9 | 8.3 | ..... | SE | 11 | 4.9 | ..... | ..... | 7 | ..... | ..... | 0.020 | 0.51 | D. clouds | W. B. swell. |
| Ardrossan | 30.10 | 764.5 | 30.11 | 764.8 | 57 | 13.9 | ..... | ESE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.08 | 764.0 | 50.0 | 10.0 | ..... | SE | 12 | 5.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.11 | 764.8 | 60.4 | 15.8 | ..... | SE | 20 | 8.9 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Overcast | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 30.02 | 762.5 | 52.8 | 11.6 | ..... | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | J. L. E. Dreyer. |
| Bradford, Yorkshire | 29.77 | 756.1 | 30.17 | 766.3 | 55.1 | 12.8 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.94 | 760.5 | 29.97 | 761.2 | 83.5 | 28.6 | ..... | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 30.16 | 766.1 | 65.0 | 18.3 | ..... | SE | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | H. Todd. [H. C. |
| Cardington | ..... | ..... | 30.17 | 766.3 | 62.0 | 16.7 | ..... | S | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | John McLaren. |
| Chatham, School M. E. | 30.03 | 762.7 | 30.16 | 766.1 | 54.7 | 12.6 | ..... | E | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.63 | 727.2 | 30.10 | 764.5 | 53.4 | 11.9 | ..... | E | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | Fine | Alexander Watt. |
| Donaghadee | 30.06 | 763.5 | 30.09 | 764.3 | 52 | 11.1 | ..... | SSE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | J. Mac Gowan. |
| Dover | 30.11 | 764.8 | 30.14 | 765.5 | 54 | 12.2 | ..... | E | ..... | ..... | 3 | ..... | 1 | ..... | ..... | ..... | ..... | ¼ clouded | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 30.12 | 765.0 | 63.8 | 17.7 | ..... | ESE | 6.2 | 2.8 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hazy | Thomas Mackereth. |
| Falmouth, School M. E. | 29.88 | 758.9 | 30.11 | 764.8 | 52.3 | 11.3 | ..... | SSE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | Foggy | The Staff. |
| Fort Napier, (Natal) | 27.69 | 701.0 | 29.81 | 757.2 | 77.0 | 25.0 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.67 | 753.6 | 29.90 | 759.4 | 89 | 31.7 | ..... | NW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's College | ..... | ..... | 29.91 | 759.7 | 59 | 10.0 | ..... | SSE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.09 | 764.3 | 30.14 | 765.5 | 69.2 | 20.7 | ..... | W | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Corpl. Wm. Allen, A. H. C. |
| Glasgow, Observatory | 29.93 | 760.2 | 30.13 | 765.3 | 52.0 | 11.1 | ..... | ENE | ..... | ..... | 5 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | D. G. Maclean. |
| Great Yarmouth | 30.20 | 767.1 | 30.20 | 767.1 | 49 | 9.4 | ..... | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.98 | 761.5 | 30.16 | 766.1 | 59.0 | 15.5 | ..... | E | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | The Staff, for G. B. Airy. |
| Guernsey | 29.87 | 758.7 | 30.09 | 764.3 | 50.5 | 10.3 | ..... | ENE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Dr. S. E. Hoskins, F. R. S. |
| Helston | ..... | ..... | 30.12 | 765.0 | 57 | 13.9 | ..... | E | ..... | ..... | 4 | ..... | 4c | ..... | ..... | 0 | 0 | Fine | M. P. Moyle. |
| Holyhead | 30.02 | 762.5 | 30.07 | 763.8 | 55 | 12.8 | ..... | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Tilston. |
| Jersey | 29.86 | 758.4 | 30.15 | 765.8 | 49.0 | 9.4 | ..... | Calm | ..... | ..... | 0 | ..... | 9 | ..... | ..... | ..... | ..... | Hazy | J. Fisher. |
| Kew, Observatory | ..... | ..... | 30.16 | 766.1 | 58.0 | 14.4 | ..... | E | 18 | 8.0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hazy | The Staff. |
| Kingstown | 30.03 | 762.7 | 30.06 | 763.5 | 52 | 11.1 | ..... | SSE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Misty | George Mitchell. |
| Leicester, Museum | ..... | ..... | 30.16 | 766.1 | 60.0 | 15.6 | ..... | SE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds | Wm. J. Harrison, F. G. S. |
| Malta, (Mediterranean) | 29.76 | 755.9 | 29.83 | 757.7 | 65.4 | 18.6 | ..... | NW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | Sgt. Fred. Travis, A. H. |
| Nairn | 30.08 | 764.0 | 30.18 | 766.6 | 58 | 14.4 | ..... | SE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 29.92 | 760.0 | 80.5 | 26.9 | ..... | W | ..... | ..... | 1 | ..... | 8 | ..... | ..... | Blank | Blank | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 30.01 | 762.2 | 30.20 | 767.1 | 59.4 | 15.2 | ..... | ENE | ..... | ..... | 3 | ..... | 3c | ..... | SW; N | 0 | 0 | D. clouds | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.63 | 752.6 | 30.15 | 765.8 | 57.6 | 14.2 | ..... | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.15 | 765.8 | 60 | 15.6 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Mr. Lucas. |
| Plymouth | 30.04 | 763.0 | 30.11 | 764.8 | 56.9 | 13.8 | ..... | SE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | John Merrifield. |
| Roche's Point | 29.87 | 758.7 | 30.02 | 762.5 | 51 | 10.6 | ..... | SSE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Hazy | W. Kennedy. |
| Saint Ann's Head | 29.92 | 760.0 | 30.08 | 764.0 | 50 | 10.0 | ..... | SE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Misty | John C. Walker. |
| Sandwick Manse, (Orkneys.) | ..... | ..... | 30.26 | 768.6 | 50 | 10.0 | ..... | SSE | 19 | 8.5 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.73 | 755.1 | 59.4 | 15.2 | ..... | NE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | Blank | Blank | Gloomy | Sergt. W. H. Lyne. |
| Sheffield | 29.92 | 760.0 | 30.0 | 767.1 | 57.3 | 14.1 | ..... | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | Blue sky | W. F. Cooper. |
| Silloth Rectory | 30.09 | 764.3 | 30.12 | 765.0 | 61.1 | 16.2 | 48 | SE | ..... | ..... | 5 | ..... | 3 | ..... | ..... | 0.040 | 1.02 | D. clouds | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.74 | 755.4 | 30.15 | 765.8 | 57.9 | 14.4 | ..... | E | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 30.14 | 765.5 | 51 | 10.6 | ..... | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded | John Sutherland. |
| Stratfield Turgiss | 29.93 | 760.2 | 30.14 | 765.5 | 61.6 | 16.4 | ..... | E | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | Rev. C. H. Griffith, F. M |
| Thurso | ..... | ..... | 30.21 | 767.3 | 54 | 12.2 | ..... | SE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Misty | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 30.11 | 764.8 | 58 | 14.4 | ..... | SE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 29.90 | 759.4 | 50.6 | 10.3 | ..... | ESE | 24 | 10.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.98 | 761.5 | 69.0 | 20.6 | 80 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0.05 | 1.3 | Fine; clear | Francis Abbott, F. R. A. S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.69 | 754.1 | 29.88 | 758.8 | 77.8 | 25.4 | 63 | SE | 17.0 | 7.6 | ..... | 0 | 2 | ..... | ..... | 0 | 0 | Squally | C. Meldrum. |
| Melbourne, Observatory | 30.18 | 766.6 | 30.27 | 768.8 | 60.0 | 15.6 | 80 | SE | 3 | 1.3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Fine: dull | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

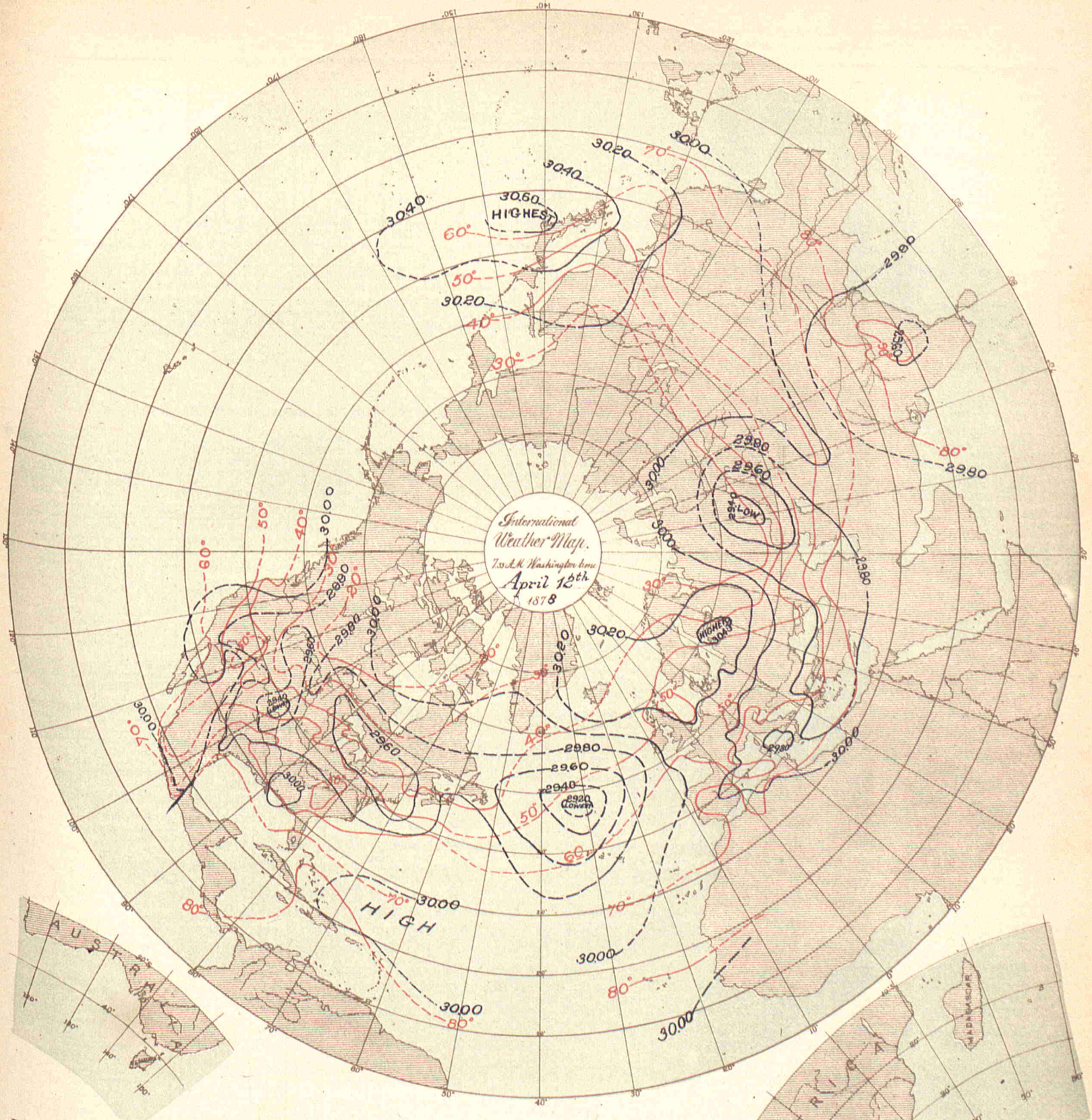
NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind-direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft, or 670.6 m.

## MARINE SERIES.

### VESSELS.

| | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|
| S. S. Algeria | ..... | ..... | ..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | Capt. C. C. Prehn. [R. |
| S. S. Peruvian | ..... | ..... | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire, N. 51° 55′, W. 7° 10′ | Calm | Misty | ..... | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Upp'r. 0—10 | Clouds. Amount. Low'r. 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.23 | 666.2 | ..... | ..... | 72.5 | 22.5 | 91 | E | ..... | ..... | 1 | 3ck | Haze | E | ..... | 0 | 0 | ..... | Federico Maison. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.23 | 767.8 | 30.28 | 769.0 | 52.9 | 11.6 | 58 | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... |
| Fanöe | 30.23 | 767.7 | 30.24 | 768.2 | 59.2 | 15.1 | 58 | E | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.89 | 759.1 | 29.93 | 760.2 | 36.7 | 2.6 | 84 | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | 30.35 | 770.8 | 30.39 | 771.9 | 33.6 | 0.9 | 90 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Raining | ..... |
| Thorshavn, (Faröe) | 30.27 | 768.8 | 30.30 | 769.7 | 47.7 | 8.7 | 88 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 30.09 | 764.2 | 30.26 | 768.5 | 57.2 | 14.0 | 74 | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.60 | 751.9 | 30.15 | 765.9 | 53.6 | 12 | 75 | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear.. | Collignon, Director. |
| Amiens, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bonvarne, Director. |
| Avignon, Normal School | 29.81 | 757.2 | 29.89 | 759.2 | 63.0 | 17.2 | 49 | NNW | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | Very clear.. | Mr. Giraud, Director |
| Bar-sur-Seine | 29.48 | 748.7 | 30.03 | 762.8 | 57.0 | 13.9 | 43 | E | ..... | ..... | 2 | ..... | 5kn | ..... | NE | 0 | 0 | Cloudy..... | C. Saillard. |
| Beaumette Obs'y (Angers) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Albert Cheux. |
| Beauvais | ..... | ..... | ..... | ..... | 57.4 | 14.1 | 49 | E | ..... | ..... | 2 | ..... | 2 | ..... | ENE | 0.197 | 5.00 | Slightly cl'dy | Normal School. |
| Besançon | 29.10 | 739.2 | 29.99 | 761.8 | 55.4 | 13 | 66 | NNW | ..... | ..... | 3 | ..... | 5 | ..... | NE | Inap. | Inap. | Cloudy.. ..... | Normal School. |
| Bourg-en-Bresse | 29.11 | 739.4 | 30.03 | 762.8 | 57.2 | 14 | 67 | N | ..... | ..... | 6 | ..... | 5cn | ..... | N | 0.39 | 10. | Cloudy..... | Normal School. |
| Bourges, Normal School | 29.50 | 749.3 | 30.05 | 763.3 | 56.3 | 13.5 | 84 | W | ..... | ..... | 3 | ..... | 2 | ..... | W | 0 | 0 | Slightly cl'dy | A. Wagner, Director. |
| Brest, Naval Observatory | 29.82 | 757.4 | 30.04 | 762.9 | 61.3 | 16.3 | 63 | ESE | ..... | ..... | 1 | ..... | 9 | ..... | ESE | 0 | 0 | ..... | The Staff. |
| Carcassonne, Normal School | 29.69 | 754.1 | 30.10 | 764.6 | 57.2 | 14 | 74 | NW | ..... | ..... | 2 | ..... | 5 | ..... | W | 0 | 0 | Cloudy..... | Vateau, Director. |
| Caen | 30.03 | 762.8 | 30.11 | 764.7 | 57.2 | 14 | 76 | WNW | ..... | ..... | 1 | ..... | 1 | ..... | NE | 0 | 0 | Clear..... | Normal School. |
| Chartres, Normal School | 29.48 | 748.8 | 30.04 | 763.0 | 62.2 | 16.8 | 90 | N | ..... | ..... | 2 | ..... | 4 | ..... | NW | 0 | 0 | ..... | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.74 | 755.5 | 30.06 | 763.5 | 59.5 | 15.3 | 48 | E | ..... | ..... | 3 | ..... | 5k | ..... | E | 0 | 0 | Cloudy..... | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.68 | 728.4 | 30.03 | 762.8 | 55.9 | 13.3 | 50 | NW | ..... | ..... | 2 | ..... | 8 | ..... | NW | 0 | 0 | Very cloudy | Alluard, Director. |
| Commercy, Normal School | 29.10 | 739.1 | 29.97 | 761.3 | 57.2 | 14 | 52 | E | ..... | ..... | 2 | ..... | 1 | ..... | E | 0 | 0 | Clear..... | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.74 | 729.9 | 29.88 | 758.9 | 64.2 | 17.9 | 40 | NW | ..... | ..... | 2 | ..... | 8 | ..... | NW | 0 | 0 | ¾ covered.... | M. Kina. |
| Grenoble | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| La Roche-sur-Yon, N. School | 29.91 | 759.6 | 30.12 | 765.1 | 58.3 | 14.6 | 68 | WSW | ..... | ..... | 2 | ..... | 5 | ..... | E | 0 | 0 | Cloudy..... | Mouillot, Director. |
| Le Mans, Normal School | 29.79 | 756.7 | 30.10 | 764.6 | 57.4 | 14.1 | 69 | NE | ..... | ..... | 1 | ..... | 2 | ..... | N | 0 | 0 | Slightly cl'dy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.06 | 738.1 | 29.98 | 761.4 | 55.4 | 13 | 60 | N | ..... | ..... | 6 | ..... | 2 | ..... | S | 0 | 0 | Slightly cl'dy | Voudez, Director. |
| Lorient, Naval Observatory | 30.02 | 762.6 | 30.12 | 765.1 | 58.3 | 14.6 | 74 | S | ..... | ..... | 3 | ..... | 5 | ..... | S | 0 | 0 | ½ Cloudy.... | T. Carré, Director. |
| Mâcon, Normal School | 29.31 | 744.5 | 29.97 | 761.2 | 52.2 | 11.2 | 85 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | 0.374 | 9.5 | Very cloudy | M. Marchal, Director. |
| Metz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. A. Schuster, Dir. |
| Mirecourt | 28.93 | 734.9 | 29.98 | 761.6 | 51.1 | 10.6 | 46 | NNW | ..... | ..... | 2 | ..... | 1 | ..... | SSW | 0 | 0 | Clear | Normal School. |
| Nismes, Normal School | 29.71 | 754.6 | 29.91 | 759.7 | 65.1 | 18.4 | 51 | N | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | Clear..... | Boyer, Director. |
| Orleans, Normal School | 29.70 | 754.4 | 30.08 | 763.9 | 72.5 | 22.5 | 74 | N | ..... | ..... | 2 | ..... | 2 | ..... | N | 0.08 | 2. | Slightly cl'dy | Bernard, Director. |
| Paris, Observatory | 29.84 | 757.8 | 30.07 | 763.8 | 57.7 | 14.3 | 47 | NE | ..... | ..... | 1 | ..... | 6 | ..... | NE | 0.081 | 2.04 | Cloudy..... | National Observatory. |
| Privas | 28.94 | 735.1 | 30.00 | 762.1 | 57.9 | 14.4 | 38 | NW | ..... | ..... | 2 | ..... | 2 | ..... | NW | 0 | 0 | Slightly cl'dy | Normal School |
| Puy de Dome (Summit) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.05 | 763.3 | 30.08 | 764.1 | 57.7 | 14.3 | 72 | W | ..... | ..... | 3 | ..... | 10 | ..... | W | 0 | 0 | Covered ..... | Lt. Decante, Director. |
| Rouen, Normal School | 30.01 | 762.3 | 30.10 | 764.5 | 64.8 | 18.2 | 43 | NNE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0.028 | 0.7 | Clear..... | F. Lucard, Director. |
| Saint Malo (Port) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. H. Hercouet. |
| Tarbes, Normal School | 29.11 | 739.4 | 30.18 | 766.5 | 64.4 | 18 | 62 | SW | ..... | ..... | 2 | ..... | 2 | ..... | W | 0.20 | 5. | Slightly cl'dy | T. Hugues, Director. |
| Villefranche | 29.31 | 744.4 | 30.02 | 762.5 | 55.0 | 12.8 | 47 | NW | ..... | ..... | 6 | ..... | 8 | ..... | N | 0.532 | 13.5 | Very cloudy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.80 | 757.0 | 29.83 | 757.7 | 77.7 | 25.4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Lyons | ..... | ..... | 30.02 | 762.5 | 54.1 | 12.3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchési. |
| Marseilles, Observatory | ..... | ..... | 29.82 | 757.3 | 66.4 | 19.1 | 50 | NW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0.67 | 17. | Rainy ..... | M. Jeys. |
| Mont-Louis | 21.81 | 630.2 | 30.13 | 765.2 | 47.3 | 8.5 | 32 | NW | 5.6 | 2.50 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Partly cl'dy | The Staff. |
| Nice | ..... | ..... | 29.85 | 758.1 | 64.0 | 17.8 | 78 | NW | ..... | ..... | 3 | ..... | 1 | ..... | W | 0.008 | 0.2 | ..... | Mr. Falguère. |
| Paris, Montsouris Obs'y | 29.79 | 756.6 | 30.07 | 763.6 | 59.0 | 15.0 | 52 | NE | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0.433 | 11.0 | Raining..... | Dr. A. Niepce. |
| Perpignan | ..... | ..... | 30.03 | 762.8 | 60.4 | 15.8 | 44 | NE | 20.5 | 9.17 | ..... | ..... | 3 | ..... | NE | 0.106 | 2.7 | ..... | Marié Davy, Director |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... | NW | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Plantade,) H. P. | 22.59 | 571.5 | ..... | ..... | 36.1 | 2.3 | ..... | N | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Saint Maur, (near Paris) | 29.90 | 759.5 | 30.07 | 763.7 | 59.7 | 15.4 | 52 | NE | ..... | ..... | 2 | ..... | 1 | ..... | ENE | 0 | 0 | Slightly cl'dy | E. Renou. |
| Toulouse, Observatory | 29.42 | 747.2 | 30.14 | 765.6 | 52.5 | 11.4 | 65 | NW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Tours | ..... | ..... | ..... | ..... | ..... | ..... | ..... | WNW | ..... | ..... | 1 | ..... | 5 | ..... | N | 0 | 0 | ..... | C. Marquet. |
| Versailles, (near Paris) | ..... | ..... | 30.05 | 763.2 | 60.1 | 15.6 | 48 | NE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0.091 | 2.32 | Fair..... | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.21 | 767.2 | 30.23 | 767.9 | 55.8 | 13.2 | 95 | ESE | 5.6 | 2.5 | ..... | ..... | 10kn | ..... | ..... | 0.012 | 0.3 | Covered ..... | Marc Dechevrens, S. J |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 29.98 | 761.4 | 30.15 | 765.8 | 58.1 | 14.5 | 58 | SE | | | 1 | | 9 | | | 0.142 | 3.6 | | Prof. Arndt. |
| Breslau | 29.56 | 750.8 | 30.09 | 764.3 | 58.8 | 14.9 | 49 | E | | | 4 | | 10 | | | 0.096 | 2.44 | | Royal University Obs'y |
| Carlsruhe | 29.61 | 752.2 | 30.05 | 763.2 | 48.2 | 9.0 | 76 | NE | | | 1 | | 9 | | | 0.094 | 2.4 | Raining | Albert Senz. |
| Cassel | 29.56 | 750.7 | 30.17 | 766.2 | 54.0 | 12.2 | 69 | ENE | | | 2 | | 6 | E | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.94 | 760.4 | 30.10 | 764.5 | 61.0 | 16.1 | 40 | E | | | 4 | | 6cs;k | | | 0 | 0 | | Director Lose. |
| Emden | 30.25 | 768.3 | 30.28 | 769.2 | 59.9 | 15.5 | 59 | NNE | | | 3 | | 0 | | | 0 | 0 | | Prof. Prestel. |
| Frankfort on the Main | 29.74 | 755.3 | 30.10 | 764.6 | 55.4 | 13 | 48 | SE | | | 1 | | 7 | | | 0.071 | 1.8 | | Physical Society. |
| Friedrichshafen | 28.59 | 726.1 | 30.05 | 763.2 | 45.7 | 7.6 | 80 | WNW | | | 2 | | 6 | SE | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 30.12 | 765.0 | 30.19 | 766.8 | 58.3 | 14.6 | 63 | NE | | | 4 | | 3k | | | 0 | 0 | Dust-haze | Captain F. Hegemann. |
| Kiel | 30.22 | 767.5 | 30.23 | 767.9 | 52.0 | 11.1 | 78 | NE | | | 3 | | 0 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 30.13 | 765.4 | 30.22 | 767.5 | 59.0 | 15.0 | 51 | NE | | | 3 | | 2 | | | 0 | 0 | | Prof. E Luther |
| Köslin | | | 30.16 | 766.1 | 57.2 | 14.0 | | NE | | | 4 | | 0 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.71 | 754.7 | 30.14 | 765.5 | 51.8 | 11.0 | 73 | E | | | 3 | | 10 | E | | 0 | 0 | | Prof. Bruhns. |
| Memel, Naval School | 30.23 | 767.9 | 30.28 | 769.1 | 56.8 | 13.8 | 48 | E | | | 3 | | 0 | | | | | | Reinbrecht von Skalweit. |
| Neufahrwasser | 30.23 | 767.9 | 30.25 | 768.3 | 48.2 | 9.0 | 80 | NNE | | | 2 | | 0 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.90 | 759.5 | 30.19 | 766.9 | 59.9 | 15.5 | 54 | SE | | | 5 | | 6 | | | 0 | 0 | | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.59 | 749.3 | 30.06 | 763.4 | 52.0 | 11.1 | 53 | NE | | | 4 | | 8 | NE | | 0 | 0 | | Dr. Schur. |
| Stuttgart | 29.08 | 738.7 | 30.04 | 763.1 | 45.3 | 7.4 | 69 | NE | | | 1 | | 8 | E | | 0.067 | 1.7 | Light rain | Prof. Schoder. |
| Treves, (Trier) | 29.45 | 748.0 | 29.97 | 761.3 | 55.9 | 13.3 | 42 | NE | | | 6 | | 7 | | | 0 | 0 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.52 | 724.3 | 30.03 | 762.8 | 46.6 | 8.1 | 67 | ENE | 4 | 2 | | | 9k | | E | 0.106 | 2.7 | | Dr. Von Bebber. |
| Wustrow, Naval School | 30.25 | 768.4 | 30.29 | 769.4 | 51.8 | 11.0 | 68 | ENE | | | 4 | | 0 | | | 0 | 0 | | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.38 | 746.3 | 29.77 | 756.2 | 60.3 | 15.7 | | SW | | | 1.0 | | | | | | | Sprinkling | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.63 | 752.5 | 29.68 | 753.8 | 80.5 | 26.9 | 37 | WSW | 35? | 15.6? | | | 0 | | | 0 | 0 | Dust-whirl | |
| Deesa | 29.19 | 741.3 | 29.66 | 753.2 | 85.2 | 29.6 | 43 | SSW | | | | | 2 | S | | 0 | 0 | D. clouds | |
| Bombay | 29.73 | 755.2 | 29.77 | 756.2 | 84.2 | 29.0 | 68 | W | 9 | 4.0 | | | 6 | SW | | 0 | 0 | D. clouds | |
| Poona | 27.74 | 704.5 | 29.70 | 754.5 | 85.3 | 29.6 | 44 | NW | | | | | 4 | W | SW | 0 | 0 | Dust-whirl | |
| Lahore | 28.89 | 733.9 | 29.64 | 752.7 | 72.8 | 22.7 | 49 | E | 5.7 | 2.6 | | | 10 | | | 0.02 | 0.5 | Rainy | |
| Belgaum | 27.25 | 692.1 | 29.74 | 755.4 | 83.7 | 28.7 | 49 | W | 11 | 4.9 | | | 3 | S | | 0 | 0 | D. clouds | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.75 | 730.2 | 29.64 | 752.9 | 78.8 | 26.0 | 37 | SE | 3.8 | 1.7 | | | 9 | | | 0.01 | 0.3 | | |
| Agra | 29.15 | 740.3 | 29.72 | 754.9 | 72.7 | 22.6 | 72 | E | | | | | 8 | SW | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.57 | 725.6 | 29.57 | 751.1 | 96.5 | 35.8 | 26 | W | 4.0 | 1.8 | | | 3 | | | 0 | 0 | D. clouds | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.33 | 744.9 | 29.70 | 754.3 | 79.5 | 26.4 | 61 | E | 5.5 | 2.5 | | | 10 | | | 0 | 0 | Overcast | |
| Allahabad | 29.40 | 746.7 | 29.71 | 754.6 | 80.5 | 26.9 | 71 | NW | 2.4 | 1.1 | | | 10 | | SW | 0.17 | 4.3 | Thunder-storm | |
| Patna | 29.47 | 748.6 | 29.65 | 753.1 | 90.3 | 32.4 | 48 | E | 1.5 | 0.7 | | | 8 | E | SE | 0 | 0 | D. clouds | |
| Hazaribagh | 27.70 | 703.6 | 29.71 | 754.6 | 76.8 | 24.9 | 66 | ENE | 8.0 | 3.6 | | | 7 | | SW | 0.01 | 0.3 | Thunder-storm | |
| Cuttack | 29.65 | 753.0 | 29.73 | 755.1 | 85.5 | 29.7 | 62 | SSW | 9.7 | 4.3 | | | 10 | | | 0 | 0 | Overcast | |
| Calcutta (Alipore) | 29.71 | 754.6 | 29.73 | 755.1 | 84.7 | 29.3 | 68 | S | 11 | 4.9 | | | 9 | | SW | 0 | 0 | Overcast | |
| Goalpara | 29.38 | 746.2 | 29.76 | 756.0 | 79.9 | 26.6 | 68 | Calm | 7 | 3.1 | | | 3 | W | | 0.16 | 4.1 | D. clouds | |
| Chittagong | 29.77 | 756.1 | 29.86 | 758.4 | 85.9 | 29.9 | 80 | SSW | 7 | 3.1 | | | 0 | | | 0 | 0 | Misty | |
| Sibsagar | 29.50 | 749.2 | 29.84 | 757.8 | 75.6 | 24.2 | 71 | ENE | 1.3 | 0.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.32 | 719.3 | 29.65 | 753.0 | 91.5 | 33.1 | 32 | NW | 3.1 | 1.4 | | | 2 | SW | | 0 | 0 | D. clouds | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer, corrected for instrum'tal error and temperature. Inches. | Barometer, corrected for instrum'tal error and temperature. Millimeters | Barometer, reduced to sea-level. Inches. | Barometer, reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.45 | 748.1 | 29.86 | 758.4 | 62.1 | 17.1 | 21 | E | 1.8 | 0.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 29.75 | 755.6 | 29.85 | 758.3 | 61.6 | 16.1 | 31 | SSE | 15.0 | 6.7 | ..... | ..... | 5 | WSW | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.66 | 753.4 | 29.85 | 758.2 | 59.5 | 15.3 | 41 | W | 6.3 | 2.8 | ..... | ..... | 4 | W | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.55 | 725.2 | 29.85 | 758.2 | 56.1 | 13.4 | 43 | S | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.34 | 745.2 | 29.85 | 758.3 | 62.6 | 17.0 | ..... | SE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0.134 | 3.4 | ..... | Prof. Schiaparelli. |
| Moncalieri | 28.99 | 736.3 | 29.89 | 759.2 | 52.9 | 11.6 | 74 | NNW | 4.9 | 2.2 | ..... | ..... | 9 | SE | ..... | 0.126 | 3.2 | ..... | Prof. P. F. Denza. |
| Mondovi | 27.96 | 710.3 | 29.86 | 758.5 | 49.6 | 9.8 | 75 | NNW | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.62 | 752.3 | 29.84 | 757.9 | 62.2 | 16.8 | 80 | E | ..... | ..... | 4 | ..... | 4 | NW | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.67 | 753.5 | 29.84 | 757.8 | 61.6 | 16.1 | 65 | W | 0.7 | 0.3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.57 | 751.0 | 29.88 | 759.0 | 61.5 | 16.4 | 41 | ESE | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.53 | 750.1 | 29.79 | 756.6 | 66.2 | 19.0 | 23 | N | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 29.73 | 755.1 | 29.81 | 757.2 | 62.2 | 16.8 | 56 | W | 3.8 | 1.7 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 29.84 | 757.8 | 29.88 | 759.0 | 55.2 | 12.9 | 60 | NW | 15.4 | 6.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.33 | 719.6 | 29.88 | 759.0 | 52.7 | 11.5 | 45 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.70 | 754.3 | 29.81 | 757.1 | 65.8 | 18.8 | 46 | SE | ..... | ..... | 2 | ..... | 3 | S | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.63 | 752.5 | 29.80 | 756.9 | 66.7 | 19.3 | 52 | SW | 6.3 | 2.8 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U. | 29.64 | 752.8 | 29.84 | 757.9 | 65.7 | 18.7 | 62 | SW | ..... | ..... | 4 | ..... | 3 | SSE | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 61.2 | 16.2 | 74 | WNW | 6.3 | 2.8 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.62 | 752.3 | 29.81 | 757.1 | 67.5 | 19.7 | 80 | NW | ..... | ..... | 6 | ..... | 7 | NW | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 28.95 | 735.3 | 29.83 | 757.7 | 64.8 | 18.2 | 73 | NE | 1.3 | 0.6 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.55 | 750.6 | 29.80 | 757.0 | 63.1 | 17.3 | 54 | N | 16.1 | 7.2 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.71 | 754.6 | 29.78 | 756.5 | 63.1 | 17.3 | 69 | SE | ..... | ..... | 2 | ..... | 8 | SW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.29 | 744.0 | 29.85 | 758.1 | 64.4 | 18.0 | 59 | SW | 1.8 | 0.8 | ..... | ..... | 3 | NW | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nagasaki | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Tokei (Yeddo) | 30.56 | 776.2 | 30.63 | 778.0 | 46.8 | 8.2 | 79 | N | 3.5 | 1.6 | ..... | ..... | 10s | ..... | ..... | 0.010 | 0.25 | Cloudy | The Observatory. |
| Tokei (Yeddo) University | 30.51 | 774.9 | 30.61 | 777.6 | 47.2 | 8.4 | 81 | N | 2 | 0.9 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Cloudy | Prof. P. V. Veeder. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 66.2 | 19.0 | 38 | NW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | L. Castillo, A. E. |
| Guadalajara | 25.00 | 635.1 | 30.07 | 763.8 | 42.8 | 6.0 | 56 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | Prof. L. Perez. |
| Guanajuato | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 54.5 | 12.7 | 32 | NW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico | 23.06 | 585.6 | 29.50 | 749.4 | 56.3 | 13.5 | 53 | Calm | 0 | 0 | ..... | 2c | 0 | ..... | ..... | 0 | 0 | Sl'dy foggy | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 52.3 | 11.3 | 56 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | M. V. de Leon, M. E. |
| Puebla | 23.33 | 592.6 | 30.04 | 763.0 | 52.3 | 11.8 | 53 | E | 7.4 | 3.3 | ..... | 1c | 2s | ..... | ..... | 0 | 0 | Clear | Prof. B. Gonzales. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 29.80 | 759.2 | 29.90 | 759.5 | 77.0 | 25.0 | 90 | Calm | 0 | 0 | ..... | 0 | 10n | ..... | S | Inap. | Inap | Threatening | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 29.93 | 760.3 | 29.96 | 761.0 | 78.8 | 26.0 | 80 | Calm | 0 | 0 | ..... | 0 | 10sk | ..... | E | 0 | 0 | Covered | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Puebla, (Catholic Institute) | 23.27 | 591.1 | 30.05 | 763.2 | 51.8 | 11.0 | 53 | S | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | J. A. Bonilla, M. E. |
| Morelia | 24.01 | 609.5 | ..... | ..... | 49.6 | 9.8 | 52 | ESE | 1.9 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | P. Spina. [M.M. D. D |
| Durango | ..... | ..... | ..... | ..... | 50.9 | 10.5 | 96 | S | 0.9 | 0.4 | ..... | 0 | 1 | ..... | S | 0 | 0 | Hazy | M. Tena, F. L. Param. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.6 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Groningen | 30.16 | 766.1 | 30.16 | 766.1 | 57.6 | 14.2 | ..... | NE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... |
| Helder | 30.12 | 765.0 | 30.17 | 766.4 | 57.0 | 13.9 | ..... | E | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... |
| Hellevoetsluis | 30.17 | 766.4 | 30.17 | 766.4 | 59.2 | 15.1 | ..... | NE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... |
| Utrecht | 30.13 | 765.4 | 30.13 | 765.4 | 60.1 | 15.6 | 65 | N | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | 30.11 | 764.8 | 30.16 | 766.0 | 59.0 | 15.0 | 54 | NNE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Light cloudy | H. v d Brink. |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.29 | 769.4 | 30.35 | 770.8 | 55.4 | 13.0 | 45 | NW | 4.7 | 2.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Bröno | 30.21 | 767.4 | 30.25 | 768.4 | 44.6 | 7.0 | 88 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 30.16 | 766.0 | 30.30 | 769.7 | 57.4 | 14.1 | 46 | SW | 4 | 2 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 30.05 | 763.2 | 30.09 | 764.3 | 38.1 | 3.4 | ·75 | SSW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.56 | 750.9 | 29.76 | 755.8 | 61.2 | 16.2 | 81 | WSW | 8.7 | 3.9 | ..... | ..... | 5 | ..... | ..... | 0.236 | 6.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.09 | 738.9 | 30.10 | 764.4 | 71.6 | 22.0 | 52 | SW | 3.1 | 1.4 | ..... | ..... | 6 | SW | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.02 | 762.5 | 30.11 | 764.7 | 67.8 | 19.9 | 74 | SW | 6.3 | 2.8 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.74 | 755.5 | 30.10 | 764.6 | 62.8 | 17.1 | 82 | WSW | 9.8 | 4.4 | ..... | ..... | 9 | WSW | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 29.78 | 756.4 | 29.85 | 758.2 | 65.8 | 18.8 | 66 | WSW | 17.4 | 7.8 | ..... | ..... | 5 | ..... | ..... | 0.201 | 5.1 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.69 | 754.2 | 29.70 | 754.4 | 82.4 | 28.0 | ..... | S | ..... | ..... | 3 | ..... | 3 | ..... | S | 1 | ..... | D. clouds | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Rio Douro, S. 25° 58′, E. 32° 37′ | ..... | ..... | 29.99 | 761.7 | 78.8 | 26.0 | ..... | ESE | ..... | ..... | 4 | ..... | 4 | ..... | ESE | 3 | E | D. clouds | J. T. d'Oliveria, Com'd't. |
| Sado, Porto Praya, Cape Verde Islands | 30.04* | 763.0* | 30.05* | 763.3* | 93.2 | 34.0 | ..... | NNE | ..... | ..... | 2 | ..... | 2 | ..... | NE | 2 | NE | D. clouds | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.76 | 755.9 | 29.77 | 756.1 | ..... | ..... | ..... | W | ..... | ..... | 2 | ..... | 6 | ..... | W | 1 | ..... | Blue sky | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreina, dos Amas, Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.69 | 754.2 | 30.11 | 764.9 | 59.4 | 15.2 | 39 | ENE | 11 | 5 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.83 | 757.6 | 30.25 | 768.4 | 52.5 | 11.4 | 48 | NE | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 30.15 | 765.9 | 30.41 | 772.3 | 41.9 | 5.5 | 48 | ESE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.37 | 771.5 | 30.39 | 771.9 | 36.0 | 2.2 | 79 | W | 11 | 5 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.93 | 760.3 | 30.26 | 768.7 | 38.8 | 3.8 | 73 | WSW | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ch. Forsten. |
| Kieff | 29.41 | 746.9 | 30.05 | 763.2 | 51.1 | 10.6 | 48 | ENE | 18 | 8 | ..... | ..... | 7c | ..... | ..... | ..... | ..... | Light clouds | Physical Cabinet. |
| Nikolaiev | 29.85 | 758.2 | 29.92 | 760.0 | 58.6 | 14.8 | 52 | NE | 18 | 8 | ..... | ..... | 8n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.87 | 758.6 | 29.89 | 759.1 | 50.5 | 10.3 | 89 | NNE | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.68 | 753.8 | 30.26 | 768.5 | 33.6 | 0.9 | 54 | N | 13 | 6 | ..... | ..... | 3ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.63 | 752.5 | 29.83 | 757.7 | 49.5 | 9.7 | 41 | NNE | 22 | 10 | ..... | ..... | 2c | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 30.09 | 764.3 | 30.11 | 764.8 | 27.0 | — 2.8 | 87 | NW | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.30 | 718.8 | 29.65 | 753.0 | 73.6 | 23.1 | 29 | Calm | 0 | 0 | ..... | ..... | 8k | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 29.73 | 755.2 | 29.65 | 753.1 | 58.6 | 14.8 | 51 | NW | 4 | 2 | ..... | ..... | 9kn | ..... | ..... | Blank | Blank | ..... | Sebastianof. |
| Krotkowo* | 29.26 | 743.1 | 29.75 | 755.7 | 25.5 | — 3.6 | 67 | N | 27 | 12 | ..... | ..... | 10k | ..... | ..... | ..... | ..... | Light snow. | Cand. Fatjanow. |
| Kasan | 29.47 | 748.5 | 29.75 | 755.6 | 26.6 | — 3.0 | 54 | NNW | 13 | 6 | ..... | ..... | 10k | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.41 | 721.5 | 29.38 | 746.3 | 25.3 | — 3.7 | 78 | N | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.60 | 751.7 | 29.82 | 757.5 | 66.7 | 19.3 | 18 | SSW | 18 | 8 | ..... | ..... | 10k | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.35 | 720.2 | 30.04 | 763.1 | 59.7 | 15.4 | 40 | SW | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light clouds | Michelson. |
| Barnaul | 29.46 | 748.2 | 29.98 | 761.6 | 44.1 | 6.7 | 57 | SW | 9 | 4 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Yeniseisk | 29.70 | 754.3 | 30.03 | 762.8 | 30.0 | — 1.1 | 76 | SE | 13 | 6 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 29.99 | 761.7 | 30.13 | 765.3 | 59.9 | 15.5 | 58 | Calm | 0 | 0 | ..... | ..... | 6k | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.98 | 710.7 | 30.17 | 766.2 | 21.4 | — 5.9 | 50 | Calm | 0 | 0 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Vladivostock | 30.22 | 767.5 | 30.32 | 770.0 | 38.7 | 3.7 | 69 | SE | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 35.1 | 1.7 | 68 | E | 2 | 1 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.87 | 758.7 | 29.98 | 761.4 | 58.5 | 14.7 | 77 | SE | 2.0 | 0.92 | ..... | 8 | 3 | ..... | ..... | 0.045 | 1.14 | Covered | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.10 | 764.5 | 30.15 | 765.9 | 62.6 | 17.0 | 78 | NW | 2.7 | 1.20 | ..... | 2 | 5 | NW | ..... | 0.134 | 3.4 | Cloudy | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.15 | 689.5 | ..... | ..... | 60.8 | 16.0 | 73 | NW | 5.2 | 2.31 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.84 | 707.0 | 29.99 | 761.8 | 73.2 | 22.9 | 44 | W | 7.4 | 3.33 | ..... | 3 | 0 | NW | ..... | 0 | 0 | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 29.87 | 758.7 | 30.01 | 762.3 | 85.8 | 29.9 | 34 | W | 3.4 | 1.53 | ..... | 3 | 1 | E | ..... | ..... | ..... | Almost clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.15 | 740.3 | 30.02 | 762.6 | 67.5 | 19.7 | 73 | SW | 5.0 | 2.22 | ..... | 3 | 4 | SW | ..... | 0 | 0 | Cloudy | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.89 | 759.2 | 29.95 | 760.8 | 78.5 | 25.8 | 88 | Calm | 0 | 0 | ..... | 1ck | 0 | ..... | ..... | 0.020 | 0.5 | Clear | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 30.01 | 762.3 | 30.11 | 764.8 | 68.4 | 20.2 | 76 | WNW | 8.0 | 3.6 | ..... | 2 | 4 | W | W | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.88 | 759.0 | 29.97 | 761.3 | 68.7 | 20.4 | 77 | SE | 0 | 0 | ..... | 2cs | 0 | E | ..... | 0 | 0 | Clear | Leonardo de Tejeda, Chief of Engineers. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.



Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Upper. 0–10. | Clouds. Amount. Low'r. 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.14 | 765.6 | 30.18 | 766.6 | 40.3 | 4.6 | ..... | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.21 | 767.2 | 30.26 | 768.5 | 43.2 | 6.2 | 67 | SW | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.21 | 767.2 | 30.26 | 768.5 | 47.3 | 8.5 | 58 | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 30.14 | 765.5 | 30.32 | 770.0 | 51.8 | 11.0 | 54 | NNE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 30.19 | 766.9 | 30.25 | 768.4 | 52.2 | 11.2 | 50 | ESE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 30.23 | 767.9 | 30.31 | 769.8 | 54.7 | 12.6 | 52 | SW | 8.9 | 4.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.54 | 724.8 | 29.07 | 781.2 | 52.2 | 11.2 | 57 | E | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0.055 | 1.4 | Cloudy..... | The Observatory. |
| Zurich | 28.36 | 720.4 | 30.02 | 762.6 | 47.1 | 8.4 | 72 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.169 | 4.3 | Raining..... | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +0.6 mm.; Thermometer, —0.3 cent.; Relative Humidity, 0 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.72 | 755.0 | 59.0 | 15.0 | 60 | N | 19 | 8.5 | ..... | ..... | 7 | ..... | ..... | 0.315 | 8.0 | Raining..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.53 | 757.7 | 62.2 | 16.8 | ..... | W | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0.08 | 2. | Slightly cl'dy | B. Stéfanidès. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | Imperial Observatory. |
| Beirut, (Syria,) Lee Obs'y | 29.69 | 754.1 | 29.81 | 757.1 | 77.0 | 25.0 | 63 | SW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.71 | 754.6 | 29.78 | 756.4 | 34.7 | 1.5 | 92 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Cloudy..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.26 | 743.2 | 29.56 | 750.8 | 43 | 6.1 | ..... | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | SW | 0 | 0 | Cloudy..... | W. R. Rigg. |
| *Chatham, N. B | 29.70 | 754.4 | 29.70 | 755.0 | 34 | 1.1 | 93 | NE | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.01 | 0.3 | Cloudy..... | G. A. Blair. |
| Charlottetown, P. E. Island | 29.77 | 756.1 | 29.81 | 757.2 | 40 | 4.4 | 69 | E | 4 | 1.8 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair..... | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.28 | 743.7 | 29.47 | 748.5 | 45.7 | 7.6 | 83 | SW | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0.404 | 12.5 | Cloudy..... | James Smith, M. A. |
| Dalhousie, N. B | 29.75 | 755.6 | 29.78 | 756.4 | 32 | 0.0 | 100 | E | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.17 | 4.3 | Drizzling..... | H. A. Johnson. |
| Esquimault, B. C | 29.98 | 761.5 | 30.03 | 762.7 | 38.1 | 3.4 | 94 | SW | ..... | ..... | ..... | 7k | 0 | ..... | ..... | 0.04 | 1.0 | Fair..... | W. H. Revis. |
| *Father Point, Quebec | 29.63 | 752.6 | 29.65 | 753.1 | 38 | 3.3 | 86 | E | 10 | 4.5 | ..... | ..... | 10n | ..... | S | 0.12 | 3.0 | Cloudy..... | J. McWilliams. |
| Fredericton, N. B | 29.68 | 753.9 | 29.75 | 755.6 | 42.6 | 5.9 | 87 | E | 1 | 0.4 | ..... | 1cs | 9s | E | ..... | 0.63 | 16.0 | Cloudy..... | Prof. Harrison. |
| *Fort Garry Manitoba | 28.77 | 730.7 | 29.61 | 752.1 | 30 | — 1.1 | 97 | W | 8 | 3.6 | ..... | 2ck | 2ks | W | W | 0.160 | 4.06 | Fair..... | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.45 | 722.6 | 29.54 | 750.3 | 47 | 8.3 | 70 | W | ..... | ..... | 2 | 1c | 0 | NE | ..... | 0 | 0 | Clear..... | James Grant. |
| *Halifax, N. S | 29.65 | 753.1 | 29.79 | 756.7 | 40 | 4.4 | 68 | SE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | F. Allison, M. A. |
| Hamilton, Ontario | 29.19 | 741.4 | 29.55 | 750.6 | 49.2 | 9.6 | 66 | SW | ..... | ..... | 1 | 5ck | ..... | ..... | ..... | 0 | 0 | Clear..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.66 | 753.4 | 29.69 | 754.1 | 35 | 1.7 | 90 | NE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Overcast..... | E. Weedon. |
| *Kingston, Ontario | 29.20 | 741.7 | 29.54 | 750.3 | 43 | 6.1 | 76 | SW | 3 | 1.3 | ..... | 8c | 0 | Calm | ..... | Inap. | Inap. | Fair..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.81 | 757.2 | 29.85 | 758.2 | 33.0 | 0.6 | ..... | W | 2 | 0.9 | ..... | 4c | 0 | W | ..... | 0 | 0 | Fair..... | C. H. Rigby. |
| *Montreal, Quebec | 29.28 | 743.7 | 29.48 | 748.8 | 47 | 8.3 | 82 | NW | 5 | 2.2 | ..... | ..... | 10n | ..... | ..... | 1.05 | 26.7 | Light rain... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 28.79 | 731.3 | 29.49 | 749.0 | 40 | 4.4 | 91 | S | 4 | 1.8 | ..... | 5k | 2s | W | W | 0 | 0 | Fair..... | Rev. R. Mosley. |
| Peterboro, Ontario | 28.77 | 730.5 | 29.50 | 749.3 | 44.1 | 6.7 | 79 | Calm | ..... | ..... | ..... | 1c | 2s | ..... | ..... | 0 | 0 | Bright..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 28.87 | 733.3 | 29.56 | 750.8 | 48 | 8.9 | 78 | W | 10 | 4.5 | ..... | 10ck | 0 | W | ..... | 0 | 0 | Fair..... | H. Morgan. |
| Port Hastings, N. S | 29.80 | 756.9 | 29.85 | 758.2 | 34.6 | 1.4 | ..... | SW | 2 | 0.9 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair..... | M. Payne. |
| Port Stanley, Ontario | 28.94 | 735.1 | 29.50 | 751.0 | 46 | 7.8 | 78 | SW | 15 | 6.7 | ..... | 5k | 0 | W | ..... | 0 | 0 | Fine..... | Peter Grant. |
| *Quebec, Quebec | 29.26 | 743.2 | 29.58 | 751.3 | 38 | 3.3 | 100 | NE | ..... | ..... | 5 | ..... | 10n | ..... | NE | 0.48 | 12.2 | Fair..... | |
| *Rockliffe, Ontario | 29.03 | 737.3 | 29.48 | 748.8 | 39 | 3.9 | 82 | Calm | 0 | 0 | ..... | Haze | 0 | SW | ..... | 0 | 0 | Heavy rain.. | Capt. Ashe, R. N. |
| St. Andrews, N. B | 29.51 | 752.1 | 29.66 | 753 4 | 40 | 4.4 | 90 | E | 6 | 2.7 | ..... | ..... | 10ks | ..... | ..... | 0.67 | 1.8 | Fair..... | W. H. McIntyre. |
| St. John, N. B | 29.56 | 750.8 | 29.73 | 755 1 | 38 | 3.3 | 90 | E | 6 | 2.7 | ..... | ..... | 9k | ..... | ..... | 0.340 | 8.64 | Cloudy..... | Dr. Gove. |
| *Saugeen, Ontario | 28.78 | 731.0 | 29.49 | 749.0 | 45 | 7.2 | 85 | Calm | 0 | 0 | ..... | 2k | 5ks | ..... | ..... | 0 | 0 | Clearing..... | G. Murdock, C. E. |
| Stayner, Ontario | 28.72 | 729.5 | 29.49 | 749.0 | 48 | 8.9 | 92 | W | 5 | 2.2 | ..... | 8k | 0 | W | ..... | 0 | 0 | Cloudy..... | K. Stewart. |
| Stratford, Ontario | 28.26 | 717.8 | 29.53 | 750.0 | 45.8 | 7.7 | 70 | SW | 15 | 6.7 | ..... | 2cs | 5s;ks | W | ..... | 0 | 0 | Cloudy..... | R. J. Cole. |
| *Sydney, C. B | 29.80 | 756.4 | 29.89 | 759.2 | 37 | 2.8 | 59 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair..... | C. J. MacGregor, M. A. |
| *Toronto, Ontario | 29.16 | 740.7 | 29.54 | 750.3 | 44 | 6.7 | 76 | SW | 2 | 0.9 | ..... | 2ck | 2ks | W | Calm | 0 | 0 | Clear..... | T. C. Hill. |
| Windsor, N. S | 29.68 | 753.9 | 29.77 | 756.1 | 46.0 | 7.2 | 64 | SE | 12 | 5.4 | ..... | 1cs | 0 | ..... | ..... | 0 | 0 | Fair..... | Magnetic Observatory. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | J. Montgomery. |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 35.6 | 1.7 | 90 | SE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.03 | 0.8 | Misty..... | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,017 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.27 | 743.4 | 29.49 | 749.0 | 47 | 8.3 | 85 | NW | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0.98 | 24.9 | Cloudy | |
| Alpena, Michigan | 28.81 | 731.8 | 29.44 | 747.8 | 45 | 7.2 | 53 | SW | 8 | 3.6 | ..... | 2c | 2s | W | SW | 0 | 0 | Fair | |
| Atlantic City, New Jersey | 29.59 | 751.6 | 29.61 | 752.1 | 54 | 12.2 | 86 | W | 11 | 4.9 | ..... | 5c | 0 | Calm | ..... | 0.25 | 6.3 | Fair | |
| Augusta, Georgia | 29.70 | 756.7 | 29.97 | 761.2 | 58 | 14.4 | 64 | NW | 2 | 0.9 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Baltimore, Maryland | 29.60 | 751.8 | 29.65 | 753.1 | 57 | 13.9 | 47 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.11 | 2.8 | Clear | |
| Barnegat, New Jersey | 29.55 | 750.8 | 29.58 | 751.3 | 57 | 13.9 | 69 | NW | 13 | 5.8 | ..... | 5c | Haze | W | Calm | 0.59 | 15.0 | Fair | |
| Bismarck, Dakota | 27.97 | 710.4 | 29.83 | 757.7 | 32 | 0.0 | 69 | W | 8 | 3.6 | ..... | 0 | 2s | ..... | NW | 0 | 0 | Clear | |
| Boise City, Idaho | 27.05 | 687.1 | 29.03 | 760.2 | 37 | 2.8 | 90 | W | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.08 | 2.0 | Light rain | |
| Boston, Massachusetts | 29.19 | 741.4 | 29.34 | 745.2 | 43 | 6.1 | 100 | NW | 12 | 5.4 | ..... | ..... | 10n;fg | ..... | N | 0.83 | 21.1 | Light rain | |
| Brackettville, Texas | 28.74 | 730.0 | 29.74 | 755.4 | 67 | 19.4 | 84 | E | 8 | 3.6 | ..... | ..... | 10ks | ..... | SE | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 28.70 | 729.0 | 29.70 | 754.4 | 34 | 1.1 | 99 | W | 6 | 2.7 | ..... | 2ck | 0 | NW | ..... | 0 | 0 | Fair | |
| Brownsville, Texas | 29.84 | 757.9 | 29.91 | 759.7 | 71 | 21.7 | 79 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 28.84 | 732.5 | 29.52 | 749.8 | 45 | 7.2 | 76 | S | 10 | 4.5 | ..... | 2ck | 1s | W | W | 0 | 0 | Fair | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 60 | 15.6 | 91 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.24 | 742.7 | 29.49 | 749.0 | 46 | 7.8 | 85 | W | 2 | 0.9 | ..... | ..... | 10n | ..... | N | 0.88 | 22.4 | Light rain | |
| Cairo, Illinois | 29.49 | 749.0 | 29.87 | 758.5 | 62 | 16.7 | 46 | SW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Grant, Arizona | 25.12 | 648.9 | 29.92 | 760.0 | 52 | 11.1 | 47 | NE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | 26.65 | 676.9 | 30.14 | 765.5 | 47 | 8.3 | 55 | N | ..... | ..... | 1 | 8ck | 0 | S | ..... | 0 | 0 | Fair | |
| Campo, California | 27.33 | 694.2 | 29.90 | 759.4 | 51 | 10.6 | 92 | S | 6 | 2.7 | ..... | ..... | Fog | ..... | S | 0.06 | 1.5 | Foggy | |
| Cape Hatteras, N. Carolina | 29.81 | 757.2 | 29.81 | 757.2 | 59 | 15.0 | 76 | NW | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0.45 | 11.4 | Clear | |
| Cape Henry, Virginia | 29.70 | 754.4 | 29.73 | 755.1 | 59 | 15.0 | 59 | W | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0.41 | 10.4 | Clear | |
| Cape Lookout, N. Carolina | 29.82 | 757.4 | 29.84 | 757.9 | 58 | 14.4 | 70 | NW | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | |
| Cape May, New Jersey | 29.61 | 752.1 | 29.64 | 752.8 | 51 | 10.6 | 79 | NW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0.80 | 20.3 | Clear | |
| Charleston, South Carolina | 29.89 | 759.2 | 29.96 | 761.0 | 60 | 15.6 | 55 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0.40 | 10.2 | Clear | |
| Cheyenne, Wyoming | 23.82 | 605.0 | 29.76 | 755.9 | 31 | — 0.6 | 69 | NW | 12 | 5.4 | ..... | 2ck | 0 | NW | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 28.97 | 735.8 | 29.64 | 752.8 | 51 | 10.6 | 65 | S | 6 | 2.7 | ..... | 10k | 0 | W | ..... | 0 | 0 | Cloudy | |
| Cincinnati, Ohio | 29.08 | 738.6 | 29.72 | 754.9 | 58 | 14.4 | 42 | SW | 6 | 2.7 | ..... | 1k | 0 | W | ..... | 0 | 0 | Clear | |
| Cleveland, Ohio | 28.90 | 734.0 | 29.61 | 752.1 | 50 | 10.0 | 52 | SW | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Concho, Texas | 27.88 | 708.1 | 29.51 | 749.5 | 62 | 16.7 | 76 | SW | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.10 | 746.7 | 29.86 | 758.4 | 57 | 13.9 | 81 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Davenport, Iowa | 29.08 | 738.6 | 29.70 | 754.4 | 47 | 8.3 | 77 | Calm | 0 | 0 | ..... | 4c | 0 | W | ..... | Inap. | Inap. | Fair | |
| Deadwood, Dakota | 25.24 | 641.1 | ..... | ..... | 35 | 1.7 | 80 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | ..... | Inap. | Inap. | Cloudy | |
| Denison, Texas | 29.01 | 736.8 | 29.79 | 756.7 | 60 | 15.6 | 71 | S | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denver, Colorado | 24.55 | 623.6 | 29.77 | 756.1 | 41 | 5.0 | 41 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Detroit, Michigan | 28.92 | 734.6 | 29.57 | 751.1 | 48 | 8.9 | 63 | W | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dodge City, Kansas | 27.08 | 687.8 | 29.33 | 745.0 | 45 | 7.2 | 76 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 28.95 | 735.3 | 29.64 | 752.8 | 49.5 | 9.7 | 66 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Duluth, Minnesota | 28.88 | 733.5 | 29.55 | 750.6 | 39 | 3.9 | 64 | W | 8 | 3.6 | ..... | 2k | 0 | W | ..... | 0.04 | 1.0 | Fair | |
| Eagle Pass, Texas | 29.11 | 739.4 | 29.84 | 757.9 | 67 | 19.4 | 89 | E | 8 | 3.6 | ..... | 10k | 0 | E | ..... | 0 | 0 | Cloudy | |
| Eastport, Maine | 29.61 | 752.1 | 29.68 | 753.9 | 40 | 4.4 | 82 | E | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0.14 | 3.6 | Cloudy | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 65 | 18.3 | 48 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 28.95 | 735.3 | 29.65 | 753.1 | 53 | 11.7 | 54 | Calm | 0 | 0 | ..... | 2c | 0 | W | ..... | 0 | 0 | Fair | |
| Escanaba, Michigan | 28.85 | 732.8 | 29.50 | 749.3 | 39 | 3.9 | 74 | W | 6 | 2.7 | ..... | 8k | 0 | W | ..... | 0.05 | 1.3 | Cloudy | |
| Florence, Arizona | 28.22 | 716.8 | 29.82 | 757.4 | 65 | 18.3 | 49 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | 24.16 | 613.6 | 30.16 | 766.1 | 49 | 9.4 | 57 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.38 | 644.6 | ..... | ..... | 41 | 5.0 | 33 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.10 | 637.5 | 30.03 | 762.5 | 62 | 16.7 | 48 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.21 | 741.9 | 29.73 | 755.1 | 62 | 16.7 | 51 | S | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.48 | 723.4 | 29.71 | 754.6 | 63 | 17.2 | 78 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.78 | 756.4 | 29.81 | 757.2 | 14 | —10.0 | 100 | E | 6 | 2.7 | ..... | ..... | 10c | ..... | SW | Inap. | Inap. | Cloudy | |
| Fort Sill, Indian Territory | 28.48 | 723.4 | 29.56 | 750.8 | 58 | 14.4 | 81 | S | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Galveston, Texas | 29.91 | 759.7 | 29.95 | 760.7 | 66 | 18.9 | 84 | S | 4 | 1.8 | ..... | 1c | 0 | W | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 28.94 | 735.1 | 29.57 | 751.1 | 50 | 10.0 | 72 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianapolis, Indiana | 28.97 | 735.8 | 29.73 | 755.1 | 55 | 12.8 | 56 | SW | 2 | 0.9 | ..... | 2ck | 0 | W | ..... | 0 | 0 | Clear | |
| Indianola, Texas | 29.91 | 759.7 | 29.93 | 760.2 | 69 | 20.6 | 90 | SE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.62 | 726.9 | 29.71 | 754.6 | 62 | 16.7 | 72 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 29.93 | 760.2 | 29.96 | 761.0 | 68 | 20.0 | 35 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.08 | 738.6 | 29.68 | 753.9 | 56 | 13.3 | 87 | SW | 6 | 2.7 | ..... | ..... | 10n | ..... | SW | Inap. | Inap. | Light rain | |
| Key West, Florida | 29.92 | 760.0 | 29.95 | 760.7 | 77 | 25.0 | 86 | N | 9 | 4.0 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Kittyhawk, North Carolina | 29.74 | 755.4 | 29.76 | 755.9 | 56 | 13.3 | 75 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0.73 | 18.5 | Clear | |
| Knoxville, Tennessee | 28.92 | 734.6 | 29.92 | 760.0 | 50 | 10.0 | 45 | W | 6 | 2.7 | ..... | 1ck | 0 | NW | ..... | 0 | 0 | Clear | |
| La Crosse, Wisconsin | 28.92 | 734.6 | 29.64 | 752.8 | 45 | 7.2 | 68 | W | 3 | 1.3 | ..... | 2c | 0 | W | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 25.95 | 659.1 | 30.10 | 764.5 | 45 | 7.2 | 60 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.44 | 747.8 | 29.78 | 756.4 | 68 | 20.0 | 84 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 28.84 | 732.5 | 29.66 | 753.4 | 54 | 12.2 | 61 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.53 | 750.8 | 29.90 | 759.4 | 58 | 14.4 | 88 | W | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Louisville, Kentucky | 29.22 | 742.2 | 29.77 | 756.1 | 58 | 14.4 | 37 | SW | 8 | 3.6 | ..... | 0 | Sm'e | ..... | S | 0 | 0 | Clear | |
| Lynchburg, Virginia | 29.12 | 739.6 | 29.79 | 756.7 | 55 | 12.8 | 44 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 28.74 | 730.0 | 29.43 | 747.5 | 40 | 4.4 | 73 | W | 12 | 5.4 | ..... | 5ck | 0 | W | ..... | 0.03 | 0.8 | Fair | |
| Mason, Texas | 28.21 | 716.5 | 29.91 | 759.7 | 64 | 17.8 | 83 | S | 10 | 4.5 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Memphis, Tennessee | 29.61 | 752.1 | 29.92 | 760.0 | 56 | 13.3 | 57 | S | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 28.89 | 733.8 | 29.60 | 751.8 | 47 | 8.3 | 77 | SW | 12 | 5.4 | ..... | 1k | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mobile, Alabama | 29.90 | 761.7 | 30.03 | 762.7 | 56 | 13.3 | 78 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Montgomery, Alabama | 29.78 | 756.4 | 30.02 | 762.5 | 55 | 12.8 | 58 | Calm | 0 | 0 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Morgantown, West Virginia | 28.64 | 727.4 | 29.67 | 753.6 | 50 | 10.0 | 58 | W | 2 | 0.9 | ..... | 0 | 2s | ..... | SW | 0 | 0 | Fair | |
| Mt. Washington, N. H. | 23.18 | 588.8 | 29.54 | 750.3 | 28 | — 2.2 | 100 | E | 54 | 24.1 | ..... | ..... | 10a | ..... | E | 2.38 | 60.5 | Heavy rain | |
| Nashville, Tennessee | 29.36 | 745.7 | 29.89 | 759.2 | 59 | 15.0 | 43 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New Haven, Connecticut | 29.36 | 745.7 | 29.47 | 748.5 | 52 | 11.1 | 66 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.94 | 23.9 | Cloudy | |
| New London, Connecticut | 29.39 | 746.5 | 29.44 | 747.8 | 49 | 9.4 | 93 | NW | 9 | 4.0 | ..... | ..... | 10n | ..... | NW | 0.13 | 3.3 | Light rain | |
| New Orleans, Louisiana | 29.93 | 760.2 | 29.99 | 761.7 | 62 | 16.7 | 61 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Newport, Rhode Island | 29.37 | 746.0 | 29.42 | 747.5 | 47 | 8.3 | 100 | W | 8 | 3.6 | ..... | ..... | 10n | ..... | W | 1.71 | 43.4 | Light rain | |
| New York, New York | 29.38 | 746.2 | 29.55 | 750.6 | 52 | 11.1 | 60 | W | 6 | 2.7 | ..... | 0 | Haze | ..... | Calm | 0.55 | 14.0 | Clear | |
| Norfolk, Virginia | 29.70 | 754.4 | 29.76 | 755.9 | 57 | 13.9 | 63 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.34 | 8.6 | Clear | |
| North Platte, Nebraska | 26.00 | 653.2 | 29.45 | 748.0 | 43 | 6.1 | 75 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 30.01 | 762.2 | 30.05 | 763.3 | 36 | 2.2 | 90 | SW | 5 | 2.2 | ..... | 0 | 4s | ..... | Calm | 0 | 0 | Fair | |
| Omaha, Nebraska | 28.62 | 726.9 | 29.67 | 753.6 | 50 | 10.0 | 65 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Oswego, New York | 29.21 | 741.9 | 29.52 | 749.8 | 52 | 11.1 | 54 | S | 2 | 0.9 | ..... | 8c | 0 | Calm | ..... | 0.35 | 8.9 | Fair | |
| Pembina, Dakota | 28.76 | 730.5 | 29.61 | 752.1 | 32 | 0.0 | 79 | NW | 8 | 3.6 | ..... | 5k | 0 | NW | ..... | 0.05 | 1.3 | Fair | |
| Philadelphia, Pennsylvania | 29.56 | 750.8 | 29.61 | 752.1 | 55 | 12.8 | 55 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.39 | 9.9 | Clear | |
| Phœnix, Arizona | 28.71 | 729.2 | 30.51 | 774.9 | 54 | 12.2 | 61 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.65 | 448.3 | 29.86 | 758.4 | 18 | — 7.8 | 22 | SW | 40 | 17.9 | ..... | 2c | 0 | N | ..... | 0 | 0 | Clear | |
| Pioche, Nevada | 23.86 | 606.0 | 29.83 | 752.6 | 45 | 7.2 | 39 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 28.84 | 732.5 | 29.63 | 752.6 | 52 | 11.1 | 47 | W | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Port Huron, Michigan | 28.89 | 733.8 | 29.53 | 750.0 | 48 | 8.9 | 63 | W | 9 | 4.0 | ..... | 8k | 0 | W | ..... | 0 | 0 | Fair | |
| Portland, Maine | 29.40 | 746.7 | 29.45 | 748.0 | 41 | 5.0 | 91 | NE | 16 | 7.2 | ..... | ..... | 10n | ..... | Calm | 1.25 | 31.7 | Light rain | |
| Portland, Oregon | 30.07 | 763.8 | 30.18 | 766.6 | 40 | 4.4 | 82 | NW | 1 | 0.4 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light rain | |
| Prescott, Arizona | 24.65 | 626.1 | 30.01 | 762.2 | 47 | 8.3 | 28 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Punta Rassa, Florida | 29.94 | 760.5 | 29.96 | 761.0 | 72 | 22.2 | 85 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Upper. 0—10. | Clouds. Amount. Low'r. 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Red Bluff, California | 29.52 | 749.8 | 29.88 | 758.9 | 53 | 11.7 | 80 | SE | 8 | 3.6 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | |
| Rochester, New York | 28.89 | 733.8 | 29.49 | 749.0 | 48 | 8.9 | 63 | SW | 7 | 3.1 | ..... | 10cs | 0 | W | ..... | 0 | 0 | Cloudy | |
| Roseburg, Oregon | 29.58 | 751.3 | 30.16 | 766.1 | 38 | 3.3 | 91 | Calm | 0 | 0 | ..... | 2ck | 2s | Calm | Calm | Inap. | Inap. | Fair | |
| Sacramento, California | 29.79 | 756.7 | 29.87 | 758.7 | 52 | 11.1 | 79 | S | 12 | 5.4 | ..... | 1k | 0 | S | ..... | 0 | 0 | Clear | |
| St. Louis, Missouri | 29.21 | 741.9 | 29.76 | 755.9 | 59 | 15.0 | 48 | W | 6 | 2.7 | ..... | 0 | 5s | ..... | Calm | 0.01 | 0.3 | Fair | |
| St. Marks, Florida | 29.97 | 761.2 | 29.98 | 761.5 | 59 | 15.0 | 58 | N. | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul, Minnesota | 28.80 | 731.5 | 29.62 | 752.3 | 41 | 5.0 | 56 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salt Lake City, Utah | 25.39 | 644.9 | 29.72 | 754.9 | 51 | 10.6 | 28 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | ..... | ..... | ..... | |
| San Antonio, Texas | 29.21 | 741.9 | 29.78 | 756.4 | 64 | 17.8 | 94 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Clear | |
| San Diego, California | 29.88 | 758.9 | 29.95 | 760.7 | 58 | 14.4 | 94 | W | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 28.99 | 736.3 | 29.64 | 752.8 | 51 | 10.6 | 59 | W | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0.11 | 2.8 | Cloudy | |
| Sandy Hook, New Jersey | 29.52 | 749.8 | 29.55 | 750.6 | 54 | 12.2 | 74 | W | 13 | 5.8 | ..... | 2c | 0 | W | ..... | 0 | 0 | Clear | |
| San Francisco, California | 29.84 | 757.9 | 29.90 | 759.4 | 53 | 11.7 | 89 | S | 2 | 0.9 | ..... | 0 | 2s | ..... | Calm | 0.56 | 14.2 | Fair | |
| Santa Fé, New Mexico | 23.17 | 588.5 | 29.71 | 754.6 | 39 | 3.9 | 25 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | |
| Savannah, Georgia | 29.86 | 758.4 | 29.96 | 761.0 | 61 | 16.1 | 59 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Shreveport, Louisiana | 29.72 | 754.9 | 29.93 | 760.2 | 58 | 14.4 | 70 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.09 | 2.3 | Clear | |
| Smithville, North Carolina | 29.88 | 758.9 | 29.91 | 759.7 | 60 | 15.6 | 49 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Springfield, Massachusetts | 29.27 | 743.4 | 29.39 | 746.5 | 51 | 10.6 | 79 | NW | 4 | 1.8 | ..... | ..... | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Stockton, Texas | 26.77 | 680.0 | 29.77 | 756.1 | 59 | 15.0 | 48 | S | 3 | 1.3 | ..... | ..... | 10n | ..... | NW | 1.17 | 29.7 | Light rain | |
| Thatcher's Island, Mass. | 29.30 | 744.2 | 29.35 | 745.5 | 43 | 6.1 | 92 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Toledo, Ohio | 28.96 | 735.6 | 29.61 | 752.1 | 54 | 12.2 | 49 | W | 12 | 5.4 | ..... | ..... | 10n | ..... | NE | 0.94 | 23.9 | Light rain | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 54 | 12.2 | 73 | SE | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tybee Island, Georgia | 29.92 | 760.0 | 29.95 | 760.7 | 60 | 15.6 | 61 | NW | 12 | 5.4 | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.70 | 754.4 | ..... | ..... | 39 | 3.9 | 54 | W | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear | |
| Vicksburg, Mississippi | 29.74 | 755.4 | 30.00 | 762.0 | 54 | 12.2 | 61 | SE | 8 | 3.6 | ..... | 0 | 2s | ..... | W | 0 | 0 | Clear | |
| Virginia City, Montana | 24.06 | 611.1 | 29.54 | 750.3 | 29 | — 1.7 | 89 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Clear | |
| Visalia, California | 29.53 | 750.0 | 29.90 | 759.4 | 51 | 10.6 | 93 | Calm | 0 | 0 | ..... | 0 | 8s | ..... | Calm | 0.08 | 2.0 | Light snow | |
| Washington, D. C. | 29.58 | 751.3 | 29.70 | 754.4 | 56 | 13.2 | 57 | SW | 7 | 3.1 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Cloudy | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 48 | 8.9 | 43 | S | ..... | ..... | 2 | 5ck | 0 | ..... | ..... | 0.04 | 1.0 | Clear | |
| Wilmington, N. Carolina | 29.80 | 756.9 | 29.88 | 758.9 | 56 | 13.3 | 62 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | |
| Winnemucca, Nevada | 25.44 | 646.2 | 29.80 | 756.9 | 39 | 3.9 | 73 | Calm | 0 | 0 | ..... | 2k | 0 | SW | ..... | 0.17 | 4.3 | Clear | |
| Wood's Holl, Mass. | 29.34 | 745.2 | 29.39 | 746.5 | 46 | 7.8 | 92 | W | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 2.18 | 55.4 | Light rain | |
| Yankton, Dakota | 28.50 | 723.9 | 29.78 | 756.4 | 45 | 7.2 | 68 | NW | 12 | 5.4 | ..... | 0 | 8s | ..... | W | 0 | 0 | Cloudy | |
| Yuma, Arizona | 29.66 | 753.4 | 29.82 | 757.4 | 62 | 16.7 | 71 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 30.01 | 762.2 | 30.06 | 763.5 | 14.5 | — 9.7 | 91 | NE | 5 | 2.2 | ..... | 2cs | 0 | NE | ..... | 0 | 0 | Fair | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 29.91 | 759.7 | 29.93 | 760.2 | 81 | 27.2 | 82 | Calm | 0 | 0 | ..... | 4c | 0 | W | ..... | 0.02 | 0.5 | Fair | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.11 | 764.8 | 30.12 | 765.0 | 77 | 25.0 | 86 | Calm | 0 | 0 | ..... | 10c | 0 | Calm | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.88 | 758.9 | 29.96 | 761.0 | 82 | 27.8 | ..... | E | 7 | 3.1 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | 29.98 | 761.5 | 29.98 | 761.5 | 83 | 28.3 | 79 | E | ..... | ..... | 2 | 5k | 7ks | E | ..... | 0.020 | 0.51 | ⅛ Cloudy | C. J. Hering. |
| Batavia, Dutch Guiana, S. A. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.23 | 640.8 | ..... | ..... | 71.0 | 21.7 | 77 | Calm | ..... | ..... | 0 | 1ck | 1ks | ..... | ..... | 0 | 0 | ..... | Thomas Herrar. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 metres; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,560 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho, 1,760 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m., Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,146.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,550 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 m.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.56 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 m.; Tucson, 2.59 m.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er —10. | Clouds. Amount. Low'r —10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.86 | 758.4 | 54 | 12.2 | 53 | 11.7 | 80 | SW | 7 | 3.1 | ..... | ..... | 10 | ..... | W | 0 | 0 | ..... | ..... | Overcast..... | |
| Navy Yard, Pensacola, Fla. | 30.08 | 764.0 | 59 | 15.0 | 59 | 15.0 | 88 | N | 4 | 1.8 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | ..... | Fair ..... | |
| Navy Yard, Portsmouth, N. H | 29.50 | 749.3 | 69 | 20.6 | 42 | 5.6 | 91 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 1.2 | 30. | ..... | ..... | Drizzling..... | |
| Naval Hospital, Yokohama, Japan..... | 30.51* | 775.7* | 55 | 12.8 | 47.2 | 8.4 | 77 | N | ..... | ..... | 3 | ..... | 10s | ..... | NE | Slight | Slight | ..... | ..... | Gloomy..... | |
| Adams. Panama..... | 30.02 | 762.5 | 84 | 25.9 | 83 | 28.3 | 83 | NW | ..... | ..... | 0–1 | ..... | 2 | ..... | ..... | ..... | ..... | Smooth | ..... | Hazy..... | |
| Alliance. Villefranche, France..... | 29.85‡ | 758.2‡ | ..... | ..... | 62 | 16.7 | 72 | E | ..... | ..... | 0–1 | ..... | 9 | ..... | E | ..... | ..... | Light | S | Cloudy..... | |
| Ashuelot. Shanghai, China ..... | 30.20 | 767.1 | 58 | 14.4 | 66 | 18.9 | 94 | SE | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Cloudy..... | |
| Canonicus, New Orleans, La..... | 29.95 | 760.7 | 46 | 7.8 | 60 | 15.6 | 82 | ENE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear. ..... | |
| Colorado. New York, N. Y..... | 29.58‡ | 751.3‡ | ..... | ..... | 54 | 12.2 | 49 | WNW | 7 | 3.1 | ..... | ..... | 5 | ..... | SW | 0.67 | 17.0 | ..... | ..... | Light fog..... | |
| Constellation, N. 43° 07′ W. 41° 25′..... | 29.52‡ | 749.8‡ | ..... | ..... | 51 | 10.6 | 86 | NW | ..... | ..... | 5 | ..... | 8 | ..... | NW | ..... | ..... | Long | NW | Clearing..... | |
| Constitution, Havre, France..... | 30.07‡ | 763.8‡ | ..... | ..... | 57 | 13.9 | 81 | WSW | ..... | ..... | 1 | ..... | 1 | ..... | Calm | ..... | ..... | ..... | ..... | Clear..... | |
| Despatch, Gulf of Ismid, Turkey... | 29.72‡ | 754.9‡ | ..... | ..... | 63 | 17.2 | 89 | ENE | ..... | ..... | 3 | ..... | 5 | ..... | E | ..... | ..... | ..... | ..... | Fair ..... | |
| Enterprise, Norfolk, Va ..... | 29.79‡ | 756.7‡ | ..... | ..... | 54 | 12.2 | 74 | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | Blank | Blank | ..... | ..... | Cloudy ?..... | |
| Franklin, Norfolk, Va..... | 29.85 | 758.2 | 64 | 17.8 | 56 | 13.3 | 63 | WNW | 7.2 | 3.2 | ..... | ..... | 2 | ..... | WNW | 0.63 | 16.0 | ..... | ..... | Clear. ..... | |
| Gettysburg Valetta, Malta..... | 29.81‡ | 757.2‡ | ..... | ..... | 65 | 18.3 | ?? | NW | ..... | ..... | 3 | ..... | 2 | ..... | Calm | 0 | 0 | ..... | ..... | Clear..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.07 | 763.8 | 80 | 26.7 | 80 | 26.7 | 41 | NE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |
| Hartford, Montevideo, Uraguay .... | 29.97 | 761.2 | 67 | 19.4 | 65 | 18.3 | 68 | SSW | 8 | 3.6 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | ..... | Fair..... | |
| Marion, N. 39° 02′, E. 23° 07′..... | 29.78 | 756.4 | 66 | 18.9 | 59 | 15.0 | 82 | NNE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | Light | Light | Smooth | ..... | Fair..... | |
| Michigan, Erie, Pa..... | 29.10 | 739.1 | 61 | 16.1 | 52 | 11.1 | 54 | WSW | ..... | ..... | 2 | ..... | 2 | ..... | WSW | ..... | ..... | ..... | ..... | Fair..... | |
| Monocacy. Shanghai, China..... | 30.19‡ | 766.8‡ | ..... | ..... | 59 | 15.0 | 88 | E | ..... | ..... | 1 | ..... | 10 | ..... | SE | ..... | ..... | ..... | ..... | Overcast..... | |
| New Hampshire, Port Royal, S. C..... | 30.12† | 765.0† | ..... | ..... | 62 | 16.7 | 51 | N | 3 | 1.3 | ..... | ..... | ..... | ..... | ..... | 0.01 | 0.3 | ..... | ..... | Clear ..... | |
| Omaha, N. 24° 45′ W. 68° 36′..... | 30.10* | 764.5* | 76 | 24.4 | 75 | 23.9 | 90 | W | 2 | 0.9 | ..... | ..... | 9 | ... | W | 0 | 0 | ..... | ..... | Cloudy..... | |
| Onward, Callao, Peru..... | 30.02† | 762.5† | ..... | ..... | 70 | 21.1 | 85 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, Pensacola, Fla..... | 30.03‡ | 762.7‡ | ..... | ..... | 65 | 18.3 | 63 | NE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Palos, Shanghai, China..... | 30.26* | 768.6* | 62 | 16.7 | 56 | 13.3 | 94 | ESE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Pensacola, N. 26° 18′, W. 159° 06′..... | 30.33 | 770.4 | 70 | 21.1 | 67 | 19.4 | 95 | ENE | 25 | 11.2 | ..... | ..... | 10 | ..... | ..... | 0.10 | 2.5 | Smooth | NE | Cloudy..... | |
| Plymouth, Norfolk, Va..... | 29.77‡ | 756.1‡ | ..... | ..... | 59 | 15.0 | 65 | WSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Powhattan, Norfolk, Va..... | 29.79‡ | 756.7‡ | ..... | ..... | 59 | 15.0 | 88 | WNW | 6.0 | 2.7 | ..... | ..... | 2 | ..... | ..... | 0.42 | 10.7 | ..... | ..... | Clear ..... | |
| Ranger. Takao, Formosa ..... | 30.22* | 767.6* | ..... | ..... | 81 | 27.2 | 78 | NNW | ..... | ..... | 3 | ..... | 9 | ..... | Calm | ..... | ..... | Smooth | ..... | D. clouds..... | |
| Rio Bravo, Brownsville, Texas..... | 29.87 | 758.7 | 71 | 21.7 | 70 | 21.1 | 100 | SSE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy? ..... | |
| Santee, Annapolis, Md ..... | 29.68‡ | 753.9‡ | ..... | ..... | 59 | 15.0 | 70 | WSW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0.14 | 3.6 | ..... | ..... | Clear..... | |
| Saratoga, Washington, D. C..... | 29.61* | 752.8* | ..... | ..... | 60 | 15.6 | 82 | SSW | ..... | ..... | 1 | ..... | 1 | ..... | Calm | Mod'ate | Mod'te | ..... | ..... | Clear. ..... | |
| St. Louis, League Island, Pa ..... | 29.60 | 751.8 | 63 | 17.2 | 55 | 12.8 | 68 | WSW | 4 | 1.8 | ..... | ..... | 5 | ..... | NW | 0.49 | 12.4 | ..... | ..... | Fair ..... | |
| Supply, Havre, France..... | 30.16 | 766.1 | 54 | 12.2 | 55 | 12.8 | 80 | W | ..... | ..... | 1 | ..... | 8? | ..... | WNW | ..... | ..... | ..... | ..... | Clear..... | |
| Swatara, Aspinwall..... | 29.96 | 761.0 | 83 | 28.3 | 82 | 27.8 | 91 | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Tennessee, N. 12° 36′ E. 47° 22′..... | 29.85* | 758.2* | 84 | 28.9 | 83 | 28.3 | 83 | SE | 2 | 0.9 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Smooth | ..... | Hazy..... | |
| Trenton, Villefranche, France ..... | 29.83‡ | 757.7‡ | ..... | ..... | 60 | 15.6 | 88 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | SE | 0 | 0 | Smooth | ..... | Overcast..... | |
| Tuscarora, Acapulco, Mexico..... | 29.73 | 755.1 | 75 | 23.9 | 75 | 23.9 | 77 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |
| Vandalia, Villefranche, France..... | 29.80‡ | 756.9‡ | ..... | ..... | 60 | 15.6 | 76 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | S&E | ..... | ..... | ..... | ..... | Cloudy..... | |
| Wabash, Boston, Mass..... | 29.34‡ | 745.2‡ | ..... | ..... | 44 | 6.7 | 92 | NW | 13 | 5.8 | ..... | ..... | 10 | ..... | NW | 1.03 | 26.2 | ..... | ..... | Light rain.. | |
| Wyoming, N. 39° 47′, W. 52° 06′..... | 29.96* | 761.0* | ..... | ..... | 51 | 11.1 | 73 | NNW | ..... | ..... | 4–6 | ..... | 10 | ..... | ..... | ..... | ..... | Rough | NW | Raining..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | Force. | Clouds. | | | | Sea-swell | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Panama, N. 41° 30' W. 124° 40' | | | 30.09* | 764.3* | | | | NNW | | | 4 | | 4 | | NW | Rough | NW | Clear | Capt. Cobb. |
| S. S. City of Peking, N. 37° 11', W. 178° 06' | | | 30.25† | 768.3† | 56 | 13.5 | 87 | SE | 12.8 | 5.7 | | | 8 | | SE | Smooth | Calm | Misty | Capt. Seabury. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Tokio, N. 33° 13', E. 171° 27' | | | | | 58 | 14.4 | | NE | | | 3 | | 7 | | NE | Rough | E | D. clouds | Capt. Dearborn. |
| S. S. Colima, N. 28° 44', W. 116° 1' | | | 29.99† | 761.7† | 66 | 18.9 | 68 | WNW | | | 4 | | 10 | | NW | Smalt | WNW | D. clouds | Capt. Maury. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. W. H. Thompson. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic, N. 47° 28', W. 31° 49' | | | 29.19† | 741.4† | 58 | 14.4 | 100 | SE | | | 4 | | | | SE | Cross | Var. | D. clouds | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Aneroid.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic | | | | | | | | | | | | | | | | | | | Capt. John Metcalf. |
| S. S. Gaelic, Hong-Kong, China | | | 30.03† | 762.7† | 72 | 22.2 | 95 | ESE | | | 5 | | | | | | | D. clouds | Capt. W. H. Kidley |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Upper | Lower | Upper. | Lower. | Character | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, N. 38° 41′, W. 61° 51′ | | | 29.92* | 760.0* | 66 | 18.9 | 89 | WSW | | | 3 | | 2 | | SW | Mod'ate | NE | Clear | Captain Sargent. |
| S. S. Ohio, Philadelphia, Pa | | | 29.56 | 750.8 | 54 | 12.2 | 87 | W | | | 1 | | 0 | | | | | Clear | Captain Morrison. |
| S. S. Pennsylvania, N. 44° 16′, W. 39° 11′ | | | 29.31* | 744.5* | 52 | 11.1 | 100 | WNW | | | 1 | | 52 | | WNW | Light | N; NW | Clear? | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Corrected for temperature and elevation, instrumental error not known.

## RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland, N. 40° 32′, W. 72° 40′ | | | 29.52* | 749.8* | | | | W | 15 | 6.7 | | | 9 | | W | Slight | SE | Cloudy | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

*Aneroid; regulated to standard at Antwerp.

## ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| S. S. Scandinavian, N. 37° 12′, W. 75° 18′ | | | 29.72 | 754.9 | 51 | 10.6 | | WNW | | | 5 | | 0 | | | Light | WNW | Blue sky | Capt. W. Richardson. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

## MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Vineyard Haven, Mass | | | 29.32 | 744.7 | 45 | 7.2 | 100 | SSW | 10 | 4.5 | | | 10n | | SW | | | Light rain | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 30.06 | 763.5 | 21 | — 6.1 | 86 | Calm? | 1.2? | 0.5? | | 10cs | 0 | | | | | Clearing | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assd.) Chief Signal Officer, U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 13, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.09 | 764.2 | 66.6 | 19.2 | 83 | NE | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Dr. Ollive. |
| Nemours | ..... | ..... | 30.02 | 762.5 | 78.8 | 26.0 | 24 | NW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair. | Michel. |
| Algiers | ..... | ..... | 30.01 | 762.3 | 64.4 | 18.0 | 80 | NW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Towiliere. |
| La Calle | ..... | ..... | 30.01 | 762.2 | 63 [illegible] | 17 2 | 70 | NW | ..... | ..... | 5 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Boulangeot. |
| Tunis | ..... | ..... | 29.87 | 758.7 | 65.8 | 18.8 | 49 | NW | ..... | ..... | 8 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Jacques. |
| Sfax | ..... | ..... | 30.00 | 762.0 | 62 6 | 17.0 | ..... | NW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0.039 | 1.0 | Cloudy | Gau. |
| Saida | ..... | ..... | 30.09 | 764 2 | 75.7 | 24.3 | ..... | NNW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Herbin. |
| Tebessa | ..... | ..... | 29.95 | 760.8 | ..... | ..... | ..... | WNW | ..... | ..... | 5 | ..... | 7 | ..... | ..... | 0 | 0 | Very cloudy | Watrin. |
| Geriville | ..... | ..... | 30.16 | 766.0 | 65.5 | 18.6 | 86 | N | ..... | ..... | 5 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Lemaillot. |
| Laghouat | ..... | ..... | 30.12 | 765.1 | 78.8 | 26.0 | 8 | S | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Bertrand. |
| Biskra | ..... | ..... | 30.11 | 764.9 | 79.7 | 26.5 | 37 | NE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.47 | 748.5 | 30.02 | 762.4 | 58.5 | 14.7 | 65 | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.34 | 745.3 | 30.10 | 764.6 | 59.7 | 15.4 | 55 | NE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbiski. |
| Eperies | 29.19 | 741.3 | 30.05 | 763.3 | 61.3 | 16.3 | 43 | N | ..... | ..... | 1 | ..... | 38 | ..... | ..... | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.85 | 732.7 | 30.10 | 764.6 | 55.4 | 13.0 | 69 | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.122 | 3.10 | ..... | Andreas Rospini. |
| Hermannstadt | 28.64 | 737.4 | 30.05 | 763.3 | 55.8 | 13.2 | 52 | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.73 | 729.8 | 30.08 | 763.9 | 54.3 | 12.4 | 61 | ENE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0.039 | 1.0 | ..... | Prof. C. Wagner |
| Lemberg | 29.13 | 739.9 | 30.12 | 765.0 | 55.0 | 12.8 | 57 | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Dr. T. Stanecki. |
| Pola | 29.84 | 757.8 | 29.95 | 760.6 | 64.9 | 18.3 | 48 | ENE | ..... | ..... | 3 | ..... | 2k | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.48 | 748.8 | 29.94 | 760.4 | 64.0 | 17.8 | 40 | SE | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.77 | 756.1 | 30.05 | 763.2 | 58.6 | 14.8 | 62 | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Karl Stancel. |
| Trieste | 29.88 | 758.9 | 29.98 | 761.5 | 61.2 | 16.2 | 52 | ENE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | Fair | P. Busin. |
| Vienna | 29.39 | 746.4 | 30.10 | 764.4 | 58.8 | 14.9 | 57 | Calm | ..... | ..... | 0 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.61 | 726.7 | 30.11 | 764.8 | 56.8 | 13.8 | 43 | E | ..... | ..... | 0 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. M. Passau. |
| Brussels | 29.91 | 759.6 | 30.11 | 764.7 | 57.2 | 14.0 | 38 | SSW | ..... | ..... | 1 | 1 | ..... | NE | S | 0 | 0 | ..... | Royal Observatory. |
| Furnes | 30.10 | 764.5 | 30.12 | 765.1 | 65.7 | 18.7 | 37 | SW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | M. E. de Cae. |
| Maeseyck | 30.06 | 763.4 | 30.18 | 766.6 | 60.1 | 15.6 | 53 | ENE | ..... | ..... | 0 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

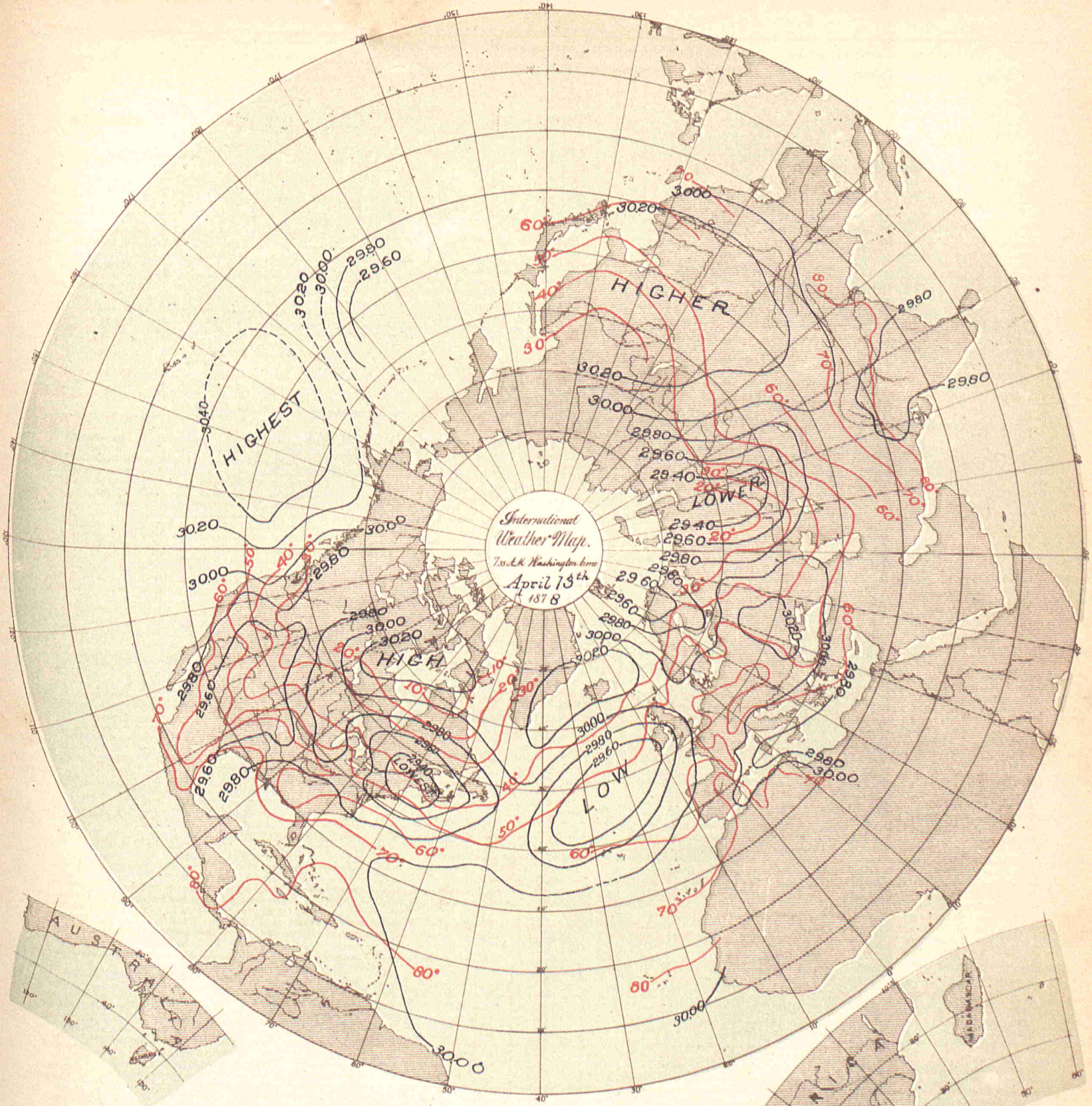
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 1—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.92 | 760.0 | 30.02 | 762.5 | 46.0 | 7.8 | ..... | SE | 14 | 6.3 | ..... | ..... | 9 | ..... | ..... | 0.075 | 1.91 | Overcast | W. Boswell. |
| Ardrossan | 29.80 | 756.9 | 29.82 | 757.4 | 50 | 10.0 | ..... | E | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | Raining | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.71 | 754.6 | 51.3 | 10.7 | ..... | SSE | 13 | 5.8 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.88 | 758.9 | 50.6 | 10.3 | ..... | SE | 25 | 11.2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 29.68 | 753.9 | 57.8 | 14.3 | ..... | SSE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | J. L. E. Dreyer. |
| Bradford, Yorkshire | 29.56 | 750.8 | 29.96 | 761.0 | 54.3 | 12.4 | ..... | SW | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.94 | 760.5 | 29.97 | 761.2 | 84.0 | 28.9 | ..... | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 30.01 | 762.2 | 63.0 | 17.2 | ..... | S | ..... | ..... | 1–2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | H. Todd. [H. C. |
| Cardington | ..... | ..... | 30.02 | 762.5 | 58.0 | 14.4 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John McLaren. |
| Chatham, School M. E. | 29.94 | 760 5 | 30.07 | 763.8 | 59.7 | 15 4 | ..... | S | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.54 | 724.9 | 30.02 | 762.5 | 51.0 | 10.6 | ..... | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Rain; fog | Alexander Watt. |
| Donaghadee | 29.74 | 755.4 | 29.77 | 756.1 | 48 | 8.9 | ..... | SSE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | J. Mac Gowan. |
| Dover | 30.06 | 763.5 | 30.09 | 764.3 | 54 | 12.2 | ..... | WSW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | ¾ clouded | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.92 | 760.0 | 53.3 | 11.8 | ..... | SE | 4.4 | 2.0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Thomas Mackereth. |
| Falmouth, Observatory | 29.66 | 753.4 | 29.89 | 759.2 | 52.1 | 11.2 | ..... | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Rain and fog | The Staff. |
| Fort Napier, (Natal) | 27.52 | 699.0 | 29.73 | 755.1 | 81.5 | 27.5 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.70 | 754.4 | 29.93 | 760.2 | 89 | 31.7 | ..... | N | ..... | ..... | 0 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's College | ..... | ..... | 29.57 | 751.1 | 54 | 12.2 | ..... | SW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.04 | 763.0 | 30.10 | 764.5 | 64.7 | 18.2 | ..... | W | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy | Corpl. Wm. Allen, A. H. C. |
| Glasgow, Observatory | 29.65 | 753.1 | 29.86 | 758.4 | 49.0 | 9.4 | ..... | ENE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | D. G. Maclean. |
| Great Yarmouth | 30.07 | 763.8 | 30.07 | 763.8 | 49 | 9.4 | ..... | SSE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Misty | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.87 | 758.7 | 30.04 | 763.0 | 60.2 | 15.7 | ..... | SSW | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | Nearly o'cast | The Staff, for G. B. Airy. |
| Guernsey | 29.77 | 756.1 | 29.99 | 761.7 | 52.5 | 11.4 | ..... | SSE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | Raining | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 29.91 | 759.7 | 53 | 11.7 | ..... | S | ..... | ..... | 4 | ..... | 10n | ..... | ..... | 0.85 | 21.6 | Raining | M. P. Moyle. |
| Holyhead | 29.76 | 755.9 | 29.82 | 757.4 | 51 | 10.6 | ..... | S | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Misty | John Tilston. |
| Jersey | 29.75 | 755 6 | 30.05 | 763.3 | 54.0 | 12.2 | ..... | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | J. Fisher. |
| Kew, Observatory | ..... | ..... | 30.04 | 763.0 | 58.9 | 14.9 | ..... | S | 26 | 11.6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Hazy | The Staff. |
| Kingstown | 29.70 | 754.4 | 29.73 | 755.1 | 52 | 11.1 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.99 | 761.7 | 54.2 | 12.3 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.77 | 756.1 | 29.85 | 758.2 | 61.6 | 16.4 | ..... | SW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast | Sgt. Fred. Travis, A. H. |
| Nairn | 29.83 | 757.7 | 29.92 | 760.0 | 54 | 12.2 | ..... | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 29.95 | 760.7 | 77.0 | 25.0 | ..... | NE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.82 | 757.4 | 30.01 | 762.2 | 56.6 | 13.7 | ..... | SSE | ..... | ..... | 2 | ..... | 10d | ..... | SSE | 0.084 | 2.13 | Raining | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.44 | 747.8 | 29.97 | 761.2 | 50.5 | 10.3 | ..... | SE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.01 | 762.2 | 53 | 11.7 | ..... | SSE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Mr. Lucas. |
| Plymouth | 29.85 | 758.2 | 29.93 | 760.2 | 49.0 | 9.4 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | John Merrifield. |
| Roche's Point | 29.64 | 752.8 | 29.69 | 754.1 | 52 | 11.1 | ..... | SSW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | ..... | Foggy | W. Kennedy. |
| Saint Ann's Head | 29.67 | 753.6 | 29.83 | 757.7 | 49 | 9.4 | ..... | S | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy | John C. Walker. |
| Sandwick Manse, (Orkneys | ..... | ..... | 30.04 | 763.0 | 49.1 | 9.5 | ..... | ESE | 24 | 10.7 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 29.97 | 761.2 | 50.0 | 10.0 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | Sergt. W. H. Lyne. |
| Sheffield | 29.72 | 754.9 | 30.00 | 762.0 | 58.4 | 14.7 | ..... | SSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.07 | 1.8 | Raining | W. F. Cooper. |
| Silloth Rectory | 29.84 | 757.9 | 29.87 | 758.7 | 52.9 | 11.6 | 81 | SE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.240 | 6.10 | Overcast | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.52 | 749.8 | 29.93 | 760.2 | 53.8 | 12.1 | ..... | SE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 29.82 | 757.4 | 50 | 10.0 | ..... | E | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Sutherland. |
| Strathfield Turgiss | 29.81 | 757.2 | 30.03 | 762.7 | 53.0 | 11.7 | ..... | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Rev. C. H. Griffith, F.M |
| Thurso | ..... | ..... | 29.99 | 761.7 | 51 | 10.6 | ..... | ESE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | Misty | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 29.92 | 760.0 | 56 | 13.3 | ..... | S | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 29.62 | 752.3 | 56.5 | 13.6 | ..... | S | 38 | 17.0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.00 | 762.0 | 67.0 | 19.4 | 83 | NW | ..... | ..... | 1 | ..... | 4k | ..... | ..... | ..... | ..... | Fine; clear. | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.71 | 754.6 | 29.90 | 759.3 | 78.4 | 25.8 | 56 | SSE | 20.0 | 8.9 | ..... | 2 | 1 | ..... | ..... | 0 | 0 | Squally | C. Meldrum. |
| Melbourne, Observatory | 30.12 | 765.0 | 30.21 | 767.3 | 58.1 | 14.5 | 75 | ESE | 3 | 1.3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Fine | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m.

| Marine Series. Vessels. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Algeria | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. C. Prehn. |
| S. S. Naid, N. 39° 35′ W. 70° 55′ | ..... | ..... | 29.58 | 751.3 | 49 | 9.4 | ..... | W | ..... | ..... | 6 | ..... | 3 | ..... | ..... | 2 | WSW | D. clouds | [R. |
| S. S. Peruvian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire, Mersey River | ..... | ..... | 29.89 | 759.2 | 45 | 7.2 | ..... | SE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Capt. H. Longley. |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.21 | 665.7 | | | 70.2 | 21.2 | 92 | NE | | | 1 | | 10s;hz | | | 0.7 | 18. | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.10 | 764.5 | 30.15 | 765.7 | 55.4 | 13.0 | 63 | WSW | | | 2 | | 0 | | | | | | |
| Fanöe | 30.11 | 764.9 | 30.13 | 765.4 | 57.4 | 14.1 | 61 | SW | | | 2 | | 5 | | | | | | |
| Godthaab, (Greenland) | 30.12 | 765.0 | 30.16 | 766.1 | 35.6 | 2.0 | 91 | S | | | 6 | | 10 | | | | | | |
| Stykkisholm, (Iceland) | 30.13 | 765.4 | 30.18 | 766.5 | 35.1 | 1.7 | 90 | Calm | | | 0 | | 0 | | | | | | Raining |
| Thorshavn, (Faröe) | 30.13 | 765.3 | 30.17 | 766.2 | 44.8 | 7.1 | 86 | NE | | | 2 | | 10 | | | | | | |
| Vestervig | 29.95 | 760.6 | 30.11 | 764.9 | 55.0 | 12.8 | 64 | Calm | | | 0 | | 4 | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.63 | 752.6 | 30.18 | 766.6 | 55.4 | 13 | 68 | SW | | | 1 | | 8 | | SW | 0 | 0 | Very cloudy | Collignon, Director. |
| Amiens, Normal School | | | | | | | | | | | | | | | | | | | Bouvarne, Director. |
| Avignon, Normal School | 29.91 | 759.7 | 29.99 | 761.7 | 67.5 | 19.7 | 32 | NNW | | | 3 | | 0 | | | 0 | 0 | Very clear | Mr. Giraud, Director |
| Bar-sur-Seine | 29.56 | 750.9 | 30.12 | 765.0 | 59.2 | 15.1 | 54 | E | | | 2 | | 10 | | | 0 | 0 | Clear | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Oheux. |
| Beauvais | | | | | | | | | | | | | | | | | | | |
| Besançon | 29.17 | 740.9 | 30.05 | 763.2 | 58.5 | 14.7 | 45 | SSE | | | 2 | | 5 | | | 0 | 0 | Cloudy | Normal School. |
| Bourg-en-Bresse | 29.20 | 741.7 | 30.12 | 765.1 | 59.4 | 15.2 | 58 | W | | | 2 | | 0 | | | 0 | 0 | Clear | Normal School. |
| Bourges, Normal School | 29.52 | 749.8 | 30.07 | 763.8 | 55.4 | 13 | 62 | SE | | | 4 | | 0 | | | 0 | 0 | Clear | Normal School. |
| Brest, Naval Observatory | 29.72 | 754.8 | 29.94 | 760.4 | 51.3 | 10.7 | 89 | SW | | | 2 | | 2 | | NE | 0.051 | 1.3 | Slightly cl'dy | A. Wagner, Director. |
| Carcassonne, Normal School | 29.59 | 751.5 | 29.99 | 761.7 | 68.0 | 20 | 32 | W | | | 3 | | 10 | | SW | 0.197 | 5.00 | Raining | The Staff. |
| Caen | 29.98 | 761.6 | 30.06 | 763.4 | 60.8 | 16 | 50 | SE | | | 1 | | 0 | | | 0 | 0 | Clear | Vateau, Director. |
| Chartres, Normal School | 29.50 | 749.3 | 30.07 | 763.6 | 59.4 | 15.2 | 83 | NE | | | 1 | | 10 | | | 0 | 0 | Covered | Normal School. |
| Châlons-sur-Marne, N. Sch'l | 29.78 | 756.5 | 30.10 | 764.5 | 63.7 | 17.6 | 39 | SSE | | | 1 | | 5 | | E | 0 | 0 | | Lequin, Director. |
| Clermont-Fd., Puy de D. Obs | 28.69 | 728.7 | 30.04 | 762.9 | 58.5 | 14.7 | 53 | E | | | 2 | | 2k | | S | 0 | 0 | Slightly cl'dy | T. Leloup, Director. |
| Commercy, Normal School | 29.19 | 741.4 | 30.08 | 764.0 | 61.1 | 16.6 | 72 | ENE | | | 1 | | 0 | | | 0.012 | 0.3 | Clear | Alluard, Director. |
| Commune de Gréasque* | 28.92 | 734.6 | 30.07 | 763.6 | 62.8 | 17.1 | 40 | W | | | 2 | | 5 | | ENE | 0 | 0 | Cloudy | Dr. Goulet, Director. |
| Grenoble | | | | | | | | | | | 2 | | 2 | | W | 0 | 0 | ¼ covered | M. Kina. |
| La Roche-sur-Yon, N. School | 29.83 | 757.6 | 30.04 | 763.0 | 58.6 | 14.8 | 68 | SE | | | | | | | | | | | Normal School. |
| Le Mans, Normal School | 29.77 | 756.2 | 30.08 | 764.0 | 60.6 | 15.9 | 53 | S | | | 2 | | 10 | | | 0 | 0 | Covered | Mouillot, Director. |
| Lons-Le-Saulnier, N.School | 29.10 | 739.0 | 30.00 | 762.1 | 58.3 | 14.6 | 45 | NW | | | 1 | | 2 | | S | 0 | 0 | Slightly cl'dy | Poirrier, Director. |
| Lorient, Naval Observatory | 29.05 | 760.7 | 30.05 | 763.3 | 55.4 | 13.0 | 81 | SE | | | 6 | | 0 | | | 0 | 0 | Clear | Voudez, Director. |
| Mâcon, Normal School | 29.36 | 745.8 | 30.02 | 762.4 | 53.6 | 12 | 57 | Calm | | | 3 | | 8 | | SE | 0.039 | 1.0 | ¾ covered | T. Carré, Director. |
| Metz | | | | | | | | | | | 0 | | 0 | | | 0.102 | 2.6 | Clear | M. Marchal, Director. |
| Mirecourt | 29.00 | 736.6 | 30.04 | 763.0 | 59.0 | 15 | 39 | E | | | 2 | | 1 | | W | 0 | 0 | Clear | M. A. Schuster, Dir. |
| Nismes, Normal School | 29.80 | 756.8 | 29.99 | 761.8 | 68.4 | 20.2 | 39 | SW | | | 1 | | 0 | | | 0 | 0 | Clear | Normal School. |
| Orleans, Normal School | 29.74 | 755.3 | 30.10 | 764.6 | 75.2 | 24 | 42 | E | | | 2 | | 0 | | | 0 | 0 | Clear | Boyer, Director. |
| Paris, Observatory | 29.86 | 758.4 | 30.10 | 764.6 | 59.4 | 15.2 | 45 | S | | | 1 | | 3 | | | 0 | 0 | Clear | Bernard, Director. |
| Privas | 28.97 | 735.8 | 30.03 | 762.7 | 59.0 | 15 | 38 | NE | | | 2 | | 1 | | NE | 0 | 0 | Slightly cl'dy | National Observatory. |
| Puy de Dome (Summit) | | | | | | | | | | | | | | | | | | Clear | Normal School |
| Rochefort, Naval Obs'y | 30.01 | 762.3 | 30.04 | 763.1 | 64.0 | 17.8 | 32 | W | | | 3 | | 5 | | W | 0 | 0 | | Alluard, Director. |
| Rouen, Normal School | 30.01 | 762.2 | 30.10 | 764.4 | 63.1 | 17.8 | 40 | SSE | | | 2 | | 0 | | | 0 | 0 | ½ Covered | Lt. Decante, Director. |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | Clear | F. Lucard, Director. |
| Tarbes, Normal School | 29.07 | 738.4 | 30.13 | 765.4 | 64.4 | 18 | 62 | SE | | | 2 | | 0 | | | 0 | 0 | Clear | M. H. Hercouet. |
| Villefranche | 29.34 | 745.3 | 30.05 | 763.3 | 59.2 | 15.1 | 63 | N | | | 1 | | 2 | | N | 0.532 | 13.5 | Slightly cl'dy | T. Hugues, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | Vilot, Director |
| Fort de France, Martinique | 29.79 | 756.6 | 29.82 | 757.3 | 80.6 | 27 | | | | | | | | | | | | | |
| Lyons | | | 30.12 | 765.0 | 57.6 | 14.2 | | | | | | | | | | 0 | 0 | | L'Abbé Marchési. |
| Marseilles, Observatory | | | 29.98 | 761.4 | 61.5 | 16.4 | 50 | W | | | 1-2 | | 0 | | | 0 | 0 | Very clear | M. Jeys. |
| Mont-Louis | 24.83 | 630.6 | 30.14 | 765.6 | 50.4 | 10.2 | 16 | SSE | 9.3 | 4.17 | | | 0 | | | 0 | 0 | Clear | The Staff. |
| Nice | | | 29.97 | 761.3 | 62.2 | 16.8 | 75 | W | | | 1 | | 3 | | NW | 0 | 0 | | Mr. Falguère. |
| Paris, Montsouris Obs'y | 29.82 | 757.4 | 30.10 | 764.1 | 61.0 | 17.8 | 44 | SE | | | 3 | | 0 | | | 0 | 0 | Clear | Dr. A. Niepce. |
| Perpignan | | | 30.04 | 763.0 | 63.1 | 17.3 | 26 | SE | 11.2 | 5.0 | | | 2 | | NNW | 0 | 0 | | Marié Davy, Director |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | 0 | | | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Plantade,) H. P. | 22.49 | 571.2 | | | 46.0 | 7.8 | | N | | | | | | | | | | | M. Baylac. |
| Saint Maur, (near Paris) | 29.94 | 760.5 | 30.11 | 764.7 | 63.1 | 17.3 | 41 | SSE | | | 2 | | 3 | | | 0 | 0 | Clear | Gen'l de Nansouty |
| Toulouse, Observatory | 29.36 | 745.5 | 30.08 | 763.9 | 59.5 | 15.3 | 51 | N | | | 1 | | 0 | | | 0 | 0 | | E. Renou. |
| Tours | 29.87 | 758.7 | 30.07 | 763.7 | 62.6 | 17.0 | 43 | SE | | | 1 | | 1 | | | 0 | 0 | | The Staff. |
| Versailles, (near Paris) | | | 30.10 | 764.6 | 61.9 | 16.6 | 40 | S | | | 2 | | 4 | | N | 0 | 0 | | C. Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.18 | 766.6 | 30.21 | 767.2 | 53.8 | 12.1 | 95 | E | 8.7 | 3.9 | | | 3 | | | 0 | 0 | Light clouds | Dr. A. Bérigny. |
| | | | | | | | | | | | | | 10n | | | 0.142 | 3.6 | Covered | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,656.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 29.98 | 761.4 | 30.15 | 765.7 | 64.6 | 18.1 | 38 | SE | | | 1 | | 4 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.61 | 752.1 | 30.14 | 765.6 | 61.9 | 16.6 | 43 | ENE | | | 1 | | 2 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.67 | 753.5 | 30.09 | 764.3 | 59.0 | 15.0 | 56 | NE | | | 1 | | 0 | | | 0 | 0 | | Albert Senz. |
| Cassel | 29.63 | 752.7 | 30.24 | 768.2 | 61.9 | 16.6 | 70 | E | | | 2 | | 5 | NE | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.96 | 760.9 | 30.12 | 765.0 | 63.5 | 17.5 | 44 | E | | | 2 | | 1k | | | 0 | 0 | | Director Lose. |
| Emden | 30.19 | 766.8 | 30.23 | 767.7 | 63.1 | 17.3 | 59 | SE | | | 1 | | 2 | | | 0 | 0 | | Prof. Prestel. |
| Frankfort on the Main | 29.79 | 756.7 | 30.15 | 765.9 | 60.8 | 16 | 42 | E | | | 1 | | 3 | | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 28.65 | 727.8 | 30.10 | 764.4 | 54.0 | 12.2 | 57 | NE | | | 6 | | 7 | ENE | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 30.09 | 764.3 | 30.16 | 766.1 | 62.8 | 17.1 | 55 | ESE | | | 1 | | 8k | | | 0 | 0 | Fine | Captain F. Hegemann. |
| Kiel | 30.14 | 765.5 | 30.15 | 765.9 | 58.1 | 14.5 | 57 | NE | | | 2 | | 2 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 30.06 | 763.4 | 30.14 | 765.5 | 54.9 | 15.5 | 52 | SW | | | 2 | | 2 | | | 0 | 0 | | Prof. E. Luther. |
| Köslin | | | 30.15 | 765.7 | 57.9 | 14.4 | | NE | | | 2 | | 0 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.73 | 755.2 | 30.15 | 765.9 | 60.4 | 15.8 | 64 | ENE | | | 1 | | 4 | E | | 0.679 | 2.0 | | Prof. Bruhns. |
| Memel, Naval School | 30.11 | 764.8 | 30.16 | 766.0 | 48.6 | 8.9 | 78 | WNW | | | 1 | | 0 | | | | | | Reinbrecht von Skalweit. |
| Neufahrwasser | 30.14 | 765.5 | 30.15 | 765.9 | 55.9 | 13.3 | 61 | ENE | | | 1 | | 1 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.89 | 759.3 | 30.19 | 766.7 | 59.2 | 15.1 | 65 | E | | | 2 | | 2 | | | 0 | 0 | | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.56 | 750.8 | 30.10 | 764.6 | 60.3 | 15.7 | 51 | NE | | | 2 | | 3 | NNE | | 0 | 0 | | Dr. Schur. |
| Stuttgart | 29.13 | 740.0 | 30.07 | 763.8 | 57.2 | 14.0 | 57 | E | | | 1 | | 4 | E | | 0 | 0 | Foggy | Prof. Schoder. |
| Treves, (Trier) | 29.48 | 748.9 | 30.01 | 762.2 | 60.8 | 16.0 | 35 | E | | | 3 | | 4 | | | 0 | 0 | Foggy | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.61 | 726.6 | 30.19 | 764.6 | 54.3 | 12.4 | 63 | NNW | 2 | 1 | | | 9ck | | ESE | 0.016 | 0.4 | | Dr. Von Bebber. |
| Wustrow, Naval School | 30.21 | 767.3 | 30.25 | 768.3 | 45.3 | 7.4 | 85 | NE | | | 2 | | 0 | | | 0 | 0 | | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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NOTE.—The elevation of Friedrichshafen is 413.2 meters, or 1,355.9 feet; Weissenburg, 481 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.51 | 749.6 | 29.90 | 759.5 | 64.9 | 18.3 | | NE | | | 2.0 | | | | | | | ½ clear | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.80 | 757.0 | 29.86 | 758.3 | 80.1 | 26.7 | 37 | WSW | 41? | 18.3? | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.35 | 745.5 | 29.82 | 757.5 | 86.7 | 30.4 | 19 | SW | | | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.84 | 757.8 | 29.88 | 758.8 | 82.6 | 28.1 | 58 | NW | 19 | 8.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.77 | 705.4 | 29.74 | 755.4 | 86.0 | 30.0 | 44 | WNW | | | | | 8 | W | E | 0 | 0 | Dust-whirl | |
| Lahore | 29.08 | 738.8 | 29.85 | 758.1 | 66.4 | 19.1 | 69 | NE | 6.2 | 2.8 | | | 10 | | S | Inap. | Inap. | Cloudy | |
| Belgaum | 27.28 | 693.0 | 29.78 | 756.5 | 83.4 | 28.6 | 50 | W | 8 | 3.6 | | | 5 | SW; W | | 0 | 0 | D. clouds | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.84 | 732.6 | 29.75 | 755.6 | 74.8 | 23.8 | 48 | E | 8 | 3.6 | | | 10 | | | 1.00 | 25.4 | | |
| Agra | 29.16 | 740.6 | 29.72 | 754.9 | 81.7 | 27.6 | 65 | NE | | | | | | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.75 | 730.3 | 29.77 | 756.2 | 90 | 32.2 | 46 | E | 5.4 | 2.4 | | | 2 | | | 0 | 0 | Blue sky | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.41 | 747.8 | 29.81 | 757.2 | 80.2 | 26.8 | 66 | W | 5.5 | 2.5 | | | 2 | | W | 0 | 0 | D. clouds | |
| Allahabad | 29.50 | 749.3 | 29.81 | 757.3 | 78.7 | 25.9 | 84 | Calm | 3.6 | 1.6 | | | 6 | | SW | 0.25 | 6.3 | D. clouds | |
| Patna | 29.72 | 754.9 | 29.90 | 759.6 | 77.7 | 25.4 | 78 | E | 2.2 | 1.0 | | | 10 | E | E | 0.29 | 7.4 | Overcast | |
| Hazaribagh | 27.87 | 707.8 | 29.92 | 759.8 | 69.8 | 21.0 | 88 | ESE | 9.3 | 4.2 | | | 10 | | S | 0.24 | 6.1 | Thunder-storm | |
| Cuttack | 29.81 | 757.1 | 29.89 | 759.1 | 87.2 | 30.7 | 57 | S | 6.8 | 3.0 | | | 5 | | | 0 | 0 | D. clouds | |
| Calcutta (Alipore) | 29.90 | 759.5 | 29.92 | 760.1 | 78.5 | 25.8 | 89 | NNE | 4 | 1.8 | | | 10 | | SW | 0.08 | 2.0 | Overcast | |
| Goalpara | 29.49 | 749.0 | 29.88 | 759.0 | 78.8 | 26.0 | 77 | Calm | 5.1 | 2.3 | | | 9 | W | | 0.49 | 12.4 | D. clouds | |
| Chittagong | 29.84 | 757.8 | 29.93 | 760.2 | 82.9 | 28.3 | 83 | W | 5.5 | 2.5 | | | | | | 0 | 0 | Misty | |
| Sibsagar | 29.58 | 751.3 | 29.92 | 759.8 | 80.1 | 26.7 | 73 | WSW | 1.4 | 0.6 | | | 7 | W | W | 0 | 0 | D. clouds | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.35 | 720.2 | 29.69 | 754.2 | 88.5 | 31.4 | 32 | NW | 4.6 | 2.1 | | | 1 | NE | | 0.04 | 1.0 | D. clouds | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.611 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,932.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0-10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.54 | 750.4 | 29.95 | 760.7 | 65.8 | 18.8 | 36 | E | 5.6 | 2.5 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 29.86 | 758.4 | 29.97 | 761.1 | 62.8 | 17.1 | 48 | NE | 9.8 | 4.4 | ..... | ..... | 4 | E | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.77 | 756.2 | 29.96 | 761.0 | 64.0 | 17.8 | 37 | N | 6.9 | 3.1 | ..... | ..... | 3 | E | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.68 | 728.4 | 29.98 | 761.4 | 61.5 | 16.4 | 47 | SW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0.118 | 3.0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.49 | 749.0 | 30.01 | 762.2 | 63.9 | 17.7 | ..... | SW | ..... | ..... | ..... | ..... | 3 | SE | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.11 | 739.5 | 30.02 | 762.4 | 62.2 | 16.8 | 48 | NNW | 1.3 | 0.6 | ..... | ..... | 7 | SE | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 28.12 | 714.2 | 30.02 | 762.4 | 54.1 | 12.3 | 51 | NW | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0.724 | 18.4 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.74 | 755.5 | 29.97 | 761.1 | 63.9 | 17.7 | 30 | NNE | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0.012 | 0.3 | ..... | Prof. L. Vassallo. |
| Genoa | 29.79 | 756.7 | 29.96 | 761.0 | 64.8 | 18.2 | 32 | N | 5.6 | 2.5 | ..... | ..... | 1 | NE | ..... | 0.055 | 1.4 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.71 | 754.6 | 30.02 | 762.6 | 63.7 | 17.6 | 45 | NE | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.65 | 753.2 | 29.91 | 759.7 | 65.3 | 18.5 | 46 | N | ..... | ..... | 6 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 29.82 | 757.3 | 29.90 | 759.4 | 64.4 | 18.0 | 34 | NE | 12.5 | 5.6 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 29.84 | 757.8 | 29.88 | 759.0 | 55.2 | 12.9 | 60 | NW | 15.4 | 6.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.40 | 721.4 | 29.95 | 760 8 | 54.5 | 12.5 | 59 | NE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.74 | 755.5 | 29.85 | 758.3 | 68.4 | 20.2 | 34 | NNE | ..... | ..... | 4 | ..... | 5 | SE | ..... | 0.091 | 2.3 | ..... | Avv. P. Ponticelli. |
| Rome | 29.67 | 753.6 | 29.84 | 758.0 | 66.0 | 18.9 | 45 | SW | 5.6 | 2.5 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U | 29.65 | 753.1 | 29.85 | 758 2 | 69.1 | 20.6 | 41 | SW | ..... | ..... | 4 | ..... | 8 | E | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 59.7 | 15.4 | 77 | NE | 6.3 | 2.8 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.57 | 751.0 | 29.76 | 755.8 | 65.5 | 18.6 | 42 | NW | ..... | ..... | 4 | ..... | 7 | N | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 28.99 | 736.3 | 29.87 | 758.7 | 60.4 | 15.8 | 71 | NW | 2.5 | 1.1 | ..... | ..... | 10 | ..... | ..... | 0.059 | 1.5 | ..... | Prof. F. D. Conti. |
| Palermo | 29.52 | 749.8 | 29.77 | 756.2 | 55.0 | 12.8 | 76 | WSW | 7.4 | 3.3 | ..... | ..... | 10 | ..... | ..... | 0.138 | 3.5 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.69 | 754.1 | 29.76 | 756.0 | 63.7 | 17.6 | 70 | E | ..... | ..... | 4 | ..... | 8 | W | ..... | 0.035 | 0.9 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.30 | 744.3 | 29.86 | 758.4 | 66.0 | 18.9 | 45 | SW | 0 | 0 | ..... | ..... | 5 | W | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nagasaki | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Tokei (Yeddo) | 30.17 | 766.3 | 30.24 | 768.1 | 51.9 | 11.1 | 98 | ENE | 1.8 | 0.8 | ..... | ..... | 10n | ..... | ..... | 0.175 | 4.45 | Raining | The Observatory. |
| Tokei (Yeddo) University | 30.12 | 765.0 | 30.22 | 765.07 | 52.5 | 11.4 | 96 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0.12 | 3.0 | Wet | Prof. P. V. Veeder. |

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 64.4 | 18.0 | 43 | W | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | L. Castillo, A. E. |
| Guadalajara | 24.96 | 634.1 | 30.01 | 762.1 | 46.4 | 8.0 | 66 | SW | 0.9 | 0.4 | ..... | 0 | 1 | ..... | SW | 0 | 0 | Clear | Prof. L. Perez. |
| Guanajuato | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 56.3 | 13.5 | 30 | NW | 6.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Blue sky | Prof. M. Leal. |
| Mexico | 22.98 | 583.7 | 29.36 | 745.9 | 59.0 | 15.0 | 40 | S | 8.5 | 4.0 | ..... | 3c | 0 | ..... | ..... | 0 | 0 | Windy | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 51.6 | 10.9 | 64 | Calm | 0 | 0 | ..... | 1c | 0 | ..... | ..... | 0 | 0 | Clear | M. V. de Leon, M. E. |
| Puebla | 23.28 | 591.2 | 29.97 | 761.3 | 51.4 | 10.8 | 54 | E | 4.6 | 1.8 | ..... | 0 | 2s | ..... | ..... | 0 | 0 | Clear | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. F. R. Bayly. |
| San Luis Potosi | 29.71 | 754.5 | 29.72 | 754.8 | 75.2 | 24.0 | 86 | S | 5.1 | 2.3 | ..... | 3cs | 0 | ..... | ..... | 0 | 0 | Clear | G. Barroeta, M. D. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | 29.74 | 755.4 | 29.77 | 756.8 | 79.2 | 26.2 | 84 | Calm | 0 | 0 | ..... | 2c | 5sk | ..... | SW | Inap. | Inap. | Cloudy | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.27 | 591.2 | 30.05 | 763.4 | 52.0 | 11.1 | 50 | S | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | P. Spina. [M. M. D. D |
| Morelia | 23.94 | 608.0 | ..... | ..... | 50.0 | 10.0 | 60 | S | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | M. Tena, F. L. Param. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | 38 | S | 0.9 | 0.4 | ..... | 0 | 1 | ..... | NW | 0 | 0 | Clear | M. V. de Leon, C. E. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Groningen | 30.13 | 765.2 | 30.13 | 765.2 | 59.4 | 15.2 | ..... | SSE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... |
| Helder | 30.07 | 763.8 | 30.13 | 765.2 | 59.4 | 15.2 | ..... | ESE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... |
| Hellevoetsluis | 30.11 | 764.9 | 30.11 | 764.9 | 55 4 | 13.0 | ..... | E | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... |
| Utrecht | 30.12 | 765.0 | 30.12 | 765.0 | 68.4 | 20.2 | 54 | S | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | 30.09 | 764.2 | 30.13 | 765.4 | 63.3 | 17.4 | 46 | SSE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Light cloudy | H. v d Brink. |

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.87 | 758.8 | 29.93 | 760.2 | 53.6 | 12.0 | 47 | NW | 0.9 | 0.4 | ..... | ..... | 1 | ..... | ..... | 0.504 | 12.8 | ..... | |
| Bröno | 29.95 | 760.6 | 29.98 | 761.6 | 37.4 | 3.0 | 73 | W | 18 | 8 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Light rain | |
| Christiania | 29.93 | 760.1 | 30.07 | 763.8 | 55.4 | 13.0 | 49 | SSW | 7 | 3 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.47 | 748.6 | 29.52 | 749.7 | 36.3 | 2.4 | 75 | SW | 4 | 2 | ..... | ..... | 9 | ..... | ..... | 1.024 | 26.0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.65 | 753.1 | 29.84 | 758.0 | 60.1 | 15.6 | 85 | W | 10.5 | 4.7 | ..... | ..... | 3 | ..... | ..... | 0.472 | 12.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.02 | 737.2 | 30.04 | 763.1 | 63.5 | 17.5 | 76 | WSW | 6.3 | 2.8 | ..... | ..... | 10 | WSW | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos |
| Funchal, (Madeira) | 30.01 | 762.2 | 30.10 | 764.4 | 67.6 | 19.8 | 88 | SW | 1.8 | 0.8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.71 | 754.6 | 30.07 | 763.7 | 60.1 | 15.6 | 92 | SE | 3.8 | 1.7 | ..... | ..... | 10 | ..... | ..... | 0.004 | 0.1 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 29.85 | 758.1 | 29.92 | 759.9 | 65.1 | 18.4 | 80 | WSW | 11.2 | 5.0 | ..... | ..... | 4 | ..... | ..... | 0.024 | 0.6 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.75 | 755.7 | 29.76 | 755.9 | 82.4 | 28.0 | ..... | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 1 | ..... | Overcast | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Rio Douro, S. 25° 58′, E. 32° 37′ | ..... | ..... | 29.90 | 759.4 | 85.1 | 29.5 | ..... | NE | ..... | ..... | 4 | ..... | 2 | ..... | NNE | 3 | NNE | D. clouds | J. T. d'Oliveria, Com'd't. |
| Sado, Porto Praya, Cape Verde Islands | 30.02* | 762.5* | 30.03* | 762.8* | 85.6 | 29.8 | ..... | NNE | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 2 | NNE | Blue sky | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.72 | 754.9 | 29.72 | 755.0 | ..... | ..... | ..... | W | ..... | ..... | 2 | ..... | 4 | ..... | W | 1 | ..... | Blue sky | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreina, dos Amas, Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.71 | 754.6 | 30.13 | 765.3 | 59.4 | 15.2 | 53 | SSW | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.72 | 755 0 | 30.15 | 765.7 | 56.3 | 13.6 | 34 | SW | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 29.78 | 756.5 | 30.03 | 762.8 | 51.1 | 10.6 | 44 | WSW | 11 | 5 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.92 | 759.9 | 29.93 | 760.3 | 42.4 | 5.8 | 70 | NW | 20 | 9 | ..... | ..... | 3c;cs | ..... | ..... | ..... | ..... | Light clouds | Central Physical Obs. |
| Kuopio | 29.41 | 746.9 | 29.73 | 755.1 | 45.5 | 7.5 | 76 | S | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ch. Forsten. |
| Kieff | 29.59 | 751.5 | 30.24 | 768.1 | 45.3 | 7.4 | 48 | SE | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 30.18 | 766.5 | 30.25 | 768.3 | 49.6 | 9.8 | 40 | NE | 18 | 8 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.11 | 764.7 | 30.13 | 765.2 | 45.7 | 7.6 | 59 | ENE | 11 | 5 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | Light clouds | Lagorio. |
| Moscow | 29.51 | 749.6 | 30.07 | 763.8 | 46.0 | 7.8 | 40 | NNE | 9 | 4 | ..... | ..... | 3ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.93 | 760.3 | 30.14 | 765.6 | 44.8 | 7.1 | 35 | ENE | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.83 | 757.6 | 29.85 | 758.1 | 29.1 | — 1.6 | 84 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light clouds | Ogorodnikof. |
| Tiflis | 28.56 | 725.5 | 29.99 | 761.7 | 52.5 | 11.4 | 91 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Physical Observatory |
| Astrakhan | 30.26 | 768.5 | 30.17 | 766.4 | 41.0 | 5.0 | 35 | N | 7 | 3 | ..... | ..... | 2k | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Krotkowo* | 29.35 | 745.6 | 29.84 | 758.0 | 33.1 | 0.6 | 50 | WNW | 22 | 10 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.47 | 748.4 | 29.74 | 755.5 | 31.8 | — 0.1 | 63 | W | 9 | 4 | ..... | ..... | 10k | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.36 | 720.3 | 29.35 | 745.4 | 18.9 | — 7.3 | 39 | N | 22 | 10 | ..... | ..... | 7ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.65 | 753.0 | 29.89 | 759.1 | 41.7 | 5.4 | 60 | NNW | 18 | 8 | ..... | ..... | 10k | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.30 | 718.8 | 29.97 | 761.1 | 66.0 | 18.9 | 41 | Calm | 0 | 0 | ..... | ..... | 6k | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.32 | 744.7 | 29.84 | 757.9 | 53.1 | 11.7 | 32 | S | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.60 | 751.9 | 29.93 | 760.2 | 45.5 | 7.5 | 66 | SW | 16 | 7 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 30.14 | 765.6 | 30.28 | 769.2 | 52.7 | 11.5 | 88 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 28.19 | 716.0 | 30.39 | 771.9 | 20.5 | — 6.4 | 40 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 30.11 | 764.9 | 30.21 | 767.4 | 39.0 | 3.9 | 59 | W | 4 | 2 | ..... | ..... | 3c | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 31.1 | — 0.5 | 50 | W | 13 | 6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.91 | 759.8 | 30.02 | 762.5 | 57.9 | 14.4 | 60 | E | 4.5 | 2.00 | ..... | 3 | 3 | NW | ..... | 0 | 0 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.96 | 761.0 | 30.02 | 762 4 | 71.6 | 22.0 | 68 | NW | 1.9 | 0.87 | ..... | ..... | 8 | ..... | ..... | 0.008 | 0.2 | Almost cov. | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.06 | 687.4 | ..... | ..... | 69.8 | 21.0 | 72 | W | 2.4 | 1.07 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.78 | 705.6 | 29.93 | 760.2 | 74.1 | 23.4 | 48 | SW | 3.0 | 1.33 | ..... | 0 | 10 | ..... | ..... | Inap. | Inap. | Covered | The Staff. |
| Murcia, Met. Obs'y | 29.77 | 756.2 | 29.92 | 759.9 | 81.9 | 27.7 | 49 | ENE | 3.6 | 1.61 | ..... | 2 | 6 | WSW | ..... | 0 | 0 | Cloudy | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.09 | 738.8 | 29.97 | 761.3 | 61.7 | 16 5 | 86 | SW | 7.4 | 3.33 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Cloudy | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.85 | 758.1 | 29.91 | 760.0 | 75.9 | 24.4 | 79 | SSE | 6.5 | 2.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 29.93 | 760.2 | 30.03 | 762.7 | 66.2 | 19.0 | 79 | W | 8.0 | 3.6 | ..... | 4 | 6 | W | W | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.87 | 758.8 | 29.97 | 761.1 | 79.2 | 26.2 | 83 | SE | 0 | 0 | ..... | 2cs | 0 | E | ..... | 0 | 0 | Clear | Leonardo de Tejeda, Chief of Engineers. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATION. | Barometer. Corrected for instrum'tal error and temperature. | | Barometer. Reduced to sea-level. | | Temperature of the Air. | | Relative Humidity | Wind. Direction. | Wind. Velocity. | | Wind. Force. | Clouds. Amount. | | Clouds. Direction. | | Rain-fall or melted snow in the past 24 hours. | | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inches | Millimeters. | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0–10. | Up'er 0–10. | Low'r 0–10. | Upper. From— | Lower. From— | Inches. | Millimeters. | | |
| Haparanda | 29.64 | 752.8 | 29.68 | 753.8 | 41.7 | 5.4 | ..... | E | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.79 | 756.6 | 29.84 | 757.9 | 48.6 | 9.2 | 92 | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.85 | 758.2 | 29.90 | 759.5 | 51.1 | 10.6 | 33 | WNW | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.79 | 756.7 | 29.97 | 761.2 | 56.3 | 13.5 | 37 | WNW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.98 | 761.4 | 30.04 | 762.9 | 47.5 | 8.6 | 84 | W | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.88 | 759.0 | 29.96 | 760.9 | 56.5 | 13.6 | 39 | NNW | 10.3 | 4.6 | ..... | ..... | 5 | ..... | W | 0.001 | 0.03 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.65 | 727.6 | 30.09 | 764.2 | 49.6 | 9.8 | 68 | NNE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0.008 | 0.2 | Clear | The Observatory. |
| Zurich | 28.45 | 722.7 | 30.10 | 764.6 | 50.9 | 10.5 | 66 | E | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | Bright | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +3.4 mm.; Thermometer, —1.8 cent.; Relative Humidity, +1 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.00 | 762.0 | 49.1 | 9.5 | 89 | N | 20 | 9.0 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanidès. |
| Valona | ..... | ..... | 29.94 | 760.5 | 62.1 | 16.7 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Rainy | A. Bertrand. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'ry | 29.76 | 755.9 | 29.88 | 758.9 | 68.9 | 20.5 | 81 | N | ..... | ..... | 1 | ..... | 5ck | ..... | ..... | 0 | 0 | Hazy | Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.45 | 748.0 | 29.52 | 749.8 | 32.7 | 0.4 | 90 | NE | 5 | 2.2 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing | Hon. J. Ferguson. |
| Brockville, Ontario | 29.18 | 741.2 | 29.49 | 749.0 | 43 | 6.1 | ..... | W | 5 | 2.2 | ..... | ..... | 10ks | ..... | W | 0 | 0 | Cloudy | W. R. Bigg. |
| *Chatham, N B | 29.39 | 746.5 | 29.45 | 748.0 | 33 | 0.6 | 96 | NE | 8 | 3.6 | ..... | ..... | 10n | ..... | NE | 0.65 | 16.5 | Light rain | G. A. Blair. |
| Charlottetown, P. E. Island | 29.43 | 747.5 | 29.48 | 748.8 | 35 | 1.7 | 93 | E | 16 | 7.2 | ..... | ..... | 10n | ..... | Calm | 0.230 | 5.84 | Light rain | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.17 | 740.9 | 29.36 | 745.7 | 45.1 | 7.3 | 74 | NW | ..... | ..... | 4 | 7cs | 3s | NW | ..... | 0.046 | 1.17 | Clearing | James Smith, M. A |
| Dalhousie, N. B | 29.47 | 748.5 | 29.51 | 749.5 | 33.3 | 0.7 | 87 | SE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.40 | 10.2 | Gloomy | H. A. Johnson. |
| Esquimault, B. C | 29.84 | 757.9 | 29.88 | 758.9 | 37.1 | 2.8 | 91 | NE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.01 | 0.3 | Cloudy | W. H. Bevis. |
| *Father Point, Quebec | 29.42 | 747.3 | 29.44 | 747.8 | 33 | 0.6 | 86 | E | 45 | 20.1 | ..... | ..... | 10n | ..... | Calm | 0.31 | 7.9 | Light snow | J. McWilliams. |
| Fredericton, N. B | 29.31 | 744.5 | 29.38 | 746.2 | 35.8 | 2.1 | 92 | E | 15 | 6.7 | ..... | ..... | 10n | ..... | ..... | 0.25 | 6.3 | Drizzling | Prof. Harrison. |
| *Fort Garry Manitoba | 29.12 | 739.6 | 29.97 | 761.2 | 31 | — 0.6 | 97 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.60 | 726.4 | 29.71 | 754 6 | 41 | 5.0 | 74 | W | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Grant. |
| *Halifax, N. S | 29.27 | 743.4 | 29.41 | 747.0 | 38 | 3.3 | 98 | S | 7 | 3.1 | ..... | ..... | Fog | ..... | ..... | 0.773 | 19.64 | Foggy | F. Allison, M. A. |
| Hamilton, Ontario | 29.31 | 744.5 | 29.68 | 753.9 | 44.7 | 7.1 | 67 | SW | ..... | ..... | 1 | 0 | ..... | ..... | ..... | 0 | 0 | Clear | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.64 | 752.8 | 29.67 | 753.6 | 38 | 3.3 | 100 | NE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Foggy | E. Weedon. |
| *Kingston, Ontario | 29.16 | 740.7 | 29.50 | 749.3 | 42 | 5.6 | 72 | W | 22 | 9.8 | ..... | 2c | 0 | W | ..... | Inap. | Inap. | Clear | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.56 | 750.8 | 29.60 | 751.8 | 35.2 | 1.8 | ..... | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Misty | C. H. Rigby. |
| *Montreal, Quebec | 29.13 | 739.9 | 29.33 | 745.0 | 39 | 3.9 | 96 | W | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0.49 | 12.4 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 28.89 | 733.8 | 29.59 | 751.6 | 40 | 4.4 | 86 | W | 15 | 6.7 | ..... | ..... | 10n | ..... | W | 0 | 0 | Cloudy | Rev. R. Mosley. |
| Peterboro, Ontario | 28.80 | 731.5 | 29.55 | 750.6 | 43.7 | 6.5 | 67 | NW | ..... | ..... | ..... | 7k | 0 | ..... | ..... | 0 | 0 | Windy | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.01 | 736.8 | 29.70 | 754.4 | 44 | 6.7 | 68 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | H. Morgan. |
| Port Hastings, N. S | 29.47 | 748.5 | 29.52 | 749.8 | 36.4 | 2.4 | ..... | SE | 7 | 3.1 | ..... | ..... | ..... | ..... | ..... | 0.69 | 17.5 | Raining | Peter Grant. |
| Port Stanley, Ontario | 29.08 | 738.6 | 29.73 | 755.1 | 43 | 6.1 | 63 | W | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | M. Payne. |
| *Quebec, Quebec | 29.02 | 737.1 | 29.35 | 745.5 | 36 | 2.2 | 90 | E | ..... | ..... | 7 | ..... | 10n | ..... | ..... | 0.51 | 13.0 | Rain & sleet | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.00 | 736.6 | 29.46 | 748.3 | 42 | 5.6 | 78 | NW | 15 | 6.7 | ..... | ..... | 8s | ..... | NW | 0 | 0 | Cloudy | W. H. McIntyre. |
| St. Andrews, N. B | 29.23 | 742.4 | 29.28 | 743.7 | 39 | 3.9 | 95 | S | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0.70 | 17.8 | Cloudy | Dr. Gove. |
| St. John, N. B | 29.19 | 741.4 | 29.36 | 745.7 | 37 | 2.8 | 95 | SE | 5 | 2.2 | ..... | ..... | 10n | ..... | ..... | 0.070 | 1.78 | Drizzling | G. Murdock, C. E. |
| *Saugeen, Ontario | 28.95 | 735.3 | 29.67 | 753.6 | 41 | 5.0 | 93 | NW | 13 | 5.8 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Cloudy | K. Stewart. |
| Stayner, Ontario | 28.83 | 732.3 | 29.61 | 752.1 | 41 | 5.0 | 82 | NW | 13 | 5.8 | ..... | ..... | 10n | ..... | NW | 0 | 0 | Threatening | R. J. Cole. |
| Stratford, Ontario | 28.40 | 721.3 | 29.69 | 754.1 | 41.3 | 5.2 | 67 | NW | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.57 | 751.1 | 29.60 | 751.8 | 37 | 2.8 | 94 | E | 8 | 3.6 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | T. C. Hill. |
| *Toronto, Ontario | 29.25 | 742.9 | 29.64 | 752.8 | 43 | 6.1 | 78 | W | 11 | 4.9 | ..... | ..... | 8ks | ..... | NW | 0 | 0 | Cloudy, | Magnetic Observatory. |
| Windsor, N. S | 29.31 | 744.5 | 29.41 | 747.0 | 42.0 | 5.6 | 91 | SE | 12 | 5.4 | ..... | 10k | 0 | ..... | ..... | 0.21 | 5.3 | Fair | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 37.0 | 2.8 | 100 | NW | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.03 | 0.8 | Misty | John Delany. |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Byt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. | | Barometer. Reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. Direction. | Wind. Velocity. | | Wind. Force. | Clouds. Amount. | | Clouds. Direction. | | Rain-fall or melted snow in the past 24 hours. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inches. | Millimeters. | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0–10 | Up'r 0–10 | Low'r 0–10 | Upper. From— | Lower. From— | Inches. | Millimeters. | | |
| Albany, New York | 29.23 | 742.4 | 29.45 | 748.0 | 45 | 7.2 | 61 | W | 18 | 8.0 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Alpena, Michigan | 29.02 | 737.1 | 29.66 | 753.4 | 42 | 5.6 | 65 | NW | 15 | 6.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Atlantic City, New Jersey | 29.62 | 752.3 | 29.64 | 752.8 | 55 | 12.8 | 68 | W | 15 | 6.7 | ..... | 0 | Haze | ..... | Calm | 0.05 | 1.3 | Clear | |
| Augusta, Georgia | 29.75 | 755.6 | 29.93 | 760.2 | 62 | 16.7 | 61 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Baltimore, Maryland | 29.65 | 753.1 | 29.70 | 754.4 | 57 | 13.9 | 52 | W | 9 | 4.0 | ..... | 5cs;c | Haze | Calm ; W | Calm | Inap. | Inap. | Fair | |
| Barnegat, New Jersey | 29.59 | 751.6 | 29.61 | 752.1 | 58 | 14.4 | 53 | W | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Bismarck, Dakota | 28.08 | 713.2 | 29.94 | 760.5 | 36 | 2.2 | 61 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Boise City, Idaho | 26.92 | 683.8 | 29.83 | 756.9 | 30 | — 1.1 | 78 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | Trap. | Inap. | Cloudy | |
| Boston, Massachusetts | 29.24 | 742.7 | 29.39 | 746.5 | 50.5 | 10.3 | 52 | W | 23 | 10.3 | ..... | 6k;cs | 0 | W;NW | ..... | 0.15 | 3.8 | Clear | |
| Brackettville, Texas | 28.53 | 725.4 | 29.55 | 750.6 | 69 | 20.6 | 85 | SW | 7 | 3.1 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 28.88 | 733.5 | 29.90 | 759.4 | 34 | 1.1 | 79 | N | 4 | 1.8 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Brownsville, Texas | 29.65 | 753.1 | 29.72 | 754.9 | 76 | 24.4 | 81 | SE | 14 | 6.3 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Buffalo, New York | 28.94 | 735.1 | 29.63 | 752.6 | 44 | 6.7 | 68 | SW | 15 | 6.7 | ..... | 0 | 0 | ..... | ..... | Inap | Inap | Clear | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 60 | 15.6 | 71 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.09 | 738.9 | 29.34 | 745.2 | 47 | 8.3 | 55 | W | 8 | 3.6 | ..... | ..... | 10s | ..... | W | 0.24 | 6.1 | Cloudy | |
| Cairo, Illinois | 29.37 | 746.0 | 29.75 | 755.6 | 66 | 18.9 | 59 | S | 6 | 2.7 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Camp Grant, Arizona | 25.65 | 636.3 | 29.83 | 757.7 | 53 | 11.7 | 34 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | 26.53 | 673.6 | 30.01 | 762.2 | 54 | 12.2 | 67 | S | ..... | ..... | 2 | ..... | 10ks | ..... | W | 0 | 0 | Cloudy | |
| Campo, California | 27.22 | 691.4 | 29.79 | 756.7 | 47 | 8.3 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | S | 0.08 | 2.0 | Foggy | |
| Cape Hatteras, N. Carolina | 29.78 | 756.4 | 29.78 | 756.4 | 63 | 17.2 | 78 | SW | 16 | 7.2 | ..... | 5cs | 0 | W | ..... | 0 | 0 | Fair | |
| Cape Henry, Virginia | 29.69 | 754.1 | 29.71 | 754.6 | 63 | 17.2 | 57 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 29.81 | 757.2 | 29.82 | 757.4 | 64 | 17.8 | 78 | W | 26 | 11.6 | ..... | 2k | 0 | NW | ..... | 0 | 0 | Fair | |
| Cape May, New Jersey | 29.65 | 753.1 | 29.68 | 753.9 | 52 | 11.1 | 72 | W | 24 | 10.7 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Charleston, South Carolina | 29.90 | 759.4 | 29.97 | 761.2 | 64 | 17.8 | 73 | W | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 23.68 | 601.5 | 29.62 | 752.3 | 32 | 0.0 | 89 | N | 16 | 7.2 | ..... | 2ck | 8s | N | N | 0 | 0 | Cloudy | |
| Chicago, Illinois | 29.15 | 740.4 | 29.84 | 757.9 | 47 | 8.3 | 55 | N | 8 | 3.6 | ..... | 5c | 0 | N | ..... | 0 | 0 | Fair | |
| Cincinnati, Ohio | 29.14 | 740.1 | 29.78 | 756.4 | 58 | 14.4 | 64 | N | 2 | 0.9 | ..... | 1c | Fog | W | Calm | 0.02 | 0.5 | Clear | |
| Cleveland, Ohio | 29.07 | 738.4 | 29.79 | 756.7 | 46 | 7.8 | 69 | W | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Concho, Texas | 27.75 | 704.8 | 29.35 | 745.5 | 67 | 19.4 | 83 | S | ..... | ..... | 1 | 8k | 0 | S | ..... | 0.01 | 0.3 | Cloudy | |
| Corsicana, Texas | 29.22 | 742.2 | 29.67 | 753.6 | 67 | 19.4 | 84 | S | 10 | 4.5 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Davenport, Iowa | 29.24 | 742.7 | 29.88 | 758.9 | 44 | 6.7 | 52 | E | 8 | 3.6 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Deadwood, Dakota | 25.15 | 638.8 | ..... | ..... | 31 | — 0.6 | 89 | S | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0.10 | 2.5 | Cloudy | |
| Denison, Texas | 28.87 | 733.3 | 29.63 | 752.6 | 66 | 18.9 | 89 | S | 12 | 5.4 | ..... | ..... | 10n | ..... | S | Inap. | Inap | Light rain | |
| Denver, Colorado | 24.38 | 619.2 | 29.69 | 754.8 | 36 | 2.2 | 61 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Detroit, Michigan | 29.00 | 736.9 | 29.76 | 755.9 | 44 | 6.7 | 52 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dodge City, Kansas | 26.87 | 682.5 | 29.09 | 738.9 | 43 | 6.1 | 92 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 29.17 | 740.9 | 29.87 | 758.7 | 40 | 4.4 | 65 | NW | 2 | 0.9 | ..... | 5ck | 0 | Calm | ..... | 0 | 0 | Fair | |
| Duluth, Minnesota | 29.17 | 740.9 | 29.85 | 758.2 | 37 | 2.8 | 63 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eagle Pass, Texas | 28.99 | 736.0 | 29.59 | 751.6 | 70 | 21.1 | 85 | SE | 8 | 3.6 | ..... | 10k | 0 | E | ..... | 0 | 0 | Cloudy | |
| Eastport, Maine | 29.20 | 741.7 | 29.26 | 743.2 | 41 | 5.0 | 91 | S | 7 | 3.1 | ..... | ..... | 10s | ..... | SW | 1.19 | 30.2 | Cloudy | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 67 | 19.4 | 41 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.00 | 736.6 | 29.70 | 754.4 | 45 | 7.2 | 76 | W | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Escanaba, Michigan | 29.13 | 739.9 | 29.78 | 756.4 | 38 | 3.3 | 63 | NW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Florence, Arizona | 28.14 | 714.7 | 29.74 | 755.4 | 64 | 17.8 | 53 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | 23.95 | 608.3 | 29.95 | 760.7 | 43 | 6.1 | 32 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.23 | 640.8 | ..... | ..... | 49 | 9.4 | 44 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 24.92 | 633.0 | 29.88 | 758.9 | 64 | 17.8 | 23 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.04 | 737.6 | 29.55 | 750.6 | 66 | 18.9 | 79 | SE | 13 | 5.8 | ..... | 2ck | 5ks | SW | SE | 0 | 0 | Threatening | |
| Fort Griffin, Texas | 28.33 | 719.6 | 29.53 | 750.0 | 66 | 18.9 | 84 | NE | 4 | 1.8 | ..... | 2ck | 2s | S | S | 0 | 0 | Fair | |
| Fort St. Michael, Alaska | 30.03 | 762.7 | 30.06 | 763.5 | 18 | — 7.8 | 100 | W | 5 | 2.2 | ..... | ..... | 10s | ..... | SW | 0.01 | 0.3 | Cloudy | |
| Fort Sill, Indian Territory | 28.36 | 720.3 | 29.41 | 747.0 | 63 | 17.2 | 88 | S | 12 | 5.4 | ..... | 0 | 5s | ..... | W | 0 | 0 | Fair | |
| Galveston, Texas | 29.74 | 755.4 | 29.78 | 756.4 | 70 | 21.1 | 95 | S | 7 | 3.1 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Grand Haven, Michigan | 29.18 | 741.2 | 29.82 | 757.4 | 50 | 10.0 | 65 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianapolis, Indiana | 29.01 | 737.6 | 29.81 | 757.2 | 53 | 11.7 | 54 | N | 2 | 0.9 | ..... | 8cs | 0 | W | ..... | 0.01 | 0.3 | Fair | |
| Indianola, Texas | 29.74 | 755.4 | 29.76 | 755.9 | 72 | 22.2 | 90 | SE | 11 | 4.9 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Jacksboro, Texas | 28.45 | 722.6 | 29.52 | 749.8 | 65 | 18.3 | 84 | SW | 16 | 7.2 | ..... | 4k | 0 | SW | ..... | 0 | 0 | Fair | |
| Jacksonville, Florida | 29.91 | 760.5 | 29.97 | 761.2 | 67 | 19.4 | 64 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.15 | 740.4 | 29.76 | 755.9 | 47 | 8.3 | 55 | NE | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Key West, Florida | 29.88 | 758.9 | 29.91 | 759.7 | 78 | 25.6 | 82 | E | 4 | 1.8 | ..... | 1k | 0 | SE | ..... | 0 | 0 | Clear | |
| Kittyhawk, North Carolina | 29.72 | 754.9 | 29.74 | 755.4 | 62 | 16.7 | 56 | W | 16 | 7.2 | ..... | 0 | C | ..... | ..... | 0 | 0 | Clear | |
| Knoxville, Tennessee | 28.88 | 733.5 | 29.86 | 758.4 | 58 | 14.4 | 42 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Crosse, Wisconsin | 29.14 | 740.1 | 29.89 | 759.2 | 40 | 4.4 | 65 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 25.83 | 656.1 | 29.98 | 761.5 | 49 | 9.4 | 42 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.25 | 742.9 | 29.58 | 751.3 | 73 | 22.8 | 76 | SE | 6 | 2.7 | ..... | ..... | 10s | Calm | ..... | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 28.83 | 732.3 | 29.65 | 753.1 | 52 | 11.1 | 54 | E | 14 | 6.3 | ..... | 2ck | 2ks | W | N | 0 | 0 | Fair | |
| Los Angeles, California | 29.45 | 748.0 | 29.78 | 756.4 | 55 | 12.8 | 87 | E | 4 | 1.8 | ..... | 0 | 8s | ..... | E | 0 | 0 | Cloudy | |
| Louisville, Kentucky | 29.24 | 742.7 | 29.79 | 756.7 | 58 | 14.4 | 58 | NE | 4 | 1.8 | ..... | 5c | Sm'c | W | Calm | 0 | 0 | Fair | |
| Lynchburg, Virginia | 29.09 | 738.9 | 29.76 | 755.9 | 57 | 13.9 | 69 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.04 | 737.6 | 29.74 | 755.4 | 42 | 5.6 | 58 | W | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mason, Texas | 28.04 | 712.2 | 29.72 | 754.9 | 67 | 19.4 | 79 | S | 12 | 5.4 | ..... | ..... | 10s | ..... | S | 0 | 0 | Threatening | |
| Memphis, Tennessee | 29.49 | 749.0 | 29.80 | 756.9 | 64 | 17.8 | 61 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.13 | 739.9 | 29.86 | 758.4 | 44 | 6.7 | 68 | NW | 3 | 1.3 | ..... | 5cs | Haze | NW | ..... | 0 | 0 | Fair | |
| Mobile, Alabama | 29.87 | 758.7 | 29.91 | 759.7 | 59 | 15.0 | 85 | Calm | 0 | 0 | ..... | 8k | 0 | W | ..... | 0 | 0 | Fair | |
| Montgomery, Alabama | 29.70 | 754.4 | 29.94 | 760.5 | 55.5 | 13.1 | 89 | NE | 1 | 0.4 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Morgantown, West Virginia | 28.72 | 729.5 | 29.73 | 755.1 | 59 | 15.0 | 59 | W | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Mt. Washington, N. H. | 23.04 | 585.2 | 29.40 | 746.7 | 22 | — 5.6 | 100 | NW | 57 | 25.5 | ..... | ..... | 10n | ..... | NW | 2.00 | 50.8 | Light snow | |
| Nashville, Tennessee | 29.28 | 743.7 | 29.80 | 756.9 | 62 | 16.7 | 51 | NE | 3 | 1.3 | ..... | 8c | Haze | Calm | Calm | 0 | 0 | Hazy | |
| New Haven, Connecticut | 29.38 | 746.2 | 29.49 | 749.0 | 56 | 13.3 | 46 | W | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | Inap | Inap. | Clear | |
| New London, Connecticut | 29.43 | 747.5 | 29.48 | 748.8 | 52 | 11.1 | 60 | W | 9 | 4.0 | ..... | 1cs | 0 | W | ..... | 0.06 | 1.5 | Clear | |
| New Orleans, Louisiana | 29.80 | 756.9 | 29.88 | 758.4 | 63 | 17.2 | 83 | SE | 4 | 1.8 | ..... | 8k | 0 | SE | ..... | 0 | 0 | Fair | |
| Newport, Rhode Island | 29.40 | 746.7 | 29.45 | 748.0 | 50 | 10.0 | 79 | W | 14 | 6.3 | ..... | 5c | 0 | W | ..... | 0.13 | 3.3 | Fair | |
| New York, New York | 29.49 | 749.7 | 29.57 | 751.1 | 50 | 10.0 | 55 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Norfolk, Virginia | 29.70 | 754.4 | 29.76 | 755.9 | 60 | 15.6 | 71 | SW | 1 | 0.4 | ..... | Haze | Haze | ..... | ..... | 0 | 0 | Hazy | |
| North Platte, Nebraska | 26.76 | 679.7 | 29.28 | 743.7 | 44 | 6.7 | 40 | E | 23 | 12.5 | ..... | 8cs | 0 | E | ..... | 0 | 0 | Cloudy | |
| Olympia, Washington Ter. | 29.84 | 757.9 | 29.88 | 758.9 | 34 | 1.1 | 90 | SW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Omaha, Nebraska | 28.62 | 726.9 | 29.69 | 754.1 | 45 | 7.2 | 84 | E | 14 | 6.3 | ..... | 5c | 2s | SW | Calm | Inap. | Inap. | Fair | |
| Oswego, New York | 29.25 | 742.9 | 29.56 | 750.8 | 43 | 6.1 | 75 | W | 16 | 7.2 | ..... | 2c | 2s | NW | NW | 0 | 0 | Fair | |
| Pembina, Dakota | 29.06 | 738.1 | 29.92 | 760.0 | 29.5 | — 1.4 | 84 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Philadelphia, Pennsylvania | 29.60 | 751.8 | 29.64 | 752.8 | 54 | 12.2 | 61 | W | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Phœnix, Arizona | 28.36 | 720.3 | 30.23 | 767.8 | 54 | 12.2 | 55 | E | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.48 | 444.0 | 29.69 | 754.1 | 12 | —11.1 | 42 | SW | 26 | 11.6 | ..... | 0 | 0 | ..... | ..... | 6 | 0 | Clear | |
| Pioche, Nevada | 23.63 | 600.2 | 29.10 | 746.7 | 41 | 5.0 | 65 | W | 4 | 1.8 | ..... | ..... | 10s | ..... | W | Inap. | Inap. | Cloudy | |
| Pittsburg, Pennsylvania | 28.93 | 734.8 | 29.73 | 755.1 | 48 | 8.9 | 56 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Port Huron, Michigan | 29.06 | 738.1 | 29.71 | 754.6 | 45 | 7.2 | 53 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Portland, Maine | 29.26 | 743.2 | 29.31 | 744.5 | 49 | 9.4 | 64 | SW | 8 | 3.6 | ..... | 8k | Haze | Calm | ..... | 0.27 | 6.9 | Cloudy | |
| Portland, Oregon | 29.88 | 758.9 | 29.99 | 761.7 | 37 | 2.8 | 80 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | W | 6 | 0 | Cloudy | |
| Prescott, Arizona | 24.47 | 621.5 | 29.83 | 757.7 | 52 | 11.1 | 47 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Punta Rassa, Florida | 29.92 | 760.0 | 29.94 | 760.5 | 73 | 22.8 | 85 | E | 8 | 3.6 | ..... | 5k | 0 | SE | ..... | 0 | 0 | Fair | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'r 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Red Bluff, California | 29.41 | 747.8 | 29.80 | 756.9 | 46 | 7.8 | 47 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Rochester, New York | 28.97 | 735.8 | 29.57 | 751.1 | 45 | 7.2 | 68 | W | 14 | 6.3 | ..... | 0 | 8s | ..... | NW | 0.01 | 0.3 | Fair..... | |
| Roseburg, Oregon | 29.42 | 747.3 | 30.00 | 762.0 | 36 | 2.2 | 95 | N | 2 | 0.9 | ..... | 2k | 7s | Calm | Calm | 0.03 | 0.8 | Cloudy..... | |
| Sacramento, California | 29.66 | 753.4 | 29.74 | 755.4 | 53 | 11.7 | 73 | NW | 20 | 8.9 | ..... | 5k | 0 | NW | ..... | 0 | 0 | Fair..... | |
| St. Louis, Missouri | 29.21 | 742.7 | 29.80 | 756.9 | 55 | 12.8 | 56 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | S | 0.06 | 1.5 | Cloudy ..... | |
| St. Marks, Florida | 29.93 | 760.2 | 29.94 | 760.5 | 58 | 14.4 | 87 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| St. Paul, Minnesota | 29.02 | 737.1 | 29.85 | 758.2 | 38 | 3.3 | 63 | Calm | 0 | 0 | ..... | 10cs | 0 | W | ..... | 0 | 0 | Cloudy..... | |
| Salt Lake City, Utah | 25.27 | 641.8 | 29.60 | 751.8 | 42 | 5.6 | 58 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | NE | Inap | Inap. | Cloudy..... | |
| San Antonio, Texas | 29.01 | 736.8 | 29.57 | 751.1 | 69 | 20.6 | 85 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Threatening | |
| San Diego, California | 29.79 | 756.7 | 29.86 | 758.4 | 56 | 13.3 | 81 | W | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.05 | 1.3 | Cloudy..... | |
| Sandusky, Ohio | 29.15 | 740.4 | 29.81 | 757.2 | 49 | 9.4 | 57 | NW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Sandy Hook, New Jersey | 29.55 | 750.6 | 29.58 | 751.3 | 55 | 12.8 | 62 | W | 24 | 10.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| San Francisco, California | 29.77 | 756.1 | 29.84 | 757.9 | 48 | 8.9 | 56 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Santa Fé, New Mexico | 23.00 | 584.2 | 29.54 | 750.3 | 35 | 1.7 | 45 | Calm | 0 | 0 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear..... | |
| Savannah, Georgia | 29.86 | 758.4 | 29.95 | 760.7 | 66 | 18.9 | 54 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Shreveport, Louisiana | 29.56 | 750.8 | 29.77 | 756.1 | 63 | 17.2 | 89 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Smithville, North Carolina | 29.87 | 758.7 | 29.90 | 759.4 | 64 | 17.8 | 73 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Springfield, Massachusetts | 29.26 | 743.2 | 29.39 | 746.5 | 52 | 11.1 | 41 | W | 12 | 5.4 | ..... | 8k | 0 | NW | ..... | 0.01 | 0.3 | Fair..... | |
| Stockton, Texas | 26.65 | 676.9 | 29.65 | 753.1 | 53 | 11.7 | 48 | SW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Thatcher's Island, Mass | 29.32 | 744.7 | 29.37 | 746.0 | 49 | 9.4 | 57 | W | 24 | 10.7 | ..... | 7k | 0 | W | ..... | 0.34 | 8.6 | Clear..... | |
| Toledo, Ohio | 29.10 | 739.1 | 29.76 | 755.9 | 52 | 11.1 | 47 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 49 | 9.4 | 77 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Tybee Island, Georgia | 29.92 | 760.0 | 29.95 | 760.7 | 62 | 16.7 | 83 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Umatilla, Oregon | 29.57 | 751.1 | ..... | ..... | 30 | — 1.1 | 57 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Vicksburg, Mississippi | 29.62 | 752.3 | 29.87 | 758.7 | 60 | 15.6 | 82 | SE | 6 | 2.7 | ..... | 8k | 0 | S | ..... | 0 | 0 | Fair..... | |
| Virginia City, Montana | 23.80 | 606.8 | 29.37 | 746.0 | 26 | — 3.3 | 75 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.31 | 7.9 | Cloudy..... | |
| Visalia, California | 29.44 | 747.8 | 29.81 | 757.2 | 47 | 8.3 | 70 | NW | 2 | 0.9 | ..... | 0 | 1s | ..... | W | 0 | 0 | Clear. ..... | |
| Washington, D. C | 29.62 | 752.3 | 29.73 | 755.1 | 59 | 15.0 | 48 | NW | 6 | 2.7 | ..... | 2c | 1s | W | W | 0 | 0 | Fair ..... | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 53 | 11.7 | 48 | SW | ..... | ..... | 1 | 2c | 0 | Calm | ..... | 0 | 0 | Fair..... | |
| Wilmington, N. Carolina | 29.78 | 756.4 | 29.86 | 758.4 | 64 | 17.8 | 47 | SW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Winnemucca, Nevada | 25.27 | 641.8 | 29.63 | 752.6 | 32 | 0.0 | 89 | NW | 2 | 0.9 | ..... | ..... | 10n | ..... | Calm | 0.16 | 4.1 | Light snow.. | |
| Wood's Holl, Mass | 29.39 | 746.5 | 29.44 | 747.8 | 55 | 12.8 | 61 | NW | 12 | 5.4 | ..... | Haze | 0 | Calm | ..... | 0.08 | 2.0 | Clear ..... | |
| Yankton, Dakota | 28.61 | 726.7 | 29.91 | 759.7 | 40 | 4.4 | 64 | NE | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | Inap | Inap | Cloudy ..... | |
| Yuma, Arizona | 29.57 | 751.1 | 29.73 | 755.1 | 59 | 15.0 | 63 | S | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| York Factory, B. A | 30.15 | 765.8 | 30.20 | 767.1 | 14.0 | —10.0 | 91 | NE | 12 | 5.4 | ..... | 5ck | 3s | NE | ..... | Inap. | Inap. | Snowing..... | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I | 29.87 | 758.7 | 29.89 | 759.2 | 77 | 25.0 | 76 | SE | 2.4 | 1.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | 30.09 | 764.3 | 30.10 | 764.5 | 76 | 24.4 | 86 | Calm | 0 | 0 | ..... | 8c | 0 | Calm | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I | 29.85 | 758.2 | 29.93 | 760.2 | 82 | 27.8 | ..... | E | 10 | 4.5 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair..... | F. M. Everett. |
| Paramaribo, D. Guiana, S. A | 30.00 | 762.0 | 30.00 | 762.0 | 81 | 27.2 | 91 | NE | ..... | ..... | 2 | ..... | 10n | ..... | ..... | 1.170 | 29.72 | Raining..... | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dr. H. Groot. |
| Medellin, Colombia, S. A | 25.22 | 640.6 | ..... | ..... | 70.0 | 21.1 | 81 | Calm | ..... | ..... | 0 | 7cs | 1ks | ..... | ..... | 0.02 | 0.5 | ..... | Thomas Herran. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 metres; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Bracketsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,740 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m., Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,562.2 (?) ft., or 2,001.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 m.; Fort Bayard, 6.0 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.83 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 m.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er. —10. | Clouds. Amount. Low'r. 0—10. | Clouds. Direction. Up'er. From— | Clouds. Direction. Low'r. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.77 | 756.1 | 46 | 7.8 | 43 | 6.1 | 59 | NW | 10 | 4.5 | .... | ..... | 1 | ..... | W | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Pensacola, Fla. | 30.04 | 763.0 | 66 | 18.9 | 66 | 18.9 | 89 | NW | 1 | 0.4 | .... | ..... | 2 | ..... | W | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Portsmouth, N.H | 29.44 | 747.8 | 72 | 22.2 | 50 | 10.0 | 64 | WSW | 3 | 1.3 | ..... | ..... | 2 | ..... | ..... | 0.4 | 10. | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan | 30.22* | 767.6* | 62.5 | 16.9 | 62.8 | 17.1 | 94 | SW | ..... | ..... | 4 | ..... | 10n | ..... | SW | 0.58 | 14.7 | ..... | ..... | Raining..... | |
| Adams. Panama | 29.94 | 760.5 | 84 | 28.9 | 83 | 28.3 | 83 | NNW | ..... | ..... | 0–1 | ..... | 2 | ..... | ..... | ..... | ..... | Smooth | ..... | Fair ..... | |
| Alliance. Villefranche, France | 29.97‡ | 761.2‡ | ..... | ..... | 63 | 17.2 | 52 | S | ..... | ..... | 0–1 | ..... | 1 | ..... | S | ..... | ..... | None | ..... | Clear ..... | |
| Ashuelot. Shanghai, China | 30.23 | 767.8 | 57 | 13.9 | 54 | 12.2 | 93 | E | ..... | ..... | 2 | ..... | 10 | ..... | E | ..... | ..... | ..... | ..... | Light rain... | |
| Canonicus, New Orleans, La. | 29.87 | 758.7 | 50 | 10.0 | 64 | 17.8 | 89 | E | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | ..... | ..... | Fair ..... | |
| Colorado, New York, N. Y. | 29.55‡ | 750.6‡ | ..... | ..... | 54 | 12.2 | 49 | W | 12 | 5.4 | ..... | ..... | 2 | ..... | W | 0 | 0 | ..... | ..... | Hazy..... | |
| Constellation, N. 43° 12′ W. 39° 03′ | 29.49‡ | 749.0‡ | ..... | ..... | 57 | 13.9 | 87 | N | ..... | ..... | 2 | ..... | 5 | ..... | N | ..... | ..... | Smooth | N | Fair ..... | |
| Constitution, Havre, France | 30.05‡ | 763.3‡ | ..... | ..... | 60 | 15.6 | 55 | SSE | ..... | ..... | 2 | ..... | 7 | ..... | SE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Despatch, Constantinople, Turkey | 30.04‡ | 763.0‡ | ..... | ..... | 51 | 10.6 | 86 | NE | ..... | ..... | 4 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Enterprise, Norfolk, Va. | 29.76‡ | 765.9‡ | ..... | ..... | 56 | 13.3 | 75 | SW | ..... | ..... | 1 | ..... | 1 | ..... | WNW | ..... | ..... | ..... | ..... | Clear ..... | |
| Franklin, Norfolk, Va. | 29.83 | 757.7 | 68 | 20.0 | 59 | 15.0 | 65 | WSW | 7.2 | 3.2 | ..... | ..... | 2 | ..... | WSW | 0 | 0 | ..... | ..... | D. clouds.... | |
| Gettysburg Valetta, Malta | 29.87‡ | 758.7‡ | ..... | ..... | 68 | 20.0 | 100 | WNW | ..... | ..... | 1 | ..... | 8 | ..... | Calm | 0 | 0 | ..... | ..... | Cloudy..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.06 | 763.5 | 77 | 25.0 | 76 | 24.4 | 68 | NNE | ..... | ..... | 5 | ..... | 2 | ..... | NNE | ..... | ..... | Smooth | ..... | Clear..... | |
| Hartford, Montevideo, Uraguay | 29.94 | 760.5 | 66 | 18.9 | 64 | 17.8 | 83 | NNW | 7.2 | 3.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Marion, Off Vourla, Turkey | 29.88 | 758.9 | 65 | 18.3 | 68 | 20.0 | 70 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | Calm | Mod'ate | Mod'ate | Smooth | ..... | Cloudy..... | |
| Michigan, Erie, Pa. | 29.14 | 740.1 | 60 | 15.6 | 53 | 11.7 | 67 | WSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Monocacy. Shanghai, China | 30.23‡ | 767.8‡ | ..... | ..... | 54 | 12.2 | 93 | ESE | ..... | ..... | 1 | ..... | 10 | ..... | SE | ..... | ..... | ..... | ..... | Overcast..... | |
| New Hampshire, Port Royal, S. C. | 30.14† | 765.5† | ..... | ..... | 63 | 17.2 | 57 | W | 10 | 4.5 | .... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Omaha, N. 25° 35′ W. 68° 24′ | 30.04* | 763.0* | 75 | 23.9 | 74 | 23.3 | 95 | SE | 1 | 0.4 | ..... | ..... | 9 | ..... | SE | 0 | 0 | ..... | ..... | Cloudy ..... | |
| Onward, Callao, Peru | 30.02† | 762.5† | ..... | ..... | 69 | 20.6 | 90 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, Pensacola, Fla. | 29.94‡ | 760.5‡ | ..... | ..... | 67 | 19.4 | 84 | NNE | ..... | ..... | 1 | ..... | 2 | ..... | SE | ..... | ..... | ..... | ..... | Fair ..... | |
| Palos, Shanghai, China | 30.25* | 768.3* | 62 | 16.7 | 53 | 11.7 | 100 | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Rainy... ..... | |
| Pensacola, N. 28° 43′, W. 159° 45′ | 30.47 | 773.9 | 68 | 20.0 | 68 | 20.0 | 74 | ENE | 26 | 11.6 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | Smooth | NE | Cloudy ..... | |
| Plymouth. Norfolk, Va. | 29.76‡ | 755.9‡ | ..... | ..... | 61 | 16.1 | 82 | W | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Powhatan, Norfolk, Va. | 29.75‡ | 755.6‡ | ..... | ..... | 61 | 16.1 | 94 | SSW | 3.6 | 1.6 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Ranger. Takao, Formosa | 30.22* | 767.6* | ..... | ..... | 64 | 17.8 | 94 | NNE | ..... | ..... | 3 | ..... | 10 | ..... | NE | ..... | ..... | Smooth | ..... | Foggy ..... | |
| Rio Bravo, Brownsville, Texas | 29.73 | 755.1 | 74 | 23.3 | 74 | 23.3 | 100 | S | ..... | ..... | 2 | ..... | 10 | ..... | S | ..... | ..... | ..... | ..... | Cloudy..... | |
| Santee, Annapolis, Md. | 29.67‡ | 753.6‡ | ..... | ..... | 60 | 15.6 | 94 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Saratoga, Washington, D. C. | 29.66* | 753.4* | ..... | ..... | 65 | 18.3 | 78 | W | ..... | ..... | 4 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Clear ..... | |
| St. Louis, League Island, Pa | 29.63 | 752.6 | 61 | 16.1 | 55 | 12.8 | 62 | W | 9 | 4.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Supply, Havre, France | 30.15 | 765.8 | 58 | 14.4 | 63 | 17.2 | 57 | ESE | ..... | ..... | 1 | ..... | 5 | ..... | SE | ..... | ..... | ..... | ..... | Fair ..... | |
| Swatara, Aspinwall | 29.96 | 761.0 | 82 | 27.8 | 81 | 27.2 | 87 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Tennessee, Aden, Arabia | 29.88* | 758.9* | 86 | 30.0 | 87 | 30.6 | 65 | SSE | 4 | 1.8 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Slight | SSE | Hazy..... | |
| Trenton, Villefranche, France | 29.94‡ | 760.5‡ | ..... | ..... | 65 | 18.3 | 63 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Hazy..... | |
| Tuscarora, Acapulco, Mexico | 29.68 | 753.9 | 75 | 23.9 | 75 | 23.9 | 81 | WNW | ..... | ..... | 3 | ..... | 2 | ..... | Calm | ..... | ..... | Smooth | ..... | Clear..... | |
| Vandalia, Villefranche, France | 29.93‡ | 760.2‡ | ..... | ..... | 62 | 16.7 | 61 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | NE | ..... | ..... | ..... | ..... | Clear ..... | |
| Wabash, Boston, Mass. | 29.41‡ | 747.0‡ | ..... | ..... | 51 | 10.6 | 65 | WSW | 12 | 5.4 | ..... | ..... | 2 | ..... | Calm | 0.18 | 4.6 | ..... | ..... | Fair ..... | |
| Wyoming, N. 40° 59′, W. 48° 30′ | 29.80* | 756.9* | ..... | ..... | 54 | 12.2 | 87 | NNW | ..... | ..... | 4 | ..... | 7 | ..... | N | ..... | ..... | Mod'ate | NW | D. clouds.... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | Character. | Direction from— | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Panama, N. 44°, W. 124° 10′ | | | 30.00* | 762.0* | | | | NNW | | | 2 | | 4 | | NW | Mod'ate | WNW | Clear | Capt. Seabury. |
| S. S. City of Peking, N. 37° 09′, E. 177° 19′ | | | 29.48† | 748.8† | 48 | 8.9 | 85 | SW | 50.0 | 22.4 | | | 4 | | SW | Rough | SW | D. clouds | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, N. 33° 13′, E. 176° 30′ | | | | | 57 | 13.9 | | W | | | 8 | | 2 | | WNW | Mod'ate | WNW | D. clouds | Capt. Maury. |
| S. S. Colima, N. 32° 15′, W. 118° 6′ | | | 29.89† | 759.2† | 62 | 16.7 | 66 | WNW | | | 4 | | 10 | | W | Rough | WNW | Showery | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, N. 51° 24′, W. 14° 55′ | | | 29.49† | 749.0† | 54 | 12.2 | ?? | SSW | | | 5 | | 10k | | SW | Mod'ate | SW | Misty | Capt. W. H. Thompson. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic, N. 49° 38′, W. 23° 41′ | | | 29.43† | 747.5† | 57 | 13.9 | 87 | SSW | | | 3 | | | | SW | Light | SW | D. clouds | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Aneroid.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic | | | | | | | | | | | | | | | | | | | Capt. John Metcalf. |
| S. S. Gaelic, Off Lamock | | | 29.97† | 761.2† | 76 | 24.4 | 100 | NE | | | 4 | | k | | NE | Smooth | | Overcast | Capt. W. H. Kidley |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | Character. | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | Clear | Captain Shackelford. |
| S. S. Indiana, N. 38° 51′, W. 67° 27′ | | | 29.70* | 754.4* | 59 | 15.0 | 94 | WNW | | | 2 | | 1 | | WNW | Mod'ate | W | Clear | Captain Sargent. |
| S. S. Ohio, Philadelphia, Pa | | | 29.66 | 753.4 | 53 | 11.7 | 93 | W | | | 2 | | 0 | | | | | Clear | Captain Morrison. |
| S. S. Pennsylvania, N. 46° 06′, W. 31° 53′ | | | 29.46* | 748.3* | 72 | 22.2 | 85 | NNW | | | 2 | | 2 | | S | Light | SW | Clear | Captain Harris. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Corrected for temperature and elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Rondle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |

**ALLAN LINE MARINE SERIES.**

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Scandinavian | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.)**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller N. 42° 22′, W. 70° 00′ | | | 29.32 | 744.7 | 46 | 7.8 | 77 | WSW | 20 | 8.9 | | | 0 | | | Rough | | Clear | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 30.18 | 766.6 | 10 | −12.2 | 93 | W | 2.6 | 1.2 | | | 10ks | | | | | Cloudy | O. T. Sherman. |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg$^{d}$.) Chief Signal Officer. U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 14, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.08 | 764.1 | 66.4 | 19.1 | 83 | NE | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Dr. Ollive. |
| Nemours | ..... | ..... | 30.09 | 764.2 | 69.8 | 21.0 | 73 | NNW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Michel. |
| Algiers | ..... | ..... | 30.11 | 764.8 | 63.3 | 17.4 | 86 | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Towiliere. |
| La Calle | ..... | ..... | 30.18 | 766.5 | 68.4 | 20.2 | 68 | NNW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Boulangeot. |
| Tunis | ..... | ..... | 30.14 | 765.5 | 68.0 | 20.0 | 55 | N | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Jacques. |
| Sfax | ..... | ..... | 30.20 | 767.0 | 64.4 | 18.0 | ..... | ESE | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Gau. |
| Saida | ..... | ..... | 30.12 | 765.0 | 72.7 | 22.6 | ..... | NNW | ..... | ..... | 1 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Herbin. |
| Tebessa | ..... | ..... | 30.11 | 764.7 | ..... | ..... | ..... | NNW | ..... | ..... | 5 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Watrin. |
| Geriville | ..... | ..... | 30.17 | 766.4 | 66.2 | 19.0 | 83 | SE | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Lemaillot. |
| Laghouat | ..... | ..... | 30.24 | 768.0 | 70.7 | 21.5 | 45 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Bertrand. |
| Biskra | ..... | ..... | 30.14 | 765.6 | 74.3 | 23.5 | 45 | NE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,369? m.; or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.56 | 750.9 | 30.10 | 764.6 | 67.1 | 19.5 | 43 | SE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.34 | 745.2 | 30.10 | 764.5 | 61.5 | 16.4 | 52 | WSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbiski. |
| Eperies | 29.21 | 741.8 | 30.08 | 763.9 | 59.0 | 15.0 | 59 | NE | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.89 | 733.9 | 30.13 | 765.4 | 60.6 | 15.9 | 50 | S | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0.020 | 0.50 | ..... | Andreas Rospini. |
| Hermannstadt | 28.63 | 727.2 | 30.03 | 762.7 | 60.8 | 16.0 | 46 | ESE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.74 | 730.1 | 30.07 | 763.8 | 59.4 | 15.2 | 49 | NNE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner |
| Lemberg | 29.08 | 738.5 | 30.07 | 763.6 | 56.1 | 13.4 | 62 | S | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Dr. T. Stanecki. |
| Pola | 29.99 | 761.7 | 30.10 | 764.5 | 62.2 | 16.8 | 55 | W | ..... | ..... | 2 | ..... | 2s | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.67 | 753.6 | 30.13 | 765.2 | 64.8 | 18.2 | 54 | SW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.008 | 0.2 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.86 | 758.5 | 30.14 | 765.6 | 58.3 | 14.6 | 63 | SE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Karl Stancel. |
| Trieste | 30.00 | 762.0 | 30.10 | 764.6 | 69.1 | 20.6 | 38 | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | Fair | P. Busin. |
| Vienna | 29.41 | 747.1 | 30.12 | 765.0 | 63.0 | 17.2 | 50 | Calm | ..... | ..... | 0 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.61 | 726.8 | 30.11 | 764.7 | 60.1 | 15.6 | 42 | SE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | Solar halo | Prof. M. Passau. |
| Brussels | 29.85 | 758.2 | 30.04 | 763.1 | 67.5 | 19.7 | 33 | SSW | ..... | ..... | 2 | 6 | ..... | SSW | ..... | 0.004 | 0.1 | ..... | Royal Observatory. |
| Furnes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. E. de Cae. |
| Maeseyck | 29.97 | 761.2 | 30.10 | 764.4 | 66.0 | 18.9 | 47 | S | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 1—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.68 | 753.9 | 29.78 | 756.4 | 59.6 | 15.3 | ..... | S | 12 | 5.4 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | Blue sky..... | W. B swell. |
| Ardrossan | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Armagh, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | SSE | 17 | 7.6 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | William McNeil. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.89 | 759.2 | 61.2 | 16.2 | ..... | SSW | 10 | 4.5 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | ..... | S. Call. |
| Birr Castle, (Parsonstown) | ..... | ..... | 29.76 | 755.9 | 52.5 | 11.4 | ..... | SSE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds..... | John Hartnup. |
| Bradford, Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | D clouds..... | J. L. E. Dreyer. |
| Bridgetown, (Barbados) | 29.89 | 759.2 | 29.92 | 760.0 | 83.0 | 28.3 | ..... | NE | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 0.12 | 3.0 | ..... | J. McLandsborough. |
| Cambridge, Observatory | ..... | ..... | 29.98 | 761.5 | 57.0 | 13.9 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. W. Roberts, A. |
| Cardington | ..... | ..... | 29.99 | 761.7 | 59.0 | 15.0 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | H. Todd. [H.C. |
| Chatham, School M. E | 29.88 | 758.9 | 30.01 | 762.2 | 62.2 | 16.8 | ..... | Calm | ..... | ..... | 0 | ..... | 4 | ..... | ..... | ..... | ..... | Blue sky..... | John McLaren. |
| Dartmoor | 28.49 | 723.6 | 29.97 | 761.2 | 49.8 | 9.9 | ..... | S W | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | Foggy ..... | Lt. W. G. Morris, R. E. |
| Donaghadee | 29.79 | 756.7 | 29.82 | 757.4 | 50 | 10.0 | ..... | SSW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Alexander Watt. |
| Dover | 30.00 | 762.0 | 30.02 | 762.5 | 54 | 12.2 | ..... | WSW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | ¾ clouded... | J. Mac Gowan. |
| Eccles, (near Manchester) | ..... | ..... | 29.91 | 759.7 | 64.0 | 17.8 | ..... | SW | 3.2 | 1.4 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | J. Costello. |
| Falmouth, Observatory | 29.73 | 755.1 | 29.96 | 761.0 | 54.7 | 12.6 | ..... | S | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | Foggy ..... | Thomas Mackereth. |
| Fort Napier, (Natal) | 27.82 | 706.6 | 30.04 | 763.0 | 74.0 | 23.3 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | The Staff. |
| Free Town, (Sierra Leone) | 29.67 | 753.6 | 29.90 | 759.4 | 89 | 31.7 | ..... | N | ..... | ..... | 0 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Salmon, A. H. C. |
| Galway, Queen's College | ..... | ..... | 29.64 | 752.8 | 54 | 12.2 | ..... | SSE | ..... | ..... | 5 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.05 | 763.3 | 30.11 | 764.8 | 62.7 | 17.1 | ..... | E | ..... | ..... | 5 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy..... | Corpl. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.61 | 752.1 | 29.82 | 757.4 | 54.9 | 12.7 | ..... | SSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | D. G. Maclean. |
| Great Yarmouth | 30.00 | 762.0 | 30.00 | 762 0 | 56 | 13.3 | ..... | SSE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | Misty..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.82 | 757.4 | 29.99 | 761.7 | 62.6 | 17.0 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Thin cloud.. | The Staff, for G. B. Airy. |
| Guernsey | 29.77 | 756.1 | 29.99 | 761.7 | 58 | 14.4 | ..... | SSW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 30.00 | 762 0 | 57 | 13.9 | ..... | S | ..... | ..... | 2 | ..... | 3k | ..... | ..... | 0.11 | 2.8 | Fine..... | M. P. Moyle. |
| Holyhead | 29.83 | 757.7 | 29.88 | 758.9 | 54 | 12.2 | ..... | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Tilston. |
| Jersey | 29.74 | 755.4 | 30.03 | 762.7 | 57.1 | 13.9 | ..... | SSE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 30.00 | 762.0 | 59.5 | 15.3 | ..... | S | 13 | 5.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Threatening | The Staff. |
| Kingstown | 29.82 | 757.4 | 29.85 | 758.2 | 53 | 11.7 | ..... | SSE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.95 | 760.7 | 57.0 | 13.9 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.97 | 761.2 | 30.04 | 763.0 | 60.0 | 15.6 | ..... | NW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Sgt. Fred. Travis, A. H. |
| Nairn | 29.66 | 753.4 | 29.76 | 755.9 | 61 | 16.1 | ..... | SW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ cloudy .... | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 29.94 | 760.5 | 79.0 | 26.1 | ..... | SE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.. .. | C. S. Duncombe. |
| Nottingham, Observatory | 29.75 | 755.6 | 29.94 | 760.5 | 61.3 | 16.3 | ..... | S | ..... | ..... | 3 | ..... | 10k | ..... | SSW | 0.603 | 0.08 | D. clouds..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.42 | 747.3 | 29.94 | 760.5 | 56.1 | 13.4 | ..... | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.98 | 761.5 | 55 | 12.8 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | Mr. Lucas. |
| Plymouth | 29.89 | 759.2 | 29.96 | 761.0 | 54 1 | 12.3 | ..... | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Merrifield. |
| Roche's Point | 29.74 | 755.4 | 29.78 | 756.4 | 52 | 11.1 | ..... | SSW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Rain and fog | W. Kennedy. |
| Saint Ann's Head | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 29.75 | 755.6 | 50.8 | 10.4 | ..... | SW | 10 | 4.5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast ..... | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Sergt. W. H. Lyne. |
| Sheffield | 29.67 | 753.6 | 29.94 | 760.5 | 62.7 | 17.1 | ..... | SSW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | Blue sky..... | W. F. Cooper. |
| Silloth Rectory | 29.85 | 758.2 | 29.88 | 758.9 | 53.6 | 12.0 | 86 | SW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0.010 | 0.25 | D. clouds..... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.51 | 749.5 | 29.92 | 760.0 | 57.8 | 14.3 | ..... | SSW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 29.68 | 753.9 | 52 | 11.1 | ..... | SSE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded... | John Sutherland. |
| Stratfield Turgiss | 29.78 | 756.4 | 30.00 | 762.0 | 58.0 | 14.4 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. C. H. Griffith, F.M |
| Thurso | ..... | ..... | 29.72 | 754.9 | 53 | 11.7 | ..... | Calm | ..... | ..... | 0 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 29.95 | 760.7 | 58 | 14.4 | ..... | S | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy..... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 29.67 | 753.6 | 55.0 | 12.8 | ..... | SSE | 33 | 14.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | The Staff. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.12 | 765.0 | 69.0 | 20.6 | 79 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Fine; clear... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.78 | 756.4 | 29.96 | 761.1 | 76.4 | 24.7 | 67 | SE | 13.0 | 5.8 | ..... | 2 | 4 | ..... | SE | 0 | 0 | Fine..... | C. Meldrum. |
| Melbourne, Observatory | 29.98 | 761.5 | 30.07 | 763.8 | 54.0 | 12.2 | 91 | E | 5 | 2.2 | ..... | 2 | 4 | ..... | ..... | 0 | 0 | Lunar halo.. | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

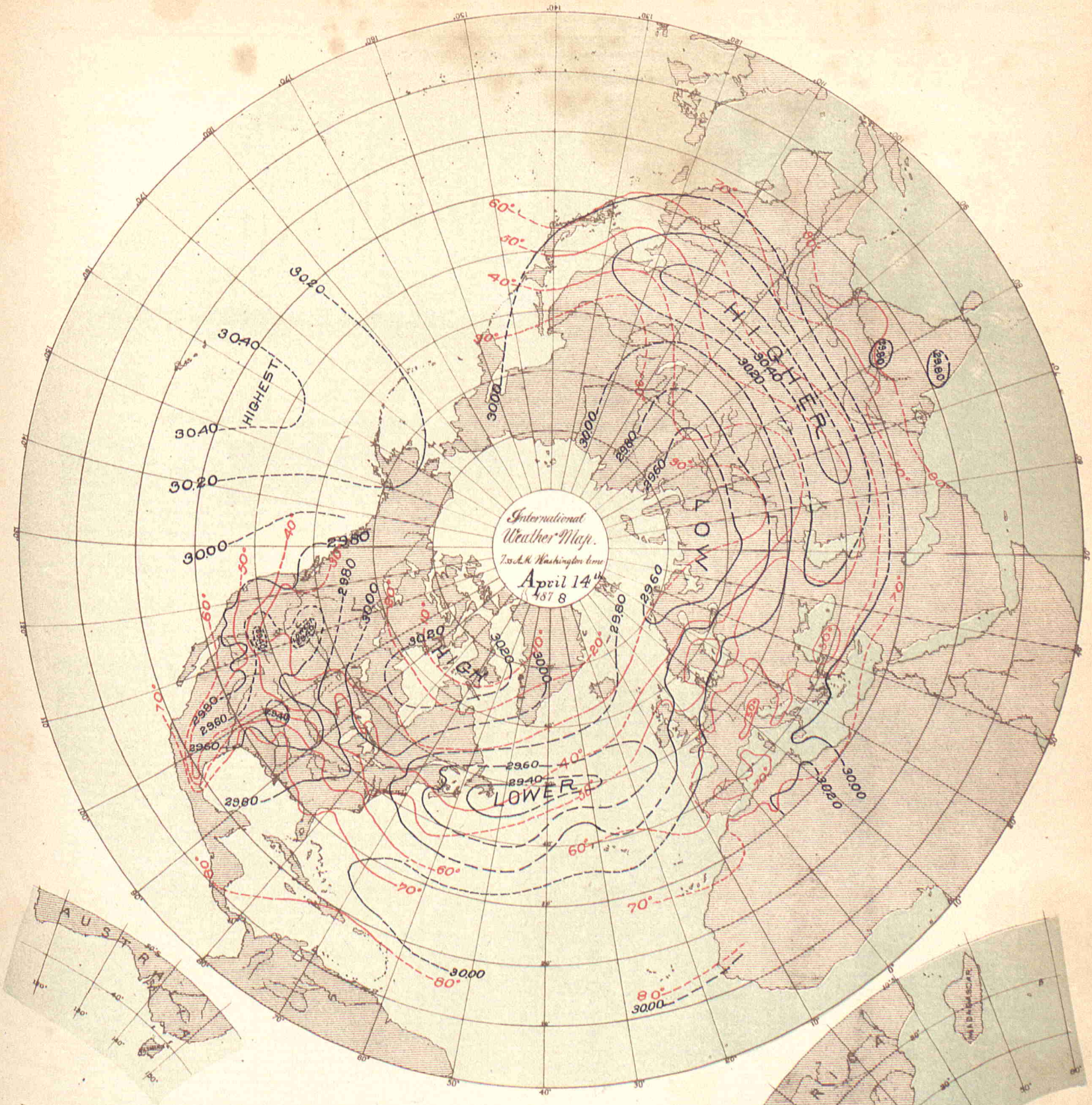
NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m.

## MARINE SERIES.

VESSELS.

| | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather | Observer |
|---|---|---|---|---|
| S. S. Algeria | ..... | ..... | ..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S, Hibernia | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | Capt. C. C. Prehn. |
| S. S. Naid, N. 39° 35′ W. 67° 20′ | 2 | SSW | Blue sky..... | [R. |
| S. S. Peruvian, N. 37° 40′, W. 72° 0′ | 3 | SSW | D. clouds..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | Capt. Alex Simpson. |
| S. S. Yorkshire | ..... | ..... | ..... | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO 220 DEVONSHIRE ST BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.18 | 665.0 | | | 69.4 | 20.8 | 92 | E | | | 1 | 1pc | 1ks | | | Inap. | Inap. | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.98 | 761.5 | 30.03 | 762.7 | 50.9 | 10.5 | 73 | SSW | | | 2 | | 9 | | | | | | |
| Fanöe | 29.98 | 761.4 | 30.00 | 761.9 | 53.1 | 11.7 | 76 | WSW | | | 4 | | 10 | | | | | | |
| Godthaab, (Greenland) | 29.99 | 761.8 | 30.04 | 762.9 | 27.9 | —2.3 | 87 | NNE | | | 4 | | 7 | | | | | | |
| Stykkisholm, (Iceland) | 29.81 | 757.2 | 29.85 | 758.3 | 27.3 | —2.6 | 89 | E | | | 7 | | 8 | | | | | | |
| Thorshavn, (Faröe) | 29.72 | 755.0 | 29.76 | 755.9 | 44.1 | 6.7 | 93 | E | | | 2 | | 10 | | | | | | |
| Vestervig | 29.78 | 756.5 | 29.95 | 760.8 | 49.6 | 9.8 | 96 | SW | | | 2 | | 10 | | | | | Raining | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.63 | 752.6 | 30.18 | 766.6 | 55.4 | 13 | 59 | SW | | | 1 | | 8 | | SW | 0 | 0 | Very cloudy | Collignon, Director. |
| Amiens, Normal School | | | | | | | | | | | | | | | | | | | Bonvarne, Director. |
| Avignon, Normal School | 30.07 | 763.8 | 30.15 | 765.8 | 72.0 | 22.2 | 35 | NNW | | | 2 | 0 | | | | 0 | 0 | Very clear.. | Mr. Giraud, Director |
| Bar-sur-Seine | 29.54 | 750.2 | 30.08 | 764.0 | 64.0 | 17.8 | 38 | SSE | | | 2 | | | | | 0 | 0 | Slightly cl'dy | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 67.6 | 19.8 | 41 | S | | | 1 | | 8 | | SW | 0 | 0 | Very cloudy | Normal School. |
| Besançon | 29.29 | 744.0 | 30.17 | 766.3 | 63.0 | 17.2 | 56 | SSE | | | 2 | | 0 | | | 0 | 0 | Clear | Normal School. |
| Bourg-en-Bresse | 29.27 | 743.5 | 30.20 | 767.1 | 66.2 | 19 | 54 | S | | | 2 | | 0 | | | 0 | 0 | Clear | Normal School. |
| Bourges, Normal School | 29.52 | 749.7 | 30.07 | 763.6 | 62.2 | 16.8 | 59 | SE | | | 2 | | 2 | | SE | 0 | 0 | Slightly cl'dy | A. Wagner, Director. |
| Brest, Naval Observatory | 29.72 | 754.8 | 29.94 | 760.4 | 59.2 | 15.1 | 82 | SW | | | 3 | | 7 | | SW | 0.118 | 3.00 | Misty | The Staff. |
| Carcassonne, Normal School | 29.66 | 753.4 | 30.07 | 763.7 | 70.2 | 21.2 | 41 | E | | | 2 | | 0 | | | 0 | 0 | Clear | Vateau, Director. |
| Caen | 29.90 | 759.5 | 29.97 | 761.3 | 65.1 | 18.4 | 51 | SE | | | 4 | | 2 | | | 0 | 0 | Slightly cl'dy | Normal School. |
| Chartres, Normal School | 29.47 | 748.5 | 30.02 | 762.6 | 65.1 | 18.4 | 96 | SSW | | | 3 | | 4 | | SW | 0 | 0 | | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.76 | 755.9 | 30.07 | 763.8 | 68.7 | 20.4 | 43 | SW | | | 2 | | 0 | | | 0 | 0 | Clear | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.71 | 729.1 | 30.07 | 763.7 | 68.2 | 20.1 | 24 | SE | | | 1 | | 0 | | | 0 | 0 | Clear | Alluard, Director. |
| Commercy, Normal School | 29.26 | 743.2 | 30.13 | 765.3 | 59.7 | 15.4 | 53 | E | | | 2 | | 1 | | E | 0 | 0 | Clear | Dr. Goulet, Director. |
| Commune de Gréasque* | 29.05 | 737.9 | 30.19 | 766.9 | 68.5 | 20.3 | 27 | W | | | 2 | | 2 | | SW | 0 | 0 | ¼ covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 29.80 | 757.0 | 30.02 | 762.4 | 66.6 | 19.2 | 42 | SE | | | 2 | | 5 | | SE | 0 | 0 | Cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.76 | 755.8 | 30.06 | 763.5 | 67.8 | 19.9 | 39 | W | | | 1 | | 2 | | SW | 0 | 0 | Slightly cl'dy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.19 | 741.3 | 30.07 | 763.6 | 55.8 | 13.2 | 58 | W | | | 1 | | 0 | | | 0 | 0 | Clear | Voudez, Director. |
| Lorient, Naval Observatory | 29.95 | 760.8 | 30.05 | 763.3 | 61.5 | 16.4 | 69 | S | | | 3 | | 5 | | S | 0.028 | 0.7 | ½ covered | T. Carré, Director. |
| Mâcon, Normal School | 29.45 | 747.9 | 30.13 | 765.2 | 59.0 | 15 | 78 | Calm | | | 0 | | 0 | | | 0 | 0 | Clear | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | 29.06 | 738.0 | 30.10 | 764.4 | 57.7 | 14.3 | 61 | E | | | 2 | | 0 | | | 0 | 0 | Clear | Normal School. |
| Nismes, Normal School | 29.95 | 760.8 | 30.15 | 765.9 | 71.6 | 22 | 53 | S | | | 1 | | 2 | | | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Orleans, Normal School | 29.65 | 753.2 | 30.02 | 762.5 | 78.8 | 26 | 37 | SE | | | 2 | | 0 | | | 0 | 0 | Clear | Bernard, Director. |
| Paris, Observatory | 29.83 | 757.7 | 30.07 | 763.7 | 67.3 | 19.6 | 35 | S | | | 1 | | 3 | | S | 0 | 0 | Slightly cl'dy | National Observatory. |
| Privas | 29.02 | 737.0 | 30.07 | 763.7 | 65.1 | 18.4 | 40 | NE | | | 2 | | 1 | | NE | 0 | 0 | Clear | Normal School |
| Puy de Dome (Summit) | | | | | | | | | | | | | | | | | | | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.02 | 762.4 | 30.05 | 763.2 | 71.6 | 22.0 | 31 | SSW | | | 1 | | 0 | | | 0 | 0 | Clear | Lt. Decante, Director. |
| Rouen, Normal School | 29.97 | 761.3 | 30.06 | 763.4 | 68.5 | 20.3 | 46 | S | | | 1 | | 0 | | | 0 | 0 | Clear | F. Lucard, Director |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | M. H. Hercouet |
| Tarbes, Normal School | 29.03 | 737.4 | 30.09 | 764.3 | 66.2 | 19 | 72 | E | | | 2 | | 0 | | | 0 | 0 | Clear | T. Hugues, Director |
| Villefranche | 29.42 | 747.3 | 30.11 | 764.9 | 71.6 | 22 | 82 | SE | | | 1 | | 2 | | SE | 0 | 0 | Slightly cl'dy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.79 | 756.6 | 29.82 | 757.3 | 81.0 | 27.2 | | | | | | | | | | | | | L'Abbé Marchési. |
| Lyons | | | 30.21 | 767.2 | 66.9 | 19.4 | | | | | | | 0 | | | 0 | 0 | Very clear.. | M. Jeys. |
| Marseilles, Observatory | | | 30.14 | 765.6 | 66.9 | 19.4 | 45 | W | | | 2 | | 0 | | | 0 | 0 | Clear | The Staff. |
| Mont-Louis | 24.93 | 633.2 | 30.24 | 768.2 | 53.8 | 12.1 | 43 | SW | 14.9 | 6.66 | | | 1 | | SW | 0 | 0 | | Mr. Falguère. |
| Nice | | | | | | | | | | | | | 0 | | | 0 | 0 | Clear | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.79 | 756.6 | 30.07 | 763.6 | 68.2 | 20.1 | 33 | S | | | 2 | | 6 | | WSW | 0 | 0 | | Marié Davy, Director |
| Perpignan | | | 30.10 | 764.4 | 69.4 | 20.8 | 35 | SE | 22.4 | 10.00 | | | 0 | | | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.58 | 573.6 | | | 53.1 | 11.7 | | N | | | 1 | | 2 | | | 0 | 0 | Clear | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.91 | 759.6 | 30.07 | 763.8 | 70.5 | 21.4 | 35 | SSE | | | 2 | 1 | | W | | 0 | 0 | | E. Renou. |
| Toulouse, Observatory | 29.37 | 745.9 | 30.09 | 764.3 | 67.6 | 19.8 | 37 | SSE | | | 3 | | 0 | | | 0 | 0 | | The Staff. |
| Tours | 29.85 | 758.2 | 30.05 | 763.2 | 68.0 | 20.0 | 39 | S | | | 2 | | 2 | | W | 0 | 0 | | C. Marquet. |
| Versailles, (near Paris) | | | 30.08 | 763.9 | 70.9 | 21.6 | 34 | S | | | 3 | | 7 | | | 0 | 0 | Light clouds | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.10 | 764.5 | 30.12 | 765.1 | 54.3 | 12.4 | 97 | E | 7.4 | 3.3 | | | 10n | | | 0.110 | 2.8 | Covered | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 29.91 | 759.8 | 30.08 | 764.1 | 65.3 | 18.5 | 46 | S | | | 1 | | 7 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.60 | 751.9 | 30.13 | 765.4 | 63.7 | 17.6 | 40 | ENE | | | 2 | | 7 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.66 | 753.4 | 30.08 | 764.2 | 65.1 | 18.4 | 54 | E | | | 1 | | 1 | | | 0 | 0 | | Albert Senz. |
| Cassel | 29.55 | 750.5 | 30.16 | 766.0 | 65.5 | 18.6 | 42 | S | | | 2 | | 2 | SW | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.91 | 759.8 | 30.08 | 763.9 | 68.9 | 20.5 | 35 | SE | | | 2 | | 7k;s | | | 0 | 0 | | Director Lose. |
| Emden | 29.99 | 761.8 | 30.03 | 762.7 | 65.8 | 18.8 | 42 | SW | | | 1 | | 1 | | | 0 | 0 | | Prof. Prestel. |
| Frankfort on the Main | 29.77 | 756.1 | 30.13 | 765.2 | 65.8 | 18.8 | 35 | NW | | | 1 | | 4 | | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 28.71 | 729.2 | 30.15 | 765.7 | 55.4 | 13.0 | 67 | SSW | | | 2 | | 0 | | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 29.98 | 761.6 | 30.06 | 763.4 | 63.5 | 17.5 | 55 | WSW | | | 2 | | 10ks | | | 0 | 0 | | Captain F. Hegemann. |
| Kiel | 30.02 | 762.6 | 30.04 | 763.0 | 61.7 | 16.5 | 51 | SW | | | 4 | | 10 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 30.00 | 761.9 | 30.08 | 764.0 | 57.2 | 14.0 | 60 | W | | | 3 | | 2 | | | 0 | 0 | | Prof. E Luther |
| Köslin | | | 30.07 | 763.8 | 57.9 | 14.4 | | Calm | | | 0 | | 0 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.71 | 754.7 | 30.13 | 765.2 | 66.2 | 19.0 | 43 | SSW | | | 2 | | 3 | WSW | | 0 | 0 | | Prof. Bruhns. |
| Memel, Naval School | 30.03 | 762.7 | 30.08 | 763.9 | 46.0 | 7.8 | 81 | WNW | | | 1 | | 1cs | | | | | | Reinbrecht von Skalweit. |
| Neufahrwasser | 30.08 | 764.0 | 30.10 | 764.4 | 55.4 | 13.0 | 53 | ENE | | | 1 | | 3 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.86 | 758.5 | 30.15 | 765.9 | 59.4 | 15.2 | 64 | NW | | | 2 | | 6 | | | 0 | 0 | | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.59 | 751.5 | 30.13 | 765.3 | 62.8 | 17.1 | 49 | E | | | 1 | | 1 | | | 0 | 0 | | Dr. Schur. |
| Stuttgart | 29.12 | 739.6 | 30.04 | 763.1 | 63.1 | 17.3 | 45 | SE | | | 1 | | 3 | S | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | 29.48 | 748.7 | 30.00 | 762.0 | 65.3 | 18.5 | 41 | W | | | 5 | | 2 | | | 0 | 0 | Foggy | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.63 | 727.2 | 30.10 | 764.5 | 61.0 | 16.1 | 43 | SW | 2 | 1 | | | 3ck | E | E | 0 | 0 | | Dr. Von Bebber. |
| Wustrow, Naval School | 30.09 | 764.3 | 30.13 | 765.3 | 57.9 | 14.4 | 65 | WNW | | | 1 | | 7 | | | 0 | 0 | | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.63 | 752.6 | 30.02 | 762.6 | 59.0 | 15.0 | | NE | | | 3.5 | | | | | | | Clear | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.91 | 759.7 | 29.96 | 761.0 | 84.5 | 29.2 | 43 | WSW | 15? | 6.7? | | | 1 | | | 0 | 0 | D. clouds | |
| Deesa | 29.46 | 748.3 | 29.94 | 760.3 | 87.1 | 30.6 | 23 | NW | | | | | | | | 0 | 0 | Blue sky | |
| Bombay | 29.83 | 757.6 | 29.87 | 758.6 | 83.7 | 28.7 | 52 | NW | 21 | 9.4 | | | 4 | W | | 0 | 0 | Misty | |
| Poona | 27.83 | 706.8 | 29.79 | 756.7 | 88.5 | 31.4 | 34 | NNW | | | | | 6 | W | SW | 0 | 0 | Dust-whirl | |
| Lahore | 29.14 | 740.0 | 29.89 | 759.1 | 73.6 | 23.1 | 57 | Calm | 3.6 | 1.6 | | | 4 | | S | 0.57 | 14.5 | Misty | |
| Belgaum | 27.32 | 694.0 | 29.81 | 757.3 | 85.7 | 29.8 | 52 | W | 16 | 7.2 | | | 1 | | | 0 | 0 | D. clouds | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.95 | 735.4 | 29.88 | 758.9 | 64.8 | 18.2 | 73 | Calm | 7.9 | 3.5 | | | 4 | | | 0.87 | 22.1 | | |
| Agra | 29.30 | 744.2 | 29.87 | 758.7 | 77.7 | 25.4 | 50 | W | | | | | 4 | SW | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.81 | 731.7 | 29.84 | 757.8 | 88.5 | 31.4 | 50 | SE | 4.6 | 2.1 | | | 4 | | E | 0.27 | 6.9 | D. clouds | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.40 | 746.8 | 29.77 | 756.0 | 88.2 | 31.2 | 34 | NNW | 3.2 | 1.4 | | | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.47 | 748.6 | 29.78 | 756.5 | 84.4 | 29.1 | 65 | Calm | 3.6 | 1.6 | | | 8 | | W | 0.18 | 4.6 | Thunder-storm | |
| Patna | 29.69 | 754.1 | 29.87 | 758.7 | 76.5 | 24.7 | 77 | E | 1.6 | 0.7 | | | 6 | E | E | 0.16 | 4.1 | D. clouds | |
| Hazaribagh | 27.87 | 707.9 | 29.92 | 760.0 | 69.0 | 20.6 | 71 | WSW | 13.4 | 6.0 | | | 8 | W | SW | 0.66 | 16.8 | Raining | |
| Cuttack | 29.82 | 757.5 | 29.90 | 759.6 | 85.0 | 29.4 | 53 | E | 3.2 | 1.4 | | | 8 | | | 0 | 0 | Thunder | |
| Calcutta (Alipore) | 29.93 | 760.3 | 29.96 | 760.9 | 79.0 | 26.1 | 69 | N | 7 | 3.1 | | | 3 | | NW | 0 | 0 | D. clouds | |
| Goalpara | 29.50 | 749.4 | 29.90 | 759.5 | 73.8 | 23.2 | 86 | Calm | 0.7 | 0.3 | | | 3 | W | | 0 | 0 | D. clouds | |
| Chittagong | 29.84 | 757.8 | 29.93 | 760.1 | 84.9 | 29.4 | 69 | Calm | 0 | 0 | | | 4 | | | 0 | 0 | | |
| Sibsagar | 29.52 | 749.9 | 29.86 | 758.4 | 82.4 | 28.0 | 72 | SSW | 1.3 | 0.6 | | | 10 | W | W | 0.02 | 0.5 | Thunder; lightn'g | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.48 | 723.4 | 29.82 | 757.4 | 89.0 | 31.7 | 10 | NW | 6.7 | 3.0 | | | | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,892.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.67 | 753.6 | 30.08 | 763.9 | 67.3 | 19.6 | 29 | N | 0.7 | 0.3 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 29.99 | 761.8 | 30.10 | 764.5 | 64.2 | 17.9 | 47 | ESE | 4.9 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.91 | 759.6 | 30.10 | 764.4 | 67.6 | 19.8 | 37 | SE | 1.3 | 0.6 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.80 | 731.6 | 30.10 | 764.6 | 66.2 | 19.0 | 51 | SW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.62 | 752.3 | 30.13 | 765.4 | 66.6 | 19.2 | ..... | W | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.23 | 742.5 | 30.13 | 765.4 | 64.0 | 17.8 | 39 | SE | 1.3 | 0.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Mondovi | 28.23 | 717.1 | 30.13 | 765.3 | 59.5 | 15.3 | 34 | NNW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Porto Maurizio | 29.92 | 759.9 | 30.14 | 765.5 | 67.3 | 19.6 | 39 | SSW | ..... | ..... | 2 | ..... | 1 | NW | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.95 | 760.6 | 30.11 | 764.9 | 65.8 | 18.8 | 35 | SE | 1.8 | 0.8 | ..... | ..... | 2 | NE | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.85 | 758.1 | 30.16 | 766.1 | 66.9 | 19.4 | 41 | NNW | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.63 | 752.5 | 30.08 | 764.0 | 68.5 | 20 3 | 33 | NE | ..... | ..... | 4 | ..... | 5 | E | ..... | 0 | 0 | ..... | Cav. F Meucci. |
| Leghorn | 30.02 | 762.5 | 30.10 | 764.6 | 62.6 | 17.0 | 62 | WNW | 3.1 | 1.4 | ..... | ..... | 1 | ..... | ..... | 0.146 | 3.7 | ..... | Prof. P. Monte. |
| Pesaro | 30.10 | 764.5 | 30.15 | 765.7 | 58.8 | 14.9 | 65 | NW | 12.5 | 5.6 | ..... | ..... | 1 | NW | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.57 | 725.6 | 30.12 | 765.0 | 56.8 | 13.8 | 61 | NNE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.07 | 761.1 | 30.08 | 763.9 | 72.0 | 22.2 | 36 | NNE | ..... | ..... | 2 | ..... | 3 | SE | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.89 | 759.3 | 30.07 | 763.7 | 68.2 | 20.1 | 44 | W | 6.3 | 2.8 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrari. |
| Naples, O. U. | 29.85 | 758.2 | 30.05 | 763.3 | 72.3 | 22.4 | 38 | SW | ..... | ..... | 2 | ..... | 7 | NW | ..... | 0.016 | 0.4 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 62.8 | 17.1 | 58 | NNE | 3.1 | 1.4 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.88 | 759.0 | 30.07 | 763.8 | 65.7 | 18.7 | 78 | Calm | ..... | ..... | 0 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.16 | 740.6 | 30.04 | 763.0 | 63.3 | 17.4 | 67 | SW | 6.9 | 3.1 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.72 | 755 0 | 29.98 | 761.4 | 60.4 | 15.8 | 71 | NE | 3.1 | 1.4 | ..... | ..... | 3 | ..... | ..... | 0.098 | 2.5 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.89 | 759.1 | 29.96 | 761.0 | 60.3 | 15.7 | 78 | NE | ..... | ..... | 4 | ..... | 7 | NNE | ..... | 0.028 | 0.7 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.52 | 749.8 | 30.08 | 763.9 | 69.4 | 20.8 | 45 | SW | 3.8 | 1.7 | ..... | ..... | 4 | SW | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nagasaki | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Tokei (Yeddo) | 29.94 | 760.5 | 30.01 | 762.2 | 60.1 | 15.6 | 67 | WNW | 3.5 | 1.6 | ..... | ..... | 10s | ..... | ..... | 0.165 | 4.19 | Cloudy | The Observatory. |
| Tokei (Yeddo) University | 29.89 | 759.2 | 29.99 | 761.6 | 60.3 | 15.7 | 97 | NW | 3 | 1.3 | ..... | ..... | 10n | ..... | ..... | 0.102 | 2.6 | Wet | Prof. P. V. Veeder. |

Note.—The data are published as given. The rain-fall at the Obsezvatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 65.3 | 18.5 | 23 | N | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | L. Castillo, A. E. |
| Guadalajara | 24.95 | 633.7 | 30.00 | 762.0 | 43.7 | 6.5 | 62 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | Prof. L. Perez. |
| Guanajuato | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 56.8 | 13.8 | 48 | NW | 0.9 | 0.4 | ..... | 2c | 0 | SW | ..... | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico | 23.00 | 584.2 | 29.44 | 747.8 | 57.9 | 14.6 | 22 | Calm | 0 | 0 | ..... | 2c | 3k | ..... | ..... | 0 | 0 | Hazy | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 52.3 | 11.3 | 59 | Calm | 0 | 0 | ..... | 1c | 0 | SW | ..... | 0 | 0 | Clear | M. V. de Leon, M. E. |
| Puebla | 23.27 | 591.1 | 29.99 | 761.8 | 46.8 | 8.2 | 58 | E | ..... | ..... | ..... | 4c | 5n | ..... | ..... | 0 | 0 | Cloudy | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. F. R. Bayly. |
| San Luis Potosi | 29.59 | 751.7 | 29.61 | 752.0 | 77.0 | 25 0 | 77 | S | 11.0 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | G. Barroeta, M. D |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | 29.65 | 753.1 | 29.68 | 753.9 | 76.1 | 24.5 | 88 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | ..... | ..... | ..... | ..... | 50.0 | 10.0 | 60 | S | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | P. Spina. [M.M. D. D |
| Morelia | 23.25 | 590.7 | 30.04 | 762.9 | 48.0 | 8 9 | 46 | NNE | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | M. Tena, F. L. Param. |
| Durango | 23.92 | 607.5 | ..... | ..... | 46.4 | 8.0 | 60 | S | 0.9 | 0.4 | ..... | 0 | 1 | ..... | NW | 0 | 0 | Clear | M. V. de Leon, C. E. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,284.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.07 | 763.7 | 30.07 | 763.7 | 65.8 | 18.8 | ..... | W | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 29.99 | 761.8 | 30.05 | 763.2 | 63.0 | 17.2 | ..... | SW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... |
| Helder | 30.02 | 762.5 | 30.02 | 762.5 | 56.3 | 13.5 | ..... | SSW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... |
| Hellevoetsluis | 30.06 | 763.4 | 30.06 | 763.4 | 67.3 | 19.6 | 59 | WSW | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Utrecht | 30.02 | 762.4 | 30.07 | 763 6 | 68.0 | 20.0 | 42 | SSW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Light cloudy | H. v d Brink. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; tor Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.86 | 758.5 | 29.92 | 759.9 | 48.9 | 9.4 | 45 | S | 11.2 | 5.0 | ..... | ..... | 8 | ..... | ..... | 0.433 | 11.0 | Raining..... | |
| Brönö | 29.72 | 754.9 | 29.76 | 755.9 | 38.8 | 3.8 | 75 | SW | 27 | 12 | ..... | ..... | 10 | ..... | ..... | 0.118 | 3.0 | Light rain... | |
| Christiania | 29.75 | 755.7 | 29.90 | 759.4 | 58.1 | 14.5 | 37 | SSW | 0 | 0 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.52 | 749.7 | 29.56 | 750.8 | 33.4 | 0.8 | 82 | SW | 4 | 2 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.67 | 753.5 | 29.86 | 758.4 | 61.2 | 16.2 | 89 | W | 18.6 | 8.3 | ..... | ..... | 3 | ..... | ..... | 0.236 | 6.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.05 | 737.9 | 30.07 | 763.7 | 66.2 | 19.0 | 64 | ESE | 2.5 | 1.1 | ..... | ..... | 8 | ENE | ..... | 0.016 | 0.4 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.02 | 762.6 | 30.11 | 764.8 | 67.5 | 19.7 | 73 | SSE | 5.6 | 2.5 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.74 | 755.3 | 30.10 | 764.5 | 60.3 | 15.7 | 79 | SE | 3.8 | 1.7 | ..... | ..... | 10 | ..... | ..... | 0.004 | 0.1 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 29.87 | 758.6 | 29.94 | 760.4 | 66.9 | 19.4 | 72 | WSW | 12.5 | 5.6 | ..... | ..... | 5 | NNE | ..... | 0 | 0 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 2 | S | Blue sky... | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Rio Douro, S. 26° 58′, E. 32° 37′ | 5 | SSE | D. clouds... | J. T. d'Oliveria, Com'd't. |
| Sado, Porto Praya, Cape Verde Islands. | 2 | ENE | Blue sky..... | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 1 | W | Blue sky..... | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | F. J. Ferreira, dos Amas, Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.65 | 753.1 | 30.07 | 763.7 | 63.0 | 17.2 | 46 | WSW | 7 | 3 | ..... | ..... | 9ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.61 | 752.2 | 30.03 | 762.8 | 56.3 | 13.5 | 47 | W | 2 | 1 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 29.69 | 754.1 | 29.94 | 760.4 | 48.7 | 9.3 | 43 | W | 11 | 5 | ..... | ..... | 3c | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.80 | 756.9 | 29.82 | 757.3 | 39.4 | 4.1 | 63 | WNW | 25 | 11 | ..... | ..... | 3ck | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.35 | 745.6 | 29.68 | 753.9 | 39.2 | 4.0 | 63 | WNW | 27 | 12 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ch. Forsten. |
| Kieff | 29.41 | 747.1 | 30.06 | 763.5 | 54.3 | 12.4 | 39 | WSW | 13 | 6 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 30.09 | 764.2 | 30.16 | 766.0 | 57.6 | 14.2 | 35 | NE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.07 | 763.8 | 30.09 | 764.3 | 54.0 | 12.2 | 63 | NNE | 9 | 4 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.30 | 744.3 | 29.85 | 758.3 | 53.2 | 11.8 | 37 | SE | 13 | 6 | ..... | ..... | 3ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.89 | 759.3 | 30.10 | 764.4 | 57.0 | 13.9 | 27 | W | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.39 | 746.5 | 29.41 | 747.0 | 37.0 | 2.8 | 86 | W | 4 | 2 | ..... | ..... | 8k | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.75 | 730.2 | 30.19 | 766.8 | 50.4 | 10.2 | 71 | E | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.35 | 771.0 | 30.27 | 768.9 | 47.1 | 8.4 | 50 | SSW | 7 | 3 | ..... | ..... | 3k | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Krotkowo* | 29.34 | 745.2 | 29.81 | 757.1 | 53.2 | 11.8 | 48 | S | 7 | 3 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.47 | 748.6 | 29.75 | 755.6 | 37.0 | 2.8 | 54 | SSW | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.66 | 727.9 | 29.64 | 752.9 | 24.4 | — 4.2 | 55 | W | 27 | 12 | ..... | ..... | 5k | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 30.11 | 764.8 | 30.35 | 770.9 | 44.6 | 7.0 | 41 | NNE | 7 | 3 | ..... | ..... | 1k | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.66 | 727.9 | 30.41 | 772.5 | 45.7 | 7.6 | 93 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.33 | 745.0 | 29.87 | 758.7 | 35.1 | 1.7 | 66 | SW | 45 | 20 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing..... | Meteorological Obs. |
| Yeniseisk | 29.28 | 743.6 | 29.60 | 751.8 | 45.9 | 7.7 | 61 | SE | 16 | 7 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 30.28 | 769.0 | 30.42 | 772.6 | 45.5 | 7.5 | 74 | Calm | 0 | 0 | ..... | ..... | 1k | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.91 | 708.8 | 30.05 | 763.2 | 28.4 | — 2.0 | 62 | Calm | 0 | 0 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Vladivostock | 30.07 | 763.6 | 30.16 | 766.0 | 39.7 | 4.3 | 79 | NW | 7 | 3 | ..... | ..... | 8n | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 23.0 | — 5.0 | 71 | W | 20 | 9 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 30.02 | 762.6 | 30.13 | 765.3 | 61.2 | 16.2 | 54 | S | 4.1 | 1.83 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.02 | 762.6 | 30.08 | 764.0 | 69.4 | 20.8 | 63 | NW | 3.6 | 1.59 | ..... | 2 | 1 | W | ..... | 0 | 0 | Almost clear | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.11 | 688.6 | ..... | ..... | 70.9 | 21.6 | 69 | S | 4.5 | 2.00 | ..... | 2 | 4 | N | ..... | 0 | 0 | Clouds..... | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.85 | 707.4 | 30.01 | 762.2 | 72.3 | 22.4 | 57 | S | 4.5 | 2.00 | ..... | 0 | 7 | ..... | ..... | 0 | 0 | Cloudy..... | The Staff. |
| Murcia, Met. Obs'y | 29.96 | 761.0 | 30.11 | 764.8 | 70.2 | 21.2 | 52 | NE | 4.9 | 2.17 | ..... | 3 | 1 | WSW | ..... | 0 | 0 | Almost clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.13 | 739.8 | 30.01 | 762.3 | 63.1 | 17.3 | 66 | SW | 9.9 | 4.44 | ..... | 5 | 0 | SW | ..... | 0.020 | 0.5 | Cloudy..... | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.81 | 757.1 | 29.87 | 758.7 | 78.2 | 25.7 | 80 | ESE | 5.6 | 2.5 | ..... | 8cs | 0 | WSW | ..... | 0 | 0 | Fair..... | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 29.97 | 761.2 | 30.07 | 763.7 | 72.1 | 22.3 | 53 | ESE | 23.9 | 10.7 | ..... | 0 | 10 | ..... | E | 0.079 | 2.0 | ..... | Capt. C. Pulazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.87 | 758.6 | 29.96 | 760.9 | 80.2 | 26.8 | 82 | SE | 0 | 0 | ..... | 3c | 2k | E | SE | 0 | 0 | D. clouds..... | Leonardo de Tejeda, Chief of Engineers. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.



Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.63 | 752.7 | 29.67 | 753.7 | 39.2 | 4.0 | ..... | NW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.76 | 755 9 | 29.81 | 757.2 | 45.0 | 7.2 | 55 | WNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.82 | 757.4 | 29.87 | 758.7 | 49.6 | 9.8 | 35 | SW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.74 | 755.5 | 29.92 | 760.0 | 54.3 | 12 4 | 42 | SW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.95 | 759.4 | 29.96 | 760.9 | 45.7 | 7.6 | 67 | W | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.83 | 757.7 | 29.91 | 759.6 | 54.1 | 12.3 | 44 | SW | 9.2 | 4.1 | ..... | ..... | 1 | ..... | WSW | 0.001 | 0.02 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.72 | 729.4 | 30.14 | 765.6 | 54.0 | 12.2 | 64 | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| Zurich | 28.51 | 724.1 | 30.12 | 765.1 | 61.5 | 16.4 | 50 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +5.2 mm.; Thermometer, +0.5 cent.; Relative Humidity, +7 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.11 | 764.8 | 48.7 | 9.3 | 58 | NNE | 15 | 6.5 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stéfanidès. |
| Varna | ..... | ..... | 30.00 | 763.5 | 66.0 | 18.9 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.28 | 7. | Covered | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | Imperial Observatory. |
| Beirut, (Syria,) Lee Obs'y | 29.84 | 757.9 | 29.95 | 760.8 | 73.2 | 22.9 | 77 | WSW | ..... | ..... | 2 | ..... | 7;ks | ..... | SW | 0.06 | 1.5 | D. clouds | Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.60 | 751.8 | 29.91 | 759.7 | 39 | 3.9 | ..... | N | 4 | 1.8 | ..... | 0 | 5ks | ..... | NW | 0 | 0 | Fair | W. R. Bigg. |
| *Chatham, N B | 29.57 | 751.1 | 29.63 | 752.6 | 37 | 2.8 | 93 | N | 5 | 2.2 | ..... | ..... | 10n | ..... | N | 0.14 | 3.6 | Cloudy | G. A. Blair. |
| Charlottetown, P. E. Island | 29.46 | 748.3 | 29.60 | 749.3 | 35 | 1.7 | 97 | N | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.210 | 5.38 | Light rain | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.64 | 752.8 | 29.83 | 757.7 | 38.8 | 3 8 | 81 | NW | ..... | ..... | 1 | ..... | 9s | ..... | ..... | 0.045 | 1.15 | Cloudy | James Smith, M. A. |
| Dalhousie, N. B | 29.54 | 750.3 | 29.57 | 751.1 | 42.6 | 5.8 | 87 | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.30 | 7.6 | Cloudy | H. A. Johnson. |
| Esquimault, B. C | 29.66 | 753.4 | 29.71 | 754.6 | 35.1 | 1.7 | 100 | Calm | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Cloudy | W. H. Revis. |
| *Father Point, Quebec | 29.73 | 755.1 | 29.75 | 755.6 | 36 | 2.2 | 87 | E | 12 | 5.4 | ..... | ..... | Fog | ..... | Calm | 0.03 | 0.8 | Foggy | J. McWilliams. |
| Fredericton, N. B | 29.59 | 751.6 | 29.66 | 753.4 | 38.6 | 3.7 | 86 | N | 5 | 2.2 | ..... | ..... | 10s | ..... | ..... | 0.01 | 0.3 | Cloudy | Prof. Harrison. |
| *Fort Garry Manitoba | 29.31 | 744.5 | 30.17 | 766.3 | 29 | — 1.7 | 95 | N | 13 | 5.8 | ..... | 5k | 5ks | N | N | 0 | 0 | Cloudy | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.84 | 732.5 | 29.96 | 761.0 | 40 | 4.4 | 82 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | ..... | ..... | ..... | James Grant. |
| *Halifax, N. S | 29.33 | 745.0 | 29.46 | 748.3 | 38 | 3.3 | 96 | N | 12 | 5.4 | ..... | ..... | 10n | ..... | N | 0.031 | 0.79 | Light rain | F. Allison, M. A. |
| Hamilton, Ontario | 29.60 | 751.8 | 29.97 | 761.2 | 46.2 | 7.9 | 71 | SW | ..... | ..... | 1 | 0 | ..... | ..... | ..... | 0 | 0 | Clear | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.28 | 743.7 | 29.30 | 744.2 | 36 | 2.2 | 100 | NE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.38 | 9.7 | Rain & fog | E. Weedon. |
| *Kingston, Ontario | 29.55 | 750.6 | 29.88 | 758.9 | 43 | 6.1 | 69 | N | 6 | 2.7 | ..... | 2k | 0 | N | ..... | Inap | Inap. | Clear | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.30 | 744.2 | 29.34 | 745.2 | 34.6 | 1.4 | ..... | N | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0.18 | 4.6 | Foggy | C. H. Rigby. |
| *Montreal, Quebec | 29.60 | 751.8 | 29.80 | 756.9 | 41 | 5.6 | 87 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | ..... | 0.30 | 7.6 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.28 | 743.7 | 29.99 | 761.7 | 38 | 3.3 | 72 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Rev. R. Mosley. |
| Peterboro, Ontario | 29.16 | 740.7 | 29.92 | 760.0 | 45.5 | 7.5 | 62 | N | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.25 | 742.9 | 29.94 | 760.5 | 40 | 4.4 | 93 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | H. Morgan. |
| Port Hastings, N. S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Peter Grant. |
| Port Stanley, Ontario | 29.29 | 744.0 | 29.94 | 760.5 | 43 | 6.1 | 78 | N | 8 | 3.6 | ..... | 8k | 0 | W | ..... | 0 | 0 | Fair | M. Payne. |
| *Quebec, Quebec | 29.45 | 748.0 | 29.77 | 756.1 | 36 | 2.2 | 95 | Calm | ..... | ..... | 0 | ..... | Fog | ..... | ..... | 0.02 | 0.5 | Foggy | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.52 | 749.8 | 30.00 | 762.0 | 35 | 1.7 | 58 | NW | 8 | 3.6 | ..... | 0 | 5s | ..... | NW | 0.07 | 1.8 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 29.56 | 750.8 | 29.61 | 752.1 | 39 | 3.9 | 80 | N | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | Dr. Gove. |
| St. John, N. B | 29.43 | 747.5 | 29.60 | 751.8 | 35 | 1.7 | 95 | N | 9 | 4.0 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Overcast | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.25 | 742.9 | 29.98 | 761.5 | 42 | 5.6 | 83 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | K. Stewart. |
| Stayner, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. J. Cole. |
| Stratford, Ontario | 28.65 | 727.7 | 29.96 | 761.0 | 36.4 | 2.4 | 86 | E | 5 | 2.2 | ..... | 1c | 1s | ..... | ..... | 0 | 0 | Clear | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.58 | 746.2 | 29.41 | 747.0 | 38 | 3.3 | 98 | N | 4 | 1.8 | ..... | ..... | 10n | ..... | N | 0.09 | 2.3 | Light rain | T. C. Hill. |
| *Toronto, Ontario | 29.58 | 751.3 | 29.97 | 761.2 | 43 | 6.1 | 67 | N | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Magnetic Observatory |
| Windsor, N. S | 29.42 | 747.3 | 29.51 | 749.5 | 37.6 | 3.1 | 95 | NW | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Fair | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 37.0 | 2.8 | 100 | E | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0.03 | 0.8 | Foggy | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Byt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.56 | 750.8 | 29.78 | 756.4 | 49 | 9.4 | 57 | NW | 18 | 8.0 | ..... | 1k | 0 | NW | ..... | 0 | 0 | Clear | |
| Alpena, Michigan | 29.34 | 745.2 | 30.00 | 762.0 | 41 | 5.0 | 73 | NE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Atlantic City, New Jersey | 29.87 | 758.7 | 29.89 | 759.2 | 52 | 11.1 | 72 | W | 9 | 4.0 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Augusta, Georgia | 29.69 | 754.1 | 29.87 | 758.7 | 63 | 17.2 | 67 | S | 4 | 1.8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Baltimore, Maryland | 29.89 | 759.2 | 29.94 | 760.5 | 54 | 12.2 | 49 | NW | 4 | 1.8 | ..... | 0 | sn;ks | ..... | NW | Inap. | Inap. | Light rain | |
| Barnegat, New Jersey | 29.83 | 757.7 | 29.86 | 758.4 | 53 | 11.7 | 54 | NW | 14 | 6.3 | ..... | 2c | 0 | NW | ..... | 0 | 0 | Clear | |
| Bismarck, Dakota | 28.08 | 713.2 | 29.91 | 760.5 | 35 | 1.7 | 80 | E | 20 | 8.9 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Boise City, Idaho | 28.84 | 681.7 | 29.72 | 754.9 | 23 | — 5.0 | 73 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Boston, Massachusetts | 29.55 | 750.6 | 29.70 | 754.4 | 48 | 8.9 | 56 | NW | 17 | 7.6 | ..... | 5k | 0 | NW | ..... | 0.02 | 0.5 | Fair | |
| Bracketville, Texas | 28.51 | 724.1 | 29.48 | 748.8 | 71 | 21.7 | 90 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Breckenridge, Minnesota | 28.87 | 733.3 | 29.88 | 758.9 | 40 | 4.4 | 73 | E | 17 | 7.6 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Brownsville, Texas | 29.55 | 750.6 | 29.62 | 752.3 | 74 | 23.3 | 90 | SE | 2 | 0.9 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Buffalo, New York | 29.22 | 742.2 | 29.93 | 760.2 | 42 | 5.6 | 91 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 69 | 20.6 | 19 | SW | ..... | ..... | 1 | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Burlington, Vermont | 29.54 | 750.3 | 29.80 | 756.9 | 41 | 5.0 | 73 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | NW | 0.31 | 7.9 | Cloudy | |
| Cairo, Illinois | 29.27 | 743.4 | 29.65 | 753.1 | 62 | 16 7 | 88 | SE | 10 | 4.5 | ..... | ..... | 10n | ..... | S | 0.39 | 9.9 | Light rain | |
| Camp Grant, Arizona | 24.93 | 633.2 | 29.73 | 755.1 | 48 | 8.9 | 49 | E | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | 26.47 | 672.3 | 29.96 | 761.0 | 49 | 9.4 | 78 | S | ..... | ..... | 2 | ..... | 10s | ..... | SW | 0.07 | 1.8 | Cloudy | |
| Campo, California | 27.16 | 689.8 | 29.73 | 755.1 | 40 | 4.4 | 91 | SW | 11 | 4.9 | ..... | ..... | 10s | ..... | SW | 0.24 | 6.1 | Cloudy | |
| Cape Hatteras, N. Carolina | 29.85 | 758.2 | 29.86 | 758.4 | 61 | 16.1 | 88 | NE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Henry, Virginia | 29.84 | 757.9 | 29.87 | 758.7 | 56 | 13.3 | 63 | NE | 14 | 6.3 | ..... | 5k | 0 | W | ..... | 0 | 0 | Fair | |
| Cape Lookout, N. Carolina | 29.85 | 758.2 | 29.86 | 758.4 | 63 | 17.2 | 83 | W | 6 | 2.7 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair | |
| Cape May, New Jersey | 29.88 | 758.9 | 29.91 | 759.7 | 52 | 11.1 | 79 | NW | 9 | 4.0 | ..... | 5c | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 29.86 | 758.4 | 29.92 | 760.0 | 67 | 19.4 | 84 | SW | 5 | 2.2 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Cloudy | |
| Cheyenne, Wyoming | 23.66 | 601.0 | 29.60 | 751.8 | 29 | — 1.7 | 89 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Threatening | |
| Chicago, Illinois | 29.14 | 740.1 | 29.83 | 757.7 | 44 | 6.7 | 76 | NE | 14 | 6.3 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Cincinnati Ohio | 29.12 | 739.6 | 29.76 | 755.9 | 55 | 12.8 | 74 | E | 4 | 1.8 | ..... | 10c | 0 | W | ..... | 0.09 | 2.3 | Cloudy | |
| Cleveland, Ohio | 29.20 | 741.7 | 29.92 | 760.0 | 47 | 8.3 | 48 | E | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Concho, Texas | 27.72 | 704.1 | 29.28 | 743.7 | 64 | 17.8 | 29 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.16 | 740.7 | 29.69 | 751.8 | 70 | 21.1 | 85 | S | 6 | 2.7 | ..... | 2k | 0 | S | ..... | 0 | 0 | Fair | |
| Davenport, Iowa | 29.11 | 739.4 | 29.75 | 755.6 | 42 | 5.6 | 83 | NE | 15 | 6.7 | ..... | ..... | 10n | ..... | Calm | 0.48 | 12.2 | Light rain | |
| Deadwood, Dakota | 25.10 | 637.5 | ..... | ..... | 27 | — 2.8 | 88 | SE | 1 | 0.4 | ..... | ..... | 10n | ..... | ..... | 0.40 | 10.2 | Light snow | |
| Denison, Texas | 28.78 | 731.0 | 29.52 | 749.8 | 71 | 21.7 | 85 | S | 16 | 7.2 | ..... | ..... | 10ks | ..... | S | Inap. | Inap. | Cloudy | |
| Denver, Colorado | 24.42 | 620.3 | 29.64 | 752.8 | 40 | 4.4 | 65 | E | 4 | 1.8 | ..... | 10cs | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Detroit, Michigan | 29.26 | 743.2 | 29.93 | 760.2 | 45 | 7.2 | 68 | E | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dodge City, Kansas | 27.02 | 686.3 | 29.29 | 744.0 | 39 | 3.9 | 82 | N | 28 | 12.5 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Dubuque, Iowa | 29.09 | 738.9 | 29.79 | 756.7 | 42 | 5.6 | 83 | E | 9 | 4.0 | ..... | ..... | 10n | ..... | E | 0.13 | 3.3 | Light rain | |
| Duluth, Minnesota | 29.32 | 744.7 | 30.00 | 762.0 | 39 | 3.9 | 82 | NE | 22 | 9.8 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Eagle Pass, Texas | 28.79 | 731.3 | 29.49 | 749.0 | 72 | 22.2 | 89 | SE | 4 | 1.8 | ..... | 10k | 0 | S | ..... | 0 | 0 | Cloudy | |
| Eastport, Maine | 29.51 | 749.5 | 29.57 | 751.1 | 39 | 3.9 | 82 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | N | 0.30 | 7.6 | Cloudy | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 68 | 20.6 | 38 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.20 | 741.7 | 29.91 | 759.7 | 45 | 7.2 | 68 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Escanaba, Michigan | 29.37 | 746.0 | 30.05 | 763.3 | 33 | 0.6 | 79 | N | 17 | 7.6 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Florence, Arizona | 28.09 | 713.5 | 29.69 | 754.1 | 65 | 18.3 | 49 | SW | 5 | 2.2 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Fort Bayard, New Mexico | 23.76 | 603.5 | 29.96 | 761.0 | 45 | 7.2 | 46 | NW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.20 | 640.1 | ..... | ..... | 47 | 8.3 | 41 | SE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 24.93 | 633.2 | 29.80 | 756.2 | 62 | 16.7 | 33 | SW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 28.95 | 735.3 | 29.45 | 748.0 | 65 | 18.3 | 82 | S | 10 | 4.5 | ..... | 2k | 2ks | SW | S | 0.32 | 8.1 | Fair | |
| Fort Griffin, Texas | 28.31 | 719.1 | 29.52 | 749.8 | 63 | 17.2 | 83 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 30.16 | 766.1 | 30.20 | 767.1 | 5 | —15.0 | 100 | NE | 5 | 2.2 | ..... | ..... | 10cs | ..... | N | 0 | 0 | Cloudy | |
| Fort Sill, Indian Territory | 28.30 | 718.8 | 29.35 | 745.5 | 61 | 16.1 | 66 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.45 | 11.4 | Clear | |
| Galveston, Texas | 29.71 | 752.1 | 29.95 | 753.1 | 71 | 21.7 | 100 | S | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | Inap. | Inap. | Foggy | |
| Grand Haven, Michigan | 29.26 | 743.2 | 29.90 | 759.4 | 48 | 8.9 | 70 | E | 14 | 6.3 | ..... | ..... | 10ks | ..... | E | 0 | 0 | Cloudy | |
| Indianapolis, Indiana | 28.96 | 735.6 | 29.72 | 754.9 | 53 | 11.7 | 86 | E | 4 | 1.8 | ..... | ..... | 4s | ..... | Calm | 0.67 | 17.0 | Cloudy | |
| Indianola, Texas | 29.03 | 752.6 | 29.66 | 753.4 | 73 | 22.8 | 95 | S | 7 | 3.1 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Cloudy | |
| Jacksboro, Texas | 28.44 | 722.4 | 29.51 | 749.5 | 64 | 17.8 | 78 | SW | 12 | 5.4 | ..... | ..... | ..... | ..... | ..... | Inap. | Inap. | Clear | |
| Jacksonville, Florida | 29.88 | 758.9 | 29.90 | 759.4 | 72 | 22.2 | 76 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | |
| Keokuk, Iowa | 28.99 | 736.3 | 29.60 | 751.8 | 44 | 6.7 | 84 | NE | 11 | 4.9 | ..... | 2k | 0 | NW | ..... | 0 | 0 | Fair | |
| Key West, Florida | 29.85 | 758.2 | 29.88 | 758.9 | 79 | 26.1 | 82 | SE | 10 | 4.5 | ..... | ..... | 10s | Calm | ..... | 0.34 | 8.6 | Cloudy | |
| Kittyhawk, North Carolina | 29.84 | 757.9 | 29.87 | 758.7 | 58 | 14.4 | 76 | NE | 14 | 6.3 | ..... | 5c;k | 0 | W;SE | ..... | 0 | 0 | Fair | |
| Knoxville, Tennessee | 28.84 | 732.5 | 29.82 | 757.4 | 57 | 13.9 | 75 | Calm | 0 | 0 | ..... | 2c | 0 | W | ..... | 0 | 0 | Fair | |
| La Crosse, Wisconsin | 29.08 | 738.6 | 29.82 | 757.4 | 44 | 6.7 | 76 | NE | 4 | 1.8 | ..... | 10ck | 0 | SW | ..... | 0 | 0 | Cloudy | |
| La Mesilla, New Mexico | 25.82 | 655.8 | 29.97 | 761.2 | 48 | 8.9 | 54 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Laredo, Texas | 29.18 | 741.2 | 29.50 | 749.5 | 75 | 23.9 | 77 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 28.70 | 729.0 | 29.51 | 749.5 | 51 | 10.6 | 86 | NE | 12 | 5.4 | ..... | ..... | 10ks | ..... | NE | 0.43 | 10.9 | Cloudy | |
| Los Angeles, California | 29.37 | 746.0 | 29.71 | 754.6 | 49 | 9.4 | 78 | E | 9 | 4.0 | ..... | 0 | 5s | ..... | SE | 0 | 0 | Fair | |
| Louisville, Kentucky | 29.18 | 741.2 | 29.72 | 754.9 | 57 | 13.9 | 58 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Lynchburg, Virginia | 29.21 | 741.9 | 29.88 | 758.9 | 60 | 15.6 | 49 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.35 | 745.5 | 30.06 | 763.5 | 42 | 5.6 | 74 | NE | 12 | 5.4 | ..... | ..... | 10ks | ..... | N | 0 | 0 | Cloudy | |
| Mason, Texas | 28.04 | 712.2 | 29.76 | 754.4 | 68 | 20.0 | 84 | SW | 3 | 1.3 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Memphis, Tennessee | 29.43 | 747.5 | 29.73 | 755.1 | 62 | 16.7 | 94 | NW | 4 | 1.8 | ..... | ..... | 10n | ..... | NW | 0.70 | 17.8 | Light rain | |
| Milwaukee, Wisconsin | 29.14 | 740.1 | 29.87 | 758 7 | 43 | 6.1 | 83 | NE | 18 | 8.0 | ..... | 10cs | 0 | ..... | ..... | 0 | 0 | Cloudy | |
| Mobile, Alabama | 29.74 | 755.4 | 29.79 | 756.7 | 70 | 21.1 | 93 | SE | 4 | 1.8 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Montgomery, Alabama | 29.60 | 751.8 | 29.83 | 757.7 | 63.5 | 17.5 | 69 | SE | 2 | 0.9 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Morgantown, West Virginia | 28.82 | 732.0 | 29.86 | 758.4 | 50 | 10.0 | 65 | NE | 2 | 0.9 | ..... | ..... | 10s | ..... | SW | 0.01 | 0.3 | Cloudy | |
| Mt. Washington, N. H. | 23.36 | 593.3 | 29.72 | 754.9 | 19 | — 7.2 | 100 | NW | 36 | 16.1 | ..... | ..... | 10n | ..... | NW | 2.03 | 51.6 | Light snow | |
| Nashville, Tennessee | 29.29 | 741.7 | 29.72 | 754.9 | 59 | 15.0 | 70 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| New Haven, Connecticut | 29.67 | 753.6 | 29.79 | 756.7 | 52 | 11.1 | 60 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New London, Connecticut | 29.71 | 754.6 | 29.76 | 755.9 | 52 | 11.1 | 54 | NW | 17 | 7.6 | ..... | 1k | 0 | N | ..... | Inap | Inap. | Clear | |
| New Orleans, Louisiana | 29.67 | 753.6 | 29.72 | 754.9 | 71 | 21.7 | 75 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Newport, Rhode Island | 29.67 | 753.6 | 29.75 | 754.9 | 49 | 9.4 | 64 | W | 16 | 7.2 | ..... | 0 | 7k;s | ..... | W | 0 | 0 | Fair | |
| New York, New York | 29.63 | 752.6 | 29.81 | 756.9 | 50 | 10.0 | 51 | NW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Norfolk, Virginia | 29.83 | 757.7 | 29.89 | 759.2 | 58 | 14.4 | 48 | NE | 7 | 3.1 | ..... | 8k | 0 | N | ..... | 0 | 0 | Fair | |
| North Platte, Nebraska | 26.80 | 680.7 | 29.39 | 746.5 | 34 | 1.1 | 90 | NE | 12 | 5.4 | ..... | ..... | 10s | ..... | NE | Inap. | Inap. | Cloudy | |
| Olympia, Washington Ter. | 29.67 | 753.6 | 29.71 | 754.6 | 34 | 1.1 | 90 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | S | 0.04 | 1.0 | Cloudy | |
| Omaha, Nebraska | 28.52 | 724.4 | 29.59 | 751.6 | 43 | 6.1 | 92 | NE | 8 | 3.6 | ..... | ..... | 10n | ..... | NE | 0.03 | 0.8 | Light rain | |
| Oswego, New York | 29.59 | 751.6 | 29.91 | 759.7 | 42 | 5.6 | 83 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pembina, Dakota | 29.14 | 740.1 | 30.01 | 762.2 | 27 | — 2.8 | 88 | N | 6 | 2.7 | ..... | 8ck | 0 | Calm | ..... | 0 | 0 | Fair | |
| Philadelphia, Pennsylvania | 29.86 | 758.4 | 29.91 | 759.7 | 51 | 10.6 | 45 | NW | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Phœnix, Arizona | 28.52 | 724.4 | 30.28 | 769.1 | 59 | 15.0 | 54 | W | ..... | ..... | 1 | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Pike's Peak, Colorado | 17.38 | 441.4 | 29.59 | 751.6 | 8 | —13.3 | 33 | SW | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0.48 | 12.2 | Clear | |
| Pioche, Nevada | 23.57 | 598.7 | 29.34 | 745.2 | 29 | — 1.7 | 94 | NW | 7 | 3.1 | ..... | ..... | 10n | ..... | Calm | 0.01 | 0.3 | Light snow | |
| Pittsburg, Pennsylvania | 29.10 | 739.1 | 29.91 | 759.7 | 43 | 6.1 | 75 | NE | 2 | 0.9 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Port Huron, Michigan | 29.27 | 743.4 | 29.94 | 760.5 | 40 | 4.4 | 91 | NE | 9 | 4.0 | ..... | 0 | 5ks | ..... | NE | 0 | 0 | Fair | |
| Portland, Maine | 29.63 | 752.6 | 29.68 | 753.9 | 47 | 8.3 | 62 | NW | 10 | 4.5 | ..... | 10k | Haze | NW | ..... | 0.01 | 0.3 | Cloudy | |
| Portland, Oregon | 29.70 | 754.4 | 29.81 | 757.2 | 35 | 1.7 | 99 | NE | 3 | 1.3 | ..... | ..... | 8ks | ..... | SW | 0.01 | 0.3 | Cloudy | |
| Prescott, Arizona | 24.47 | 621.5 | 29.83 | 757.7 | 42 | 5.6 | 83 | S | 22 | 9.8 | ..... | 0 | 5s | ..... | SW | 0.07 | 1.8 | Fair | |
| Punta Rassa, Florida | 29.88 | 758.9 | 29.90 | 759.4 | 76 | 21.4 | 86 | SE | 12 | 5.4 | ..... | 5ck | 0 | SW | ..... | 0 | 0 | Fair | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Red Bluff, California** | 29.37 | 746.0 | 29.73 | 755.1 | 41 | 5.0 | 57 | N | 3 | 1.3 | .. | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| **Rochester, New York** | 29.28 | 743.7 | 29.90 | 759.4 | 45 | 7.2 | 68 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Roseburg, Oregon** | 29.22 | 742.2 | 29.81 | 757.2 | 30 | — 1.1 | 94 | Calm | 0 | 0 | ..... | 0 | 2s | ..... | Calm | 0.01 | 0.3 | Clear | |
| **Sacramento, California** | 29.65 | 753.1 | 29.73 | 755.1 | 46 | 7.8 | 77 | E | 4 | 1.8 | ..... | 8k | 0 | SW | ..... | 0 | 0 | Cloudy | |
| **St. Louis, Missouri** | 29.05 | 737.9 | 29.60 | 751.8 | 57 | 13.9 | 81 | SE | 10 | 4.5 | ..... | ..... | 10n | ..... | Calm | 0.12 | 3.0 | Light rain | |
| **St. Marks, Florida** | 29.85 | 758.2 | 29.86 | 758.4 | 61 | 16.1 | 94 | Calm | 0 | 0 | ..... | 5k | 0 | W | ..... | 0 | 0 | Fair | |
| **St. Paul, Minnesota** | 29.00 | 736.6 | 29.84 | 757.9 | 41 | 5.0 | 65 | E | 4 | 1.8 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| **Salt Lake City, Utah** | 25.22 | 640.6 | 29.55 | 750.6 | 31 | — 0.6 | 100 | NW | 1 | 0.4 | ..... | ..... | 10n | ..... | Calm | 0.87 | 22.1 | Heavy snow | |
| **San Antonio, Texas** | 28.95 | 735.3 | 29.51 | 749.5 | 70 | 21.1 | 95 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| **San Diego, California** | 29.77 | 756.1 | 29.84 | 757.9 | 54 | 12.2 | 61 | W | 20 | 8.9 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| **Sandusky, Ohio** | 29.25 | 742.9 | 29.92 | 760.0 | 59 | 10.0 | 65 | E | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Sandy Hook, New Jersey** | 29.80 | 756.9 | 29.83 | 757.7 | 53 | 11.7 | 61 | NW | 22 | 9.8 | ..... | 1c | 0 | NW | ..... | 0 | 0 | Clear | |
| **San Francisco, California** | 29.72 | 754.9 | 29.78 | 756.4 | 45 | 7.2 | 61 | W | 10 | 4.5 | ..... | 1c | Haze | Calm | Calm | 0 | 0 | Clear | |
| **Santa Fé, New Mexico** | 22.98 | 583.7 | 29.52 | 749.8 | 37 | 2.8 | 45 | E | 1 | 0.4 | ..... | 1k | 0 | Calm | ..... | 0 | 0 | Clear | |
| **Savannah, Georgia** | 29.80 | 756.9 | 29.89 | 759.2 | 70 | 21.1 | 75 | SW | 5 | 2.2 | ..... | 2ck | Haze | W | ..... | 0 | 0 | Fair | |
| **Shreveport, Louisiana** | 29.44 | 747.8 | 29.64 | 752.8 | 71 | 21.7 | 95 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| **Smithville, North Carolina** | 29.86 | 758.4 | 29.89 | 759.2 | 65 | 18.3 | 89 | SW | 8 | 3.6 | ..... | 8cs | 0 | W | ..... | 0 | 0 | Cloudy | |
| **Springfield, Massachusetts** | 29.58 | 751.3 | 29.71 | 754.6 | 51 | 10.6 | 59 | NW | 12 | 5.4 | ..... | 10k | 0 | NW | ..... | 0 | 0 | Cloudy | |
| **Stockton, Texas** | 26.66 | 677.2 | 29.66 | 753.4 | 48 | 8.9 | 42 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Cloudy | |
| **Thatcher's Island, Mass** | 29.65 | 753.1 | 29.70 | 754.4 | 45 | 7.2 | 76 | NW | 20 | 8.9 | ..... | 5k | 0 | NW | ..... | 0 | 0 | Clear | |
| **Toledo, Ohio,** | 29.21 | 741.9 | 29.88 | 758.9 | 50 | 10.0 | 58 | NE | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | |
| **Tucson, Arizona** | ..... | ..... | ..... | ..... | 56 | 13.3 | 81 | SE | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Tybee Island, Georgia** | 29.87 | 758.7 | 29.90 | 759.4 | 68 | 20.0 | 90 | S | 4 | 1.8 | ..... | 5k | 0 | SW | ..... | 0 | 0 | Fair | |
| **Umatilla, Oregon** | 29.45 | 748.0 | ..... | ..... | 26 | — 3.3 | 88 | SE | 4 | 1.8 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair | |
| **Vicksburg, Mississippi** | 29.48 | 748.8 | 29.72 | 754.9 | 69 | 20.6 | 85 | S | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | Inap | Inap | Clear | |
| **Virginia City, Montana** | 23.77 | 603.8 | 29.25 | 742.9 | 27 | — 2.8 | 76 | SW | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| **Visalia, California** | 29.41 | 747.0 | 29.78 | 756.4 | 43 | 6.1 | 75 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| **Washington, D. C.** | 29.84 | 757.9 | 29.96 | 761.0 | 50 | 10.0 | 65 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| **Wickenburg, Arizona** | ..... | ..... | ..... | ..... | 55 | 12.8 | 62 | SW | ..... | ..... | 2 | 0 | 10n | ..... | W | 0.02 | 0.5 | Light rain | |
| **Wilmington, N. Carolina** | 29.78 | 756.4 | 29.86 | 758.4 | 65 | 18.3 | 73 | SW | 10 | 4.5 | ..... | 8k | 8ks | ..... | W | 0 | 0 | Threatening | |
| **Winnemucca, Nevada** | 29.29 | 642.4 | 29.65 | 753.1 | 24 | — 4.4 | 87 | SW | 6 | 2.7 | ..... | 10k | 0 | SW | ..... | 0 | 0 | Fair | |
| **Wood's Holl, Mass** | 29.65 | 753.1 | 29.70 | 754.4 | 52 | 11.1 | 72 | NW | 15 | 6.7 | ..... | 5ck | 0 | SW | ..... | 0.05 | 1.3 | Cloudy | |
| **Yankton, Dakota** | 28.49 | 723.6 | 29.80 | 756.9 | 34 | 1.1 | 89 | NW | 15 | 6.7 | ..... | 5ck | 0 | NW | ..... | 0 | 0 | Fair | |
| **Yuma, Arizona** | 29.58 | 751.3 | 29.74 | 755.4 | 54 | 12.2 | 49 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.93 | 23.6 | Cloudy | |
| SUB-SERIES. | | | | | | | | W | 25 | 11.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **St. Paul's Island, Alaska** | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| **York Factory, B. A** | 30.18 | 766.6 | 30.24 | 768.1 | 15.0 | — 9.4 | 91 | NE | 8 | 3.6 | ..... | 3k | 0 | SW | ..... | 0 | 0 | Fair | J. Fortescue, W. Wood. |
| **Havana, Cuba, W. I** | 29.83 | 757.7 | 29.85 | 758.2 | 79 | 26.1 | 82 | SE | 2.4 | 1.1 | ..... | 8ck | 0 | NW | ..... | 0 | 0 | Fair | Chas. Hasselbrink. |
| **Kingston, Jamaica, W. I** | 30.06 | 763.5 | 30.07 | 763.8 | 79 | 26.1 | 86 | Calm | 0 | 0 | ..... | 8c | 0 | Calm | ..... | 0 | 0 | ..... | James Gall. |
| **Navassa, W. I** | 29.82 | 757.4 | 29.90 | 759.4 | 80.5 | 26.9 | ..... | SE | 3 | 1.3 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | F. M. Everett. |
| **Paramaribo, D. Guiana, S. A** | 29.97 | 761.2 | 29.97 | 761.2 | 84 | 28.9 | 79 | E | ..... | ..... | 1 | 4c | 5k | E | ..... | 0.065 | 1.65 | Fair | C. J. Hering. |
| **Batavia, Dutch Guiana, S. A** | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| **Medellin, Colombia, S. A** | 25.21 | 640.3 | ..... | ..... | 69.0 | 20.6 | 78 | Calm | ..... | ..... | 0 | 7cs | 3ks | ..... | ..... | 0.10 | 2.5 | ..... | Dr. H. Groot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Thomas Herran. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,560 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,550 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 1—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.70 | 754.4 | 43 | 6.1 | 42 | 5.6 | 58 | NW | 7 | 3.1 | ..... | ..... | 8 | ..... | W | 0 | 0 | ..... | ..... | Cloudy..... | |
| Navy Yard, Pensacola, Fla. | 30.11 | 764.8 | 64 | 17.8 | 65 | 18.3 | 89 | WSW | 5 | 2.2 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Navy Yard, Portsmouth, N.H. | 29.75 | 755.6 | 64 | 17.8 | 45 | 7.2 | 84 | NW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan | 30.00* | 760.2* | 68.5 | 20.3 | 65 | 18.3 | 94 | SW | ..... | ..... | 3 | ..... | 10n | ..... | WSW | 0.09 | 2.3 | ..... | ..... | Light rain.. | |
| Adams, Panama | 29.94 | 760.5 | 84 | 28.9 | 83 | 28.3 | 91 | NNE | ..... | ..... | 0–1 | ..... | 5 | ..... | ..... | ..... | ..... | Smooth | ..... | Hazy..... | |
| Alliance, Villefranche, France | 30.14‡ | 765.5‡ | ..... | ..... | 68 | 20.0 | 56 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | None | ..... | Clear. ..... | |
| Ashuelot, Shanghai, China | 30.14 | 765.5 | 58 | 14.4 | 55 | 12.8 | 93 | ENE | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Drizzling..... | |
| Canonicus, New Orleans, La. | 29.84 | 757.9 | 51 | 10.6 | 70 | 21.1 | 90 | SSE | ..... | ..... | 2 | ..... | 3 | ..... | N&W | ..... | ..... | ..... | ..... | Clear..... | |
| Colorado, New York, N. Y. | 29.79‡ | 756.7‡ | ..... | ..... | 53 | 11.7 | 48 | NW | 18 | 8.0 | ..... | ..... | 2 | ..... | W | 0 | 0 | ..... | ..... | Hazy..... | |
| Constellation, N. 43° 41′ W. 35° 10′ | 29.82‡ | 757.4‡ | ..... | ..... | 57 | 13.9 | 87 | NNW | ..... | ..... | 3 | ..... | 2 | ..... | NNW | ..... | ..... | Smooth | NNW | Clear..... | |
| Constitution, Havre, France | 30.00‡ | 762.0‡ | ..... | ..... | 65 | 18.3 | 63 | S | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Overcast..... | |
| Despatch, Constantinople, Turkey. | 30.14‡ | 765.5‡ | ..... | ..... | 51 | 10.6 | 86 | NE | ..... | ..... | 4 | ..... | 8 | ..... | NE | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Enterprise, Norfolk, Va | 29.92‡ | 760.0‡ | ..... | ..... | 59 | 15.0 | 65 | ENE | ..... | ..... | 1 | ..... | 8 | ..... | W | ..... | ..... | ..... | ..... | Clear?..... | |
| Franklin, Norfolk, Va. | 29.99 | 761.7 | 62 | 16.7 | 60 | 15 6 | 50 | ENE | 1 | 0.4 | ..... | ..... | 8 | ..... | NW | 0 | 0 | ..... | ..... | D. clouds..... | |
| Gettysburg Valetta, Malta | 29.94‡ | 760.5‡ | ..... | ..... | 62 | 16.7 | 100 | NNW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | Blank | Blank | ..... | ..... | Clear..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.02 | 762.5 | 78 | 25.6 | 77 | 25.0 | 69 | NE | ..... | ..... | 5 | ..... | 0 | ..... | ..... | ..... | ..... | Ground | NW | Clear..... | |
| Hartford, Montevideo, Uraguay | 29.62 | 752.3 | 67 | 19.4 | 67 | 19.4 | 74 | NNW | 18 | 8.0 | ..... | ..... | 8 | ..... | NNW | 0 | 0 | Smooth | ..... | Cloudy..... | |
| Marion, Smyrna, Turkey | 29.95 | 760.7 | 64 | 17.8 | 65 | 18.3 | 63 | WNW | ..... | ..... | 3 | ..... | 5 | ..... | NE | 0 | 0 | Chop | NW | Fair..... | |
| Michigan, Erie, Pa. | 29.56 | 750.8 | 74 | 23.3 | 46 | 7.8 | 62 | S | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Monocacy, Shanghai, China | 30.13‡ | 765.3‡ | ..... | ..... | 55 | 12.8 | 87 | E | ..... | ..... | 2 | ..... | 10 | ..... | SE | ..... | ..... | ..... | ..... | Overcast..... | |
| New Hampshire, Port Royal, S. C. | 30.10† | 764.5† | ..... | ..... | 68 | 20.0 | 95 | W | 7 | 3.1 | ..... | ..... | 2 | ..... | NW | ..... | ..... | ..... | ..... | Fair ..... | |
| Omaha, N. 27° 15′ W. 69° 45′ | 30.04* | 763.0* | 76 | 24.4 | 71 | 21.7 | 90 | NE | 1 | 0.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Bright..... | |
| Onward, Callao, Peru | 30.04† | 763.0† | ..... | ..... | 70 | 21.1 | 85 | S | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, Pensacola, Fla. | 29.81‡ | 757.2‡ | ..... | ..... | 71 | 21.7 | 95 | E | ..... | ..... | 3 | ..... | 2 | ..... | WSW | ..... | ..... | ..... | ..... | Clear ..... | |
| Palos, Shanghai, China | 30.16* | 766.1* | 63 | 17.2 | 55 | 12.8 | 100 | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Rainy..... | |
| Pensacola, N. 31° 30′, W. 158° 50′ | 30.49 | 774.4 | 65 | 18.3 | 61 | 16.1 | 88 | E | 20 | 8.9 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | Smooth | ENE | Cloudy..... | |
| Plymouth, Norfolk, Va. | 29.89‡ | 759.2‡ | ..... | ..... | 60 | 15.6 | 55 | NNE | ..... | ..... | 1–2 | ..... | 10 | ..... | W | ..... | ..... | ..... | ..... | Cloudy..... | |
| Powhatan, Norfolk, Va. | 29.89‡ | 759.2‡ | ..... | ..... | 59 | 15.0 | 94 | NE | 3.0 | 1.3 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | ..... | Pleasant..... | |
| Ranger. Takao, Formosa | 30.18* | 766.6* | ..... | ..... | 70 | 21.1 | 90 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | NE | ..... | ..... | Smooth | ..... | D. clouds..... | |
| Rio Bravo, Brownsville, Texas. | 29.60 | 751.8 | 74 | 23.3 | 73 | 22.8 | 95 | SE | ..... | ..... | 1 | ..... | 10 | ..... | S | ..... | ..... | ..... | ..... | Cloudy..... | |
| Santee, Annapolis, Md | 29.94‡ | 760.5‡ | ..... | ..... | 53 | 11.7 | 54 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | Inap. | Inap. | ..... | ..... | Sprinkling.. | |
| Saratoga, Washington, D. C. | 29.86* | 758.4* | ..... | ..... | 54 | 12.2 | 100 | NE | ..... | ..... | 1 | ..... | 9 | ..... | NE | Slight | Slight | ..... | ..... | Cloudy..... | |
| St. Louis, League Island, Pa | 29.88 | 758.9 | 59 | 15.0 | 53 | 11.7 | 54 | NW | 6 | 2.7 | ..... | ..... | 8 | ..... | WNW | 0 | 0 | ..... | ..... | Fair..... | |
| Supply, Havre, France | 30.10 | 764.5 | 60 | 15.6 | 63 | 17.2 | 67 | SSW | ..... | ..... | 1 | ..... | 5? | ..... | SSW | ..... | ..... | ..... | ..... | Clear?..... | |
| Swatara, N. 11° 38′, W. 80° 38′ | 29.96 | 761.0 | 84 | 28.9 | 82 | 27.8 | 83 | NNE | ..... | ..... | 1 | ..... | 5 | ..... | N&E | ..... | ..... | Smooth | ..... | Fair ..... | |
| Tennessee, Aden, Arabia | 29.97* | 761.2* | 84 | 28.9 | 84 | 28.9 | 71 | SE | 4 | 1.8 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | Mod'ate | SSE | D. clouds..... | |
| Trenton, Villefranche, France | 30.12‡ | 765.0‡ | ..... | ..... | 69 | 20.6 | 65 | S | ..... | ..... | 0–1 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Hazy..... | |
| Tuscarora, Acapulco, Mexico | 29.66 | 753.4 | 75 | 23.9 | 76 | 24.4 | 77 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | Calm | ..... | ..... | Smooth | ..... | Clear. ..... | |
| Vandalia, Villefranche, France. | 30.15‡ | 765.8‡ | ..... | ..... | 66 | 18.9 | 59 | SSW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Wabash, Boston, Mass. | 29.66‡ | 753.4‡ | ..... | ..... | 49 | 9.4 | 63 | NW | 14 | 6.3 | ..... | ..... | 2 | ..... | Calm | 0.04 | 1.0 | ..... | ..... | Fair..... | |
| Wyoming, N. 42° 15′, W. 44° 22′ | 30.70‡* | 779.8‡* | ..... | ..... | 59 | 15.0 | 70 | WNW | ..... | ..... | 5 | ..... | 6 | ..... | ESE | ..... | ..... | Mod'ate | W | D. clouds..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity.

*It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Panama, N. 47° 25′, W. 124° 46′ | | | 29.72* | 754.9* | | | | N | | | 2 | | 6? | | N | Mod'ate | NW | Clear? | Capt. Cobb. |
| S. S. City of Peking, N. 37° 31′, E. 175° 13′ | | | 29.89† | 759.2† | 44 | 6.7 | 84 | NW | 48.0 | 21.5 | | | 10 | | NW | Rough | NW | Hailing | Capt. Seabury. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Tokio, N. 33° 13′, W. 177° 50′ | | | | | 57 | 13.9 | | W | | | 7 | | | | | Rough | WNW | Bluesky | Capt. Dearborn. |
| S. S. Colima, N. 33° 58′, W. 120° 23′ | | | 29.82† | 757.4† | 56 | 13.3 | 57 | NNW | | | 5 | | 7 | | W | Short; irregular. | WNW | D. clouds | Capt. Maury. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, N. 50° 44′, W. 23° 44′ | | | 29.41† | 747.0† | 52 | 11.1 | ?? | SW | | | 5 | | 5cs | | WSW | Con-fused | NE&sw | Fair | Capt. W. H. Thompson. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic, N. 50° 54′, W. 14° 43′ | | | 29.52† | 749.8† | 55 | 12.8 | 93 | S | | | 4 | | | | S | Light | SW | D. clouds | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Aneroid.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic | | | | | | | | | | | | | | | | | | | |
| S. S. Gaelic, N. 25° 4′, E. 125° 41′ | | | 29.90† | 759.4† | 66 | 18.9 | ?? | NE | | | 5 | | n | | NE | Swell | NE | Foggy | Capt. John Metcalf. |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | | Capt. W. H. Kidley |
| | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | Character. | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, N. 38° 47′, W. 73° 17′ | | | 29.94* | 760.5* | 54 | 12.2 | 100 | WNW | | | 6 | | 0 | | | 8mooth | | Clear | Captain Sargent. |
| S. S. Ohio, Philadelphia, Pa | | | 29.84 | 757.9 | 57 | 13.9 | 100 | W | | | 2 | | 0 | | | | | Clear | Captain Morrison. |
| S. S. Pennsylvania, N. 47° 44′, W. 24° 58′ | | | 29.54* | 750.3* | 57 | 13.9 | 100 | NW | | | 2 | | 9 | | NW | Light | SW | Cloudy | Captain Harris. |

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Corrected for temperature and elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |

**ALLAN LINE MARINE SERIES.**

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Scandinavian | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.)**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Tenants Harbor | | | 29.57 | 751.1 | 44 | 6.7 | 84 | N | 8 | 3.6 | | | 10s | | N | Short sea. | | Overcast | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 30.35 | 770.9 | 4.5 | —15.3 | 93 | SW | 5.7 | 2.5 | | 0 | 0 | | | | | Clear | O. T. Sherman. |

Note.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assq.) Chief Signal Officer. U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 15, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

## ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.19 | 766.9 | 66.9 | 19.4 | 84 | NE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Dr. Ollive. |
| Nemours | ..... | ..... | 30.17 | 766 2 | 64 4 | 18.0 | 76 | E | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Michel. |
| Algiers | ..... | ..... | 30.12 | 765.1 | 67.3 | 19.6 | 76 | NE | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair.. | Towiliere. |
| La Calle | ..... | ..... | 30.16 | 766.1 | 66.2 | 19.0 | 69 | E | ..... | ..... | 7 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Boulangeot. |
| Tunis | ..... | ..... | 30.30 | 769.5 | 70.0 | 21.1 | 58 | W | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Jacques. |
| Sfax | ..... | ..... | 30.32 | 770.0 | 66.2 | 19.0 | ..... | N | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Gau. |
| Saida | ..... | ..... | 30.17 | 766.3 | 75.9 | 24.4 | ..... | SSW | ..... | ..... | 8 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Herbin. |
| Tebessa | ..... | ..... | 30.18 | 766.6 | ..... | ..... | ..... | NE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Watrin. |
| Geriville | ..... | ..... | 30.21 | 767.2 | 66.6 | 19.2 | 79 | E | ..... | ..... | 8 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Lemaillot. |
| Laghouat | ..... | ..... | 30.32 | 770.0 | 69.8 | 21.0 | 34 | E | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Bertrand. |
| Biskra | ..... | ..... | 30.19 | 766.8 | 73.8 | 23.2 | 45 | NW | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

## AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.58 | 751.4 | 30.12 | 765.0 | 69.1 | 20.6 | 36 | SW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.34 | 745.2 | 30.09 | 764.3 | 68.0 | 20.0 | 43 | WSW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbiski. |
| Eperies | 29.20 | 741.6 | 30.06 | 763.5 | 64.4 | 18.0 | 48 | S | ..... | ..... | 2 | ..... | 9k;8 | ..... | ..... | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.87 | 733.4 | 30.10 | 764.5 | 65.5 | 18.6 | 43 | S | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.68 | 728.4 | 30.08 | 764.0 | 61.9 | 16.6 | 46 | ENE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.76 | 730.4 | 30.08 | 763.9 | 63.0 | 17.2 | 41 | NW | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner |
| Lemberg | 29.06 | 738.1 | 30.04 | 763.0 | 58.3 | 14.6 | 74 | W | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0.157 | 4.0 | ..... | Dr. T. Stanecki. |
| Pola | 30.06 | 763.5 | 30.17 | 766.3 | 67.5 | 19.7 | 57 | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.67 | 753.6 | 30.13 | 765.2 | 64.6 | 18.1 | 46 | NW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.85 | 758.1 | 30.12 | 765.0 | 66.2 | 19.0 | 51 | Calm | ..... | ..... | 0 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Karl Stancel. |
| Trieste | 30.09 | 764.2 | 30.19 | 766.8 | 63.7 | 17.6 | 65 | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | P. Busin. |
| Vienna | 29.39 | 746.6 | 30.09 | 764.3 | 70.5 | 21.4 | 32 | SW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

## BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.59 | 726.2 | 30.07 | 763.6 | 66.7 | 19.3 | 28 | SW | ..... | ..... | 0 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. M. Passau. |
| Brussels | 29.85 | 758.1 | 30.04 | 763.1 | 65.7 | 18.7 | 60 | SW | ..... | ..... | 1 | 1 | 4 | W? | SW | 0.016 | 0.4 | ..... | Royal Observatory. |
| Furnes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Maeseyck | 29.94 | 760.5 | 30.07 | 763.7 | 69.3 | 20.7 | 52 | SW | ..... | ..... | 1 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | M. E. de Cae. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

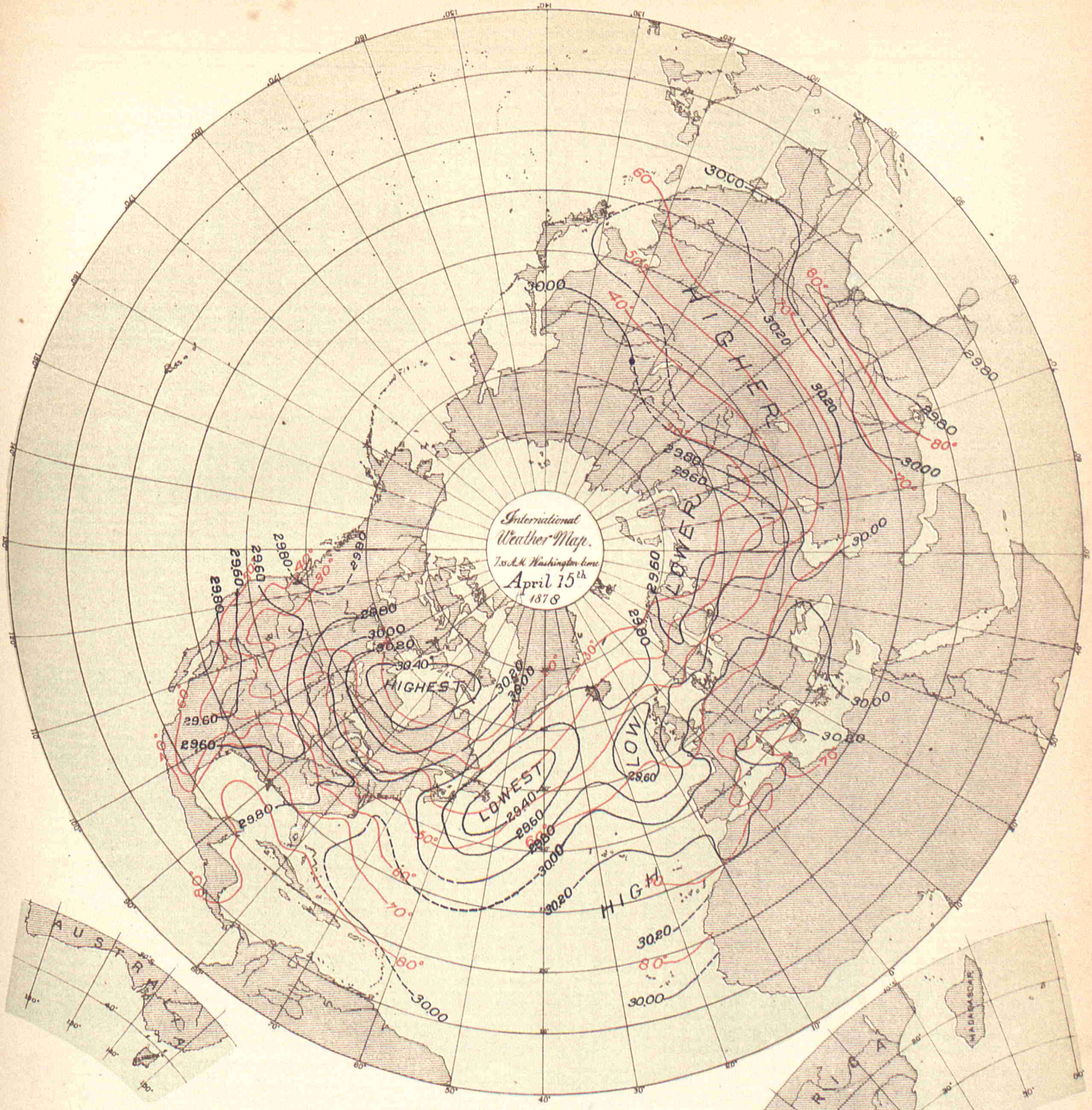
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.67 | 753.6 | 29.76 | 755.9 | 58.7 | 14.8 | ..... | SW | 17 | 7.6 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | Blue sky.. ... | W. B swell. |
| Ardrossan | 29.81 | 757.2 | 29.83 | 757.7 | 50 | 10.0 | ..... | SW | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | William McNeil. |
| Armagh, Observatory | ..... | ..... | ..... | ..... | ..... | ..... | ..... | S | 17 | 7.6 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Squally ..... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.94 | 760.5 | 60.5 | 15.8 | ..... | SW | 15 | 6.7 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | Overcast..... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 29.84 | 757.9 | 59.0 | 15.0 | ..... | S | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds.... | J. L. E. Dreyer. |
| Bradford, Yorkshire | 29.54 | 750.3 | 29.94 | 760.5 | 57.3 | 14.1 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast..... | J. McLandsborough. |
| Bridgetown, (Barbados) | 29.91 | 759.7 | 29.94 | 760.5 | 84.0 | 28.9 | ..... | NE | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 30.01 | 762.2 | 60.9 | 16.1 | ..... | SW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | H. Todd. [H. C. |
| Cardington | ..... | ..... | 30.03 | 762.7 | 62.0 | 16.7 | ..... | N | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | John McLaren. |
| Chatham, School M. E. | 29.92 | 760.0 | 30.05 | 763.3 | 57.2 | 14.0 | ..... | SW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | Lt. W. G. Morris, R. E. |
| Dartmoor | 28.45 | 722.6 | 29.92 | 760.0 | 50.0 | 10.0 | ..... | SW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | Alexander Watt. |
| Donaghadee | 29.82 | 757.4 | 29.84 | 757.9 | 56 | 13.3 | ..... | SSW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds .... | J. Mac Gowan. |
| Dover | 30.02 | 762.5 | 30.05 | 763.3 | 56 | 13.3 | ..... | W | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ¼ clouded... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.94 | 760.5 | 57.5 | 14.2 | ..... | SSW | ..... | ..... | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Thomas Mackereth. |
| Falmouth, Observatory | 29.78 | 756.4 | 30.01 | 762.2 | 54.3 | 12.4 | ..... | SSE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy ..... | The Staff. |
| Fort Napier, (Natal) | 27.88 | 708.1 | 30.10 | 764.5 | 70.5 | 21.4 | ..... | SE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.66 | 753.4 | 29.89 | 759.2 | 89.0 | 31.7 | ..... | N | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | |
| Galway, Queen's College | ..... | ..... | 29.70 | 754.4 | 56 | 13.3 | ..... | SSW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.10 | 764.5 | 30.16 | 766.1 | 64.2 | 17.9 | ..... | E | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | Corpl. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.63 | 752.6 | 29.83 | 757.7 | 53.3 | 11.8 | ..... | SSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | D. G. Maclean. |
| Great Yarmouth | 30.01 | 762.2 | 30.02 | 762.5 | 59 | 15.0 | ..... | WSW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.86 | 758.4 | 30.03 | 762.7 | 58.6 | 14.8 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | The Staff, for G. B. Airy. |
| Guernsey | 29.83 | 757.7 | 30.05 | 763.3 | 58 | 14.4 | ..... | SSW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 30.01 | 762.2 | 59 | 15.0 | ..... | S | ..... | ..... | 4 | ..... | 4k | ..... | ..... | 0 | 0 | Fine ..... | M. P. Moyle. |
| Holyhead | 29.89 | 759.2 | 29.95 | 760.7 | 54 | 12.2 | ..... | SSW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | John Tilston. |
| Jersey | 29.81 | 757.2 | 30.10 | 764.5 | 58.0 | 14 4 | ..... | SW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 30.03 | 762.7 | 58.0 | 14.4 | ..... | SSW | 14 | 6.3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Threatening | The Staff. |
| Kingstown | 29.87 | 758.7 | 29.90 | 759.4 | 57 | 13.9 | ..... | S | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 30.01 | 762.2 | 58.0 | 14.4 | ..... | SW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 30.14 | 765.5 | 30.21 | 767.3 | 66.0 | 18.9 | ..... | N | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | Sgt. Fred. Travis, A. H. |
| Nairn | 29.64 | 752.8 | 29.73 | 755.1 | 55 | 12.8 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 29.94 | 760.5 | 79.2 | 26.2 | ..... | SE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 29.80 | 756.9 | 29.99 | 761.7 | 61.3 | 16.3 | ..... | SSW | ..... | ..... | 3 | ..... | 7k;ks | ..... | SW | 0 | 0 | D. clouds..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.47 | 748.5 | 29.99 | 761.7 | 57.2 | 14.0 | ..... | SSW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.02 | 762.5 | 60 | 15.6 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | Mr. Lucas. |
| Plymouth | 29.95 | 760.7 | 30.02 | 762.5 | 55.0 | 12.8 | ..... | SSE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Merrifield. |
| Roche's Point | 29.84 | 757.9 | 29.88 | 758.9 | 53 | 11.7 | ..... | SSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Dull ..... | W. Kennedy. |
| Saint Ann's Head | 29.81 | 757.2 | 29.97 | 761.2 | 52 | 11.1 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | John C. Walker. |
| Sandwick Manse, (Orkneys. | ..... | ..... | 29.72 | 754.9 | 51.4 | 10.8 | ..... | SW | 12 | 5.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 30.08 | 764.0 | 56.0 | 13.3 | ..... | NE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Sergt. W. H. Lyne. |
| Sheffield | 29.70 | 754.4 | 29.97 | 761.2 | 63.7 | 17.6 | ..... | SW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | D. clouds..... | W. F. Cooper. |
| Silloth Rectory | 29.85 | 758.2 | 29.88 | 758.9 | 55.7 | 13.2 | 81 | SW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0.035 | 0.89 | D. clouds..... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.55 | 750.6 | 29.95 | 760.7 | 57.2 | 14.0 | ..... | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 29.66 | 753.4 | 52 | 11.1 | ..... | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Sutherland. |
| Stratfield Turgiss | 29.84 | 757.9 | 30.05 | 763.3 | 55.8 | 13.2 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. C. H. Griffith, F.M |
| Thurso | ..... | ..... | 29.70 | 754.4 | 54 | 12.2 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Showery..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 29.99 | 761.7 | 57 | 13.9 | ..... | S | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy..... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 29.77 | 756.1 | 55.7 | 13.2 | ..... | SSE | 36 | 16.1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.41 | 772.4 | 68.0 | 20.0 | 87 | W | ..... | ..... | 3 | ..... | 2k | ..... | ..... | 0 | 0 | Fine; clear.. | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.70 | 754.4 | 29.89 | 759.2 | 78.4 | 25.8 | 67 | SE | 22.0 | 9.8 | ..... | 4 | 2 | ..... | SE | 0.09 | 2.3 | Squally..... | C. Meldrum. |
| Melbourne, Observatory | 29.98 | 761.5 | 30.07 | 763.8 | 59.0 | 15.0 | 87 | SW | 3 | 1.3 | ..... | ..... | 7 | ..... | NW | 0 | 0 | Fine..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m.

| Marine Series. Vessels. | Sea or swell. Height scale 0--9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|
| S. S. Algeria | ..... | ..... | ..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | Capt. C. C. Prehn. |
| S. S. Naid, N. 40° 45′ W. 60° 50′ | 3 | SSW.; WNW | D. clouds..... | Capt. J. Smith. [R. |
| S. S. Peruvian, N. 40° 20′, W. 67° 0′ | Smooth | ..... | Blue sky..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire | ..... | ..... | ..... | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.18 | 665.0 | | | 72.0 | 22 2 | 89 | NE | | | 1 | 2pc | 2k;s | | | Inap. | Inap. | Storm | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.85 | 758.3 | 29.90 | 759.5 | 60.1 | 15.6 | 67 | WNW | | | 2 | | 7 | | | | | | |
| Fanöe | 29.91 | 759.6 | 29.93 | 760.1 | 52.3 | 11.3 | 87 | WSW | | | 4 | | 2 | | | | | | |
| Godthaab, (Greenland) | 29.81 | 757.1 | 29.85 | 758.2 | 21.0 | — 6.1 | 85 | NNE | | | 6 | | 0 | | | | | | |
| Stykkisholm, (Iceland) | 29.90 | 759.5 | 29.95 | 760.6 | 20.3 | — 6.5 | 95 | NE | | | 6 | | 10 | | | | | | |
| Thorshavn, (Faröe) | 29.69 | 754.2 | 29.73 | 755.1 | 41.4 | 5.2 | 94 | ENE | | | 4 | | 10 | | | | | Snowing | |
| Vestervig | 29.68 | 753.8 | 29.85 | 758.1 | 50.0 | 10.0 | 92 | SW | | | 4 | | 6 | | | | | Raining | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.63 | 752.6 | 30.18 | 766.6 | 55.4 | 13 | 55 | SW | | | 1 | | 5 | | SW | 0.012 | 0.3 | Cloudy | Collignon, Director. |
| Amiens, Normal School | | | | | | | | | | | | | | | | | | | Bonvarne, Director. |
| Avignon, Normal School | 30.14 | 765.6 | 30.22 | 767.6 | 73.0 | 22.8 | 35 | SW | | | 2 | | 0 | | | 0 | 0 | Very clear | Mr. Giraud, Director |
| Bar-sur-Seine | 29.52 | 749.8 | 30.06 | 763.5 | 70.5 | 21.4 | 41 | S | | | 2 | 5c | | | | 0 | 0 | Cloudy | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 66.7 | 19.3 | 52 | S | | | 2 | | 5 | | SSW | 0 | 0 | Cloudy | Normal School. |
| Besançon | 29.17 | 741.0 | 30.06 | 763.4 | 57.2 | 14 | 62 | SSW | | | 2 | | 10 | | | 0 | 0 | Covered | Normal School. |
| Bourg-en-Bresse | 29.31 | 744.4 | 30.23 | 767.9 | 66.2 | 19 | 37 | S | | | 4 | | 10n | | E | 0 | 0 | Covered | Normal School. |
| Bourges, Normal School | 29.49 | 749.1 | 30.03 | 762.8 | 68.5 | 20.3 | 55 | NE | | | 2 | | 5 | | E | 0 | 0 | Cloudy | A. Wagner, Director. |
| Brest, Naval Observatory | 29.75 | 755.7 | 29.97 | 761.3 | 57.7 | 14.3 | 84 | SSW | | | 2 | | 10 | | SSW | 0.030 | 0.75 | Misty | The Staff. |
| Carcassonne, Normal School | 29.67 | 753.6 | 30.08 | 764.0 | 66.6 | 19.2 | 54 | E | | | 4 | | 5 | | SW | 0 | 0 | Cloudy | Vateau, Director. |
| Caen | 29.98 | 761.5 | 30.05 | 763.3 | 65.8 | 18.8 | 59 | SW | | | 1 | | 0 | | | 0 | 0 | Very clear | Normal School. |
| Chartres, Normal School | 29.52 | 749.9 | 30.07 | 763.8 | 70.9 | 21.6 | 77 | SSW | | | 2 | | 0 | | | 0 | 0 | Clear | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.71 | 754.6 | 30.02 | 762.6 | 74.3 | 23.5 | 43 | S | | | 2 | | 5ck | | S | 0 | 0 | Cloudy | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.76 | 730.4 | 30.07 | 763.6 | 73.8 | 23.2 | 23 | SE | | | 1 | | 2 | | | 0 | 0 | Slightly cl'dy | Alluard, Director. |
| Commercy, Normal School | 29.25 | 742.9 | 30.11 | 764.9 | 63.3 | 17.4 | 59 | SE | | | 1 | | 5 | | SE | 0 | 0 | Cloudy | Dr. Goulet, Director. |
| Commune de Gréasque* | 29.15 | 740.5 | 30.30 | 769.5 | 67.5 | 19.7 | 34 | SW | | | 2 | | 2 | | SW | 0 | 0 | ¾ covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 29.77 | 756.2 | 29.98 | 761.6 | 68.0 | 20.0 | 44 | SW | | | 2 | | 8 | | SW | 0 | 0 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.75 | 755.7 | 30.06 | 763.4 | 65.1 | 18.4 | 60 | NW | | | 1 | | 2 | | W | 0 | 0 | Slightly cl'dy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.19 | 741.4 | 30.09 | 764.2 | 67.3 | 19.6 | 32 | S | | | 6 | | 2 | | N | 0 | 0 | Slightly cl'dy | Voudez, Director. |
| Lorient, Naval Observatory | 29.99 | 761.7 | 30.09 | 764.2 | 61.2 | 16.2 | 77 | SSE | | | 2 | | 8 | | S | 0 | 0 | ¾ covered | T. Carré, Director. |
| Mâcon, Normal School | 29.46 | 748.2 | 30.13 | 765.4 | 63.3 | 17.4 | 68 | NE | | | 2 | | 5 | | SW | 0 | 0 | Cloudy | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | 29.09 | 738.9 | 30.13 | 765.2 | 60.3 | 15.7 | 41 | S | | | 6 | | 0 | | | 0 | 0 | Clear | Normal School. |
| Nismes, Normal School | 30.02 | 762.4 | 30.22 | 767.5 | 71.2 | 21.8 | 48 | NW | | | 1 | | 5 | | NW | 0 | 0 | Cloudy | Boyer, Director. |
| Orleans, Normal School | 29.65 | 753.2 | 30.02 | 762.5 | 76.1 | 24.5 | 50 | E | | | 1 | | 2 | | N | 0 | 0 | Slightly cl'dy | Bernard, Director. |
| Paris, Observatory | 29.82 | 757.4 | 30.05 | 763.3 | 68.9 | 20.5 | 38 | W | | | 1 | | 3 | | WSW | 0 | 0 | Slightly cl'dy | National Observatory. |
| Privas | 29.13 | 739.9 | 30.19 | 766.8 | 63.3 | 17.4 | 41 | NE | | | 2 | | 5 | | NE | 0 | 0 | Cloudy | Normal School |
| Puy de Dome (Summit) | | | | | | | | | | | | | | | | | | | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.03 | 762.8 | 30.07 | 763.6 | 68.0 | 20.0 | 51 | NW | | | 3 | | 2 | | NW | 0.20 | 5 | ¾ covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.98 | 761.4 | 30.06 | 763.5 | 70.2 | 21.1 | 49 | S | | | 1 | | 0 | | | 0 | 0 | Clear | F. Lucard, Director |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | M. H. Hercouet |
| Tarbes, Normal School | 29.03 | 737.3 | 30.08 | 764.1 | 68.0 | 20 | 55 | E | | | 2 | | 10 | | | 0 | 0 | Covered | T. Hugues, Director |
| Villefranche | 29.43 | 747.6 | 30.13 | 765.2 | 72.0 | 22.2 | 43 | SE | | | 3 | | 2 | | | 0 | 0 | Slightly cl'dy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.76 | 756.0 | 29.79 | 756.7 | 81.0 | 27 2 | | | | | | | | | | 0 | 0 | | L'Abbé Marchési. |
| Lyons | | | 30.18 | 766.6 | 69.3 | 20.7 | | | | | | | 3 | | | 0 | 0 | | M. Jeys. |
| Marseilles, Observatory | | | 30.23 | 767.7 | 68.9 | 20.5 | 30 | SW | | | 2 | | 0 | | | 0 | 0 | | The Staff. |
| Mont-Louis | 24.98 | 634 4 | 30.20 | 769.4 | 55.6 | 13.1 | 45 | SSW | 22.4 | 10.00 | | | 3 | | SSW | 0 | 0 | | Mr. Falguère. |
| Nice | | | 30.21 | 767.3 | 61.0 | 16.1 | 79 | SW | | | 1 | | 0 | | | 0 | 0 | Clear | Dr. A. Niepce. |
| Perpignan | 29.78 | 756.3 | 30.05 | 763.3 | 73.8 | 23.2 | 36 | S | | | 2 | 3c | | SW | | 0 | 0 | | Marié Davy, Director |
| Pic du Midi, (Summit,) H. P. | | | 30.09 | 764.2 | 70.9 | 21.6 | 36 | SW | 18.6 | 8.33 | | | 6 | | SW | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Plantade,) H. P. | 22.59 | 573.9 | | | 39.6 | 4.2 | | SW | | | 1 | | 10 | | | 0 | 0 | | M. Baylac. |
| Saint Maur, (near Paris) | 29.89 | 759.2 | 30.06 | 763.4 | 72.5 | 22.5 | 34 | W | | | 1 | | 1 | WSW | WSW | 0 | 0 | Cloudy | Gen'l de Nansouty |
| Toulouse, Observatory | 29.36 | 745.8 | 30.09 | 764.2 | 66.9 | 19.4 | 45 | SSE | | | 6 | | 6 | | | 0.207 | 5.25 | Solar halo | E. Renou. |
| Tours | 29.88 | 758.9 | 30.08 | 763.9 | 69.8 | 21.0 | 50 | S | | | 1 | | 3 | | | 0.008 | 0.2 | | The Staff. |
| Versailles, (near Paris) | | | 30.07 | 763.7 | 72.7 | 22.6 | 37 | SW | | | 3 | | 8 | | | 0.242 | 6.15 | Fair | C. Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.23 | 767.8 | 30.25 | 768.4 | 51.3 | 10.7 | 94 | NNE | 3.8 | 1.7 | | | 10kn | | | 0.390 | 9.9 | Covered | Dr. A. Bérigny. |
| | | | | | | | | | | | | | | | | | | | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 29.87 | 758.6 | 30.04 | 762.9 | 64.6 | 18.1 | 45 | W | | | 1 | | 3 | | | | | | Prof. Arndt. |
| Breslau | 29.64 | 750.4 | 30.08 | 763.9 | 65.5 | 18.6 | 43 | NNE | | | 0 | | 10 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.67 | 753.7 | 30.10 | 764.4 | 69.1 | 20.6 | 41 | SW | | | 4 | | 2 | | | Blank | Blank | | Albert Senz. |
| Cassel | 29.50 | 749.4 | 30.11 | 764.9 | 70.2 | 21.2 | 34 | W | | | 4 | | 8 | W | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.88 | 758.9 | 30.04 | 763.0 | 70.9 | 21.6 | 39 | W | | | 2 | | 7 | | | 0 | 0 | | Director Lose. |
| Emden | 29.97 | 761.3 | 30.01 | 762.2 | 60.6 | 15.9 | 72 | NW | | | 1 | | 1 | | | 0 | 0 | | Prof. Prestel. |
| Frankfort on the Main | 29.74 | 755.4 | 30.10 | 764.5 | 70.7 | 21.5 | 20 | WSW | | | 1 | | 3 | | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 28.73 | 729.8 | 30.16 | 766.1 | 59.7 | 15.4 | 56 | N | | | 2 | | 2 | | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 29.93 | 760.2 | 30.00 | 762.0 | 65.7 | 18.7 | 51 | WSW | | | 3 | | 6k | | | 0.039 | 1.0 | Fair | Captain F. Hegemann. |
| Kiel | 29.95 | 760.6 | 29.96 | 761.0 | 61.7 | 16.5 | 55 | W | | | 6 | | 8 | | | 0.024 | 0.61 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.89 | 759.2 | 29.97 | 761.3 | 57.4 | 14.1 | 66 | W | | | 2 | | 8 | | | 0.012 | 0.3 | | Prof. E Luther. |
| Köslin | | | 29.96 | 761.0 | 55.4 | 13.0 | | Calm | | | 0 | | 5 | | | 0.024 | 0.6 | | H. Müller. |
| Leipsic, Observatory | 29.68 | 753 9 | 30.10 | 764.4 | 65.1 | 18.4 | 47 | WSW | | | 1 | | 7 | W | | 0 | 0 | | Prof. Bruhns. |
| Memel, Naval School | 29.93 | 760.2 | 29.98 | 761.4 | 46.4 | 8.0 | 86 | SW | | | 1 | | 10n | | | | | Light rain | Reinbrecht von Skalweit. |
| Neufahrwasser | 29.99 | 761.8 | 30.01 | 762.2 | 57.9 | 14.4 | 63 | NW | | | 2 | | 10 | | | 0.106 | 2.7 | | A. Lothes. |
| Posen | 29.79 | 756.6 | 30.08 | 763 9 | 61.9 | 16 6 | 59 | NW | | | 2 | | 8 | | | 0.036 | 0.9 | | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.59 | 751.5 | 30.12 | 765.1 | 69.3 | 20.7 | 35 | Calm | | | 0 | | 3 | W | | 0 | 0 | | Dr. Schur. |
| Stuttgart | 29.15 | 740.5 | 30.07 | 763.7 | 68.0 | 20.0 | 34 | E | | | 1 | | 4 | S | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | 29.46 | 748.2 | 29.98 | 761.5 | 69.4 | 20.8 | 32 | W | | | 4 | | 3 | | | 0 | 0 | Foggy | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.62 | 727.0 | 30.08 | 764.0 | 65.1 | 18.4 | 32 | SW | 9 | 4 | | | 7c | NW | | 0 | 0 | | Dr. Von Bebber. |
| Wustrow, Naval School | 30.02 | 762.4 | 30.06 | 763.4 | 56.5 | 13.6 | 72 | WNW | | | 1 | | 3 | | | 0 | 0 | | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.69 | 754.2 | 30.08 | 764.1 | 63.5 | 17.5 | | NE | | | 2.0 | | | | | | | Clear | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.82 | 757.4 | 29.87 | 758.7 | 79.2 | 26.2 | 76 | SW | 247 | 10.77 | | | 4 | | SW | 0 | 0 | | D. clouds. |
| Deesa | 29.38 | 746.1 | 29.84 | 757.9 | 93.7 | 34.3 | 29 | Calm | | | | | 0 | | | 0 | 0 | | Blue sky. |
| Bombay | 29.74 | 755.4 | 29.78 | 756.4 | 85.4 | 29.7 | 51 | NW | 19 | 8.5 | | | 0 | | | 0 | 0 | | Blue sky. |
| Poona | 27.78 | 705.6 | 29.73 | 755.2 | 89.7 | 32.1 | 36 | W | | | | | | | | 0 | 0 | | Blue sky. |
| Lahore | 29.10 | 739.2 | 29.85 | 758.2 | 79.4 | 26.3 | 38 | Calm | 1.3 | 0.6 | | | 3 | | | 0 | 0 | | Misty. |
| Belgaum | 27.27 | 692.6 | 29.74 | 755.4 | 88.3 | 31.3 | 46 | W | 21 | 9.4 | | | 1 | | E | 0 | 0 | | Misty. |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.95 | 735.2 | 29.85 | 758.2 | 77.0 | 25.0 | 49 | Calm | 5.9 | 2.6 | | | 3 | | | 0 | 0 | | |
| Agra | 29.29 | 744.0 | 29.86 | 758.4 | 81.7 | 27.6 | 36 | W | | | | | | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.73 | 729.8 | 29.76 | 755.8 | 90.2 | 32.3 | 23 | Calm | 4.2 | 1.9 | | | | | | 0 | 0 | | Blue sky. |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.47 | 748.5 | 29.84 | 758.0 | 79.5 | 26.4 | 47 | Calm | 1.1 | 0.5 | | | 10 | | | 0 | 0 | | Overcast. |
| Allahabad | 29.50 | 749.3 | 29.81 | 757.2 | 81.2 | 27.3 | 39 | Calm | 1.9 | 0.8 | | | 0 | | | 0.35 | 8.9 | | Blue sky. |
| Patna | 29.59 | 751.6 | 29.77 | 756.2 | 87.4 | 30.8 | 26 | W | 2.0 | 0.9 | | | 8 | W | NW | 0 | 0 | | D. clouds. |
| Hazaribagh | 27.77 | 705.4 | 29.79 | 756.6 | 76.6 | 24.8 | 68 | SSE | 6.5 | 2.9 | | | 3 | | SW | 0 | 0 | | Thunder. |
| Cuttack | 29.72 | 754.9 | 29.80 | 756.9 | 86.6 | 30.3 | 59 | SSW | 3.7 | 1.7 | | | 8 | | | 0.40 | 10.2 | | Thunder. |
| Calcutta (Alipore) | 29.78 | 756.4 | 29.80 | 757.0 | 69.6 | 20.9 | 96 | E | 6 | 2.7 | | | 10 | W | W | 0.94 | 23.9 | | Raining. |
| Goalpara | 29.39 | 746.5 | 29.78 | 756.3 | 78.8 | 26.0 | 66 | Calm | 1.8 | 0.8 | | | 10 | W | | 0 | 0 | | Overcast. |
| Chittagong | 29.73 | 755.0 | 29.82 | 757.3 | 84.9 | 29.4 | 54 | NW | | | | | | | | 0 | 0 | | Misty. |
| Sibsagar | 29.48 | 748.7 | 29.81 | 757.2 | 80.1 | 26.7 | 74 | WSW | 2.6 | 1 2 | | | 10 | | W | 1.39 | 35.3 | | D. clouds. |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.45 | 722.6 | 29.80 | 756.8 | 86 | 30.0 | 18 | NW | 4.6 | 2.1 | | | | | | 0 | 0 | | Blue sky. |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,892.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 1—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.72 | 755.0 | 30.13 | 765.3 | 70.2 | 21.2 | 35 | SW | 2.5 | 1.1 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 30.02 | 762.6 | 30.13 | 765.3 | 69.4 | 20.8 | 31 | W | 4.9 | 2.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.91 | 759.6 | 30.10 | 764.4 | 67.6 | 19.8 | 37 | SE | 1.3 | 0.6 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.84 | 732.4 | 30.13 | 765.4 | 68.4 | 20.2 | 33 | SW | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.71 | 754.6 | 30.23 | 767.7 | 70.2 | 21.2 | ..... | SW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.27 | 743.5 | 30.17 | 766.4 | 67.1 | 19.5 | 35 | ESE | 4.3 | 1.9 | ..... | ..... | 3 | N | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 28.27 | 718.0 | 30.17 | 766.2 | 64.0 | 17.8 | 40 | NNE | ..... | ..... | 2 | ..... | 3 | N | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 30.01 | 762.2 | 30.23 | 767.8 | 60.8 | 16.0 | 71 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 30.05 | 763.2 | 30.22 | 767.5 | 64.9 | 18.3 | 51 | S | 4.3 | 1.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.85 | 758.2 | 30.17 | 766.2 | 72.0 | 22.2 | 39 | WNW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.92 | 759.9 | 30.17 | 766.4 | 69.8 | 21.0 | 32 | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 30.15 | 765.8 | 30.23 | 767.9 | 63.7 | 17.6 | 57 | W | 2.5 | 1.1 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 30.16 | 766.1 | 30.21 | 767.3 | 62.6 | 17.0 | 55 | N | 6.3 | 2.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.66 | 728.0 | 30.21 | 767.4 | 63.5 | 17.5 | 42 | NE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 30.09 | 764.2 | 30.20 | 767.0 | 70.2 | 21.2 | 45 | ENE | ..... | ..... | 4 | ..... | 2 | NW | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 30.01 | 762.3 | 30.19 | 766.7 | 69.8 | 21.0 | 47 | WSW | 6.3 | 2.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrar |
| Naples, O. U. | 30.01 | 762.2 | 30.21 | 767.3 | 71.2 | 21.8 | 47 | SW | ..... | ..... | 2 | ..... | 2 | NE | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 63.7 | 17.6 | 68 | N | 17.4 | 7.8 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 30.04 | 763 0 | 30.23 | 767.8 | 64.9 | 18.3 | 63 | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.31 | 744.4 | 30.19 | 766.8 | 70.9 | 21.6 | 69 | SW | 3.1 | 1.4 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.95 | 760.6 | 30.20 | 767 0 | 63.3 | 17.4 | 39 | ENE | 7.4 | 3.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 30.10 | 764.4 | 30.17 | 766.3 | 63.3 | 17.4 | 70 | E | ..... | ..... | 2 | ..... | 3 | WSW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.65 | 753.2 | 30.21 | 767.3 | 68.9 | 20.5 | 52 | SE | 1.8 | 0.8 | ..... | ..... | 1 | S | ..... | 0.028 | 0.7 | ..... | Prof. F. Brioschi. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nagasaki | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Tokei (Yeddo) | 29.94 | 760.5 | 30.01 | 762.2 | 41.8 | 5.4 | 95 | NE | 9.2 | 4.1 | ..... | ..... | 10n | ..... | NE | 0.825 | 20.95 | Light rain... | The Observatory. |
| Tokei (Yeddo) University | 29.89 | 759 2 | 29.99 | 761.8 | 42.5? | 5.6 | 96 | NE | 14 | 6.3 | ..... | ..... | 10n | ..... | ..... | 0.46 | 11.7 | Wet..... | Prof. P. V. Veeder. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bârcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 64.4 | 18.0 | 21 | NW | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy... | L. Castillo, A. E. |
| Guadalajara | 24.95 | 633.7 | 30.01 | 762.3 | 41.4 | 5.5 | 55 | SW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair..... | Prof. L. Perez. |
| Guanajuato | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 68.1 | 14.5 | 53 | NNW | 6.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy..... | Prof. M. Leal. |
| Mexico | 23.01 | 584.3 | 29.56 | 750.8 | 50.5 | 10.3 | 29 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy..... | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 50.5 | 10.3 | 64 | Calm | 0 | 0 | ..... | 1c | 0 | ..... | ..... | 0 | 0 | Fair..... | M. V. de Leon, M. E. |
| Puebla | 23.27 | 591.0 | 30.00 | 761.9 | 46.2 | 7.9 | 49 | NNE | 2.4 | 1.1 | ..... | 1c | 5n | ..... | ..... | 0 | 0 | ½ cloudy..... | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 29.59 | 751.5 | 29.60 | 751.8 | 79.7 | 26.5 | 63 | S | 19.9 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy..... | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 29.64 | 752.9 | 29.67 | 753.6 | 76.1 | 24.5 | 71 | Calm | 0 | 0 | ..... | 10c | 0 | ..... | ..... | 0 | 0 | Very hazy... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 50.0 | 10.0 | 49 | S | 5.6 | 2.5 | ..... | 1 | 0 | S | ..... | 0 | 0 | Clear..... | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.26 | 590.8 | 30.04 | 763.0 | 45.5 | 7.5 | 59 | NNE | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy..... | P. Spina. [M.M. D. D |
| Morelia | 23.94 | 608.0 | ..... | ..... | 51.8 | 11.0 | 64 | S | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | M. Tena, F. L. Param. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 818 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,285.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.09 | 764.3 | 30.09 | 764.3 | 55.4 | 13.0 | ..... | W | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 29.96 | 760.9 | 30.01 | 762.3 | ..... | ..... | ..... | W | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 30.03 | 762.7 | 30.03 | 762.7 | 54.1 | 12.3 | ..... | SW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 30.08 | 764.1 | 30.08 | 764.1 | 59.0 | 15.0 | 54 | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 30.01 | 762.2 | 30.06 | 763.4 | 67.1 | 19.5 | 53 | WSW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Light cloudy | H. v'd Brink. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instru'tal error and temperature. Inches. | Barometer. Corrected for instru'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.72 | 754.9 | 29.78 | 756.3 | 47.1 | 8.4 | 94 | S | 14.3 | 6.4 | ..... | ..... | 8 | ..... | ..... | 0.047 | 1.2 | Rain & fog.. | |
| Brönö | 29.66 | 753.4 | 29.70 | 754.4 | 38.8 | 3.6 | 51 | N | 4 | 2 | ..... | ..... | 5 | ..... | ..... | 0.134 | 3.4 | ..... | |
| Christiania | 29.55 | 750.5 | 29.69 | 754.2 | 55.2 | 12.9 | 68 | SW | 0 | 0 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.58 | 751.2 | 29.62 | 752.3 | 32.7 | 0.4 | 92 | SW | 4 | 2 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.99 | 761.8 | 30.19 | 766.7 | 63.3 | 17.4 | 92 | W | 15.0 | 6.7 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.12 | 739.6 | 30.14 | 765.5 | 64.0 | 17.8 | 71 | SW | 4.3 | 1.9 | ..... | ..... | 9 | SSW | ..... | 0.217 | 5.5 | ..... | Dr. A. M. R. dos Santos |
| Funchal, (Madeira) | 30.20 | 767.1 | 30.29 | 769.3 | 68.9 | 20.5 | 65 | SW | 3.1 | 1.4 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.81 | 757.1 | 30.17 | 766.2 | 61.0 | 16.1 | 72 | SW | 15.0 | 6.7 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.18 | 766.5 | 30.25 | 765.3 | 65.8 | 18.8 | 81 | WSW | 9.8 | 4.4 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.91 | 759.6 | 29.91 | 759.8 | 84.2 | 29.0 | ..... | S | ..... | ..... | 5 | ..... | 2 | ..... | S | 2 | ..... | Blue sky.. ... | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Rio Douro, S. 25° 58′, E. 32° 37′ | ..... | ..... | 30.14 | 765.5 | 80.6 | 27.0 | ..... | SE | ..... | ..... | 3 | ..... | 6 | ..... | SE | 2 | SE | D. clouds.. .. | J. T. d'Oliveria, Com'd't. |
| Sado, Porto Praya, Cape Verde Islands. | 30.02* | 762.5* | 30.03* | 762.8* | 86.9 | 30.5 | ..... | E | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 2 | E | Blue sky..... | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.72 | 755.0 | 29.73 | 755.2 | ..... | ..... | ..... | W | ..... | ..... | 2 | ..... | 3 | ..... | W | 1 | ..... | Blue sky..... | F. Texeira da Silva, Com'd't. |
| Tejo | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | F. J. Ferreina,dos Amas,Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.60 | 751.8 | 30.02 | 762.4 | 59.2 | 15.1 | 66 | SW | 7 | 3 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.58 | 751.2 | 29.99 | 761.8 | 53.6 | 12.0 | 54 | SW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy clouds... | Astronomical Obs. |
| Dorpat | 29.61 | 752.1 | 29.85 | 758.3 | 49.8 | 9.9 | 68 | WSW | 9 | 4 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.78 | 756.4 | 29.80 | 756.8 | 48.4 | 9.1 | 60 | WSW | 7 | 3 | ..... | ..... | 10n;ks | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.31 | 744.4 | 29.63 | 752.6 | 44.6 | 7.0 | 71 | WSW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ch. Forsten. |
| Kieff | 29.35 | 745.4 | 29.97 | 761.3 | 60.1 | 15.6 | 53 | SE | 2 | 1 | ..... | ..... | 7k;ks;o | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 30.01 | 762.2 | 30.08 | 764.0 | 61.9 | 16.6 | 35 | SE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.07 | 763.7 | 30.09 | 764.2 | 57.2 | 14.0 | 54 | N | 2 | 1 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.41 | 747.0 | 29.97 | 761.1 | 47.8 | 8.8 | 44 | NNW | 9 | 4 | ..... | ..... | 2k | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.74 | 755.4 | 29.94 | 760.5 | 62.1 | 16.7 | 29 | WNW | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.58 | 751.2 | 29.60 | 751.7 | 26.2 | — 3.2 | 87 | W | 9 | 4 | ..... | ..... | 8k | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.49 | 723.6 | 29.88 | 758.9 | 63.9 | 17.7 | 58 | NW | 4 | 2 | ..... | ..... | 2k | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.16 | 766.0 | 30.08 | 763.9 | 56.8 | 13.8 | 33 | SSE | 4 | 2 | ..... | ..... | 2s | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Krotkowo* | 29.26 | 743.2 | 29.73 | 755.1 | 53.2 | 11.8 | 40 | WNW | 13 | 6 | ..... | ..... | 10k | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.39 | 746.6 | 29.67 | 753.5 | 43.0 | 6.1 | 45 | W | 9 | 4 | ..... | ..... | 10k | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.58 | 725.9 | 29.54 | 760.3 | 35.8 | 2 1 | 73 | SW | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light snow. | Meteorological Obs. |
| Nukuss | 29.87 | 758.7 | 30.10 | 764.6 | 54.0 | 12.2 | 24 | E | 11 | 5 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.57 | 725.7 | 30.29 | 769.4 | 54.7 | 12.6 | 50 | Calm | 0 | 0 | ..... | ..... | 5c | ..... | ..... | ..... | ..... | Light clouds | Michelson. |
| Barnaul | 29.72 | 754.9 | 30.27 | 768.8 | 34.2 | 1.2 | 43 | SW | 0 | 0 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.71 | 754.6 | 30.04 | 763.0 | 35.8 | 2.1 | 68 | SW | 20 | 9 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 30.11 | 764.7 | 30.25 | 768.3 | 58.1 | 14.5 | 28 | Calm | 0 | 0 | ..... | ..... | 1cs | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Nertchinsk | 27.90 | 708.7 | 30.00 | 762.0 | 37.9 | 3.3 | 72 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.93 | 760.3 | 30.03 | 762.7 | 40.5 | 4.7 | 30 | SW | 2 | 1 | ..... | ..... | 7ks | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 24.8 | — 4.0 | 73 | W | 16 | 7 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 30.00 | 762.0 | 30.11 | 764.7 | 62.1 | 16.7 | 61 | SSE | 3.8 | 1.72 | ..... | 1c | 0 | SW | ..... | 0 | 0 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.97 | 761.2 | 30.02 | 762 6 | 74.8 | 23.8 | 55 | SE | 3.5 | 1.58 | ..... | ..... | 6 | ..... | ..... | 0.024 | 0.6 | Cloudy ..... | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.11 | 688.6 | ..... | ..... | 64.4 | 18.0 | 72 | SW | 6.8 | 3.06 | ..... | ..... | 8 | ..... | ..... | 0.039 | 1.0 | Light rain... | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.89 | 708.5 | 30.10 | 764.6 | 62.8 | 17 1 | 78 | S | 8.2 | 3.67 | ..... | 0 | 10 | ..... | ..... | 0.677 | 17.2 | Covered.... . | The Staff. |
| Murcia, Met. Obs'y | 29.99 | 761.7 | 30.14 | 765.5 | 71.8 | 22.1 | 53 | ENE | 3.8 | 1.72 | ..... | 2 | 6 | W | ..... | 0 | 0 | Cloudy..... | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.12 | 739.7 | 30.01 | 762.3 | 60.3 | 15.7 | 75 | SSW | 17.4 | 7.78 | ..... | ..... | 10 | ..... | ..... | Inap. | Inap. | Covered ..... | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.81 | 757.1 | 29.87 | 758.7 | 78.8 | 26.0 | 83 | ESE | 4.0 | 1.8 | ..... | 0 | 1k | ..... | SE | 0 | 0 | Clear..... | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 30.08 | 763.9 | 30.18 | 766.4 | 62.8 | 17.1 | 80 | SW | 8.6 | 3.9 | ..... | 0 | 10 | ..... | SW | 0.007 | 0.2 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W.I. | 29.87 | 758.6 | 29.96 | 760.9 | 68.7 | 20.4 | 84 | SE | 0 | 0 | ..... | 4cs | 2kn | SE | SE | 0.167 | 4.00 | Cloudy..... | Leonardo de Tejeda, Chief of Engineers. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.6 ft.

## SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.53 | 750.1 | 29.57 | 751.1 | 40.3 | 4.6 | ..... | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.60 | 751.8 | 29.65 | 753.1 | 42.1 | 5.6 | 67 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.55 | 750.6 | 29.60 | 751.9 | 42.8 | 6 0 | 59 | SSW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.55 | 750.6 | 29.73 | 755.1 | 52.2 | 11.2 | 43 | WSW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.012 | 0.3 | ..... | |
| Wisby | 29.79 | 756.6 | 29.85 | 758.1 | 51.1 | 10.6 | 80 | WSW | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.64 | 752.8 | 29.71 | 754.7 | 49.5 | 9.7 | 83 | WSW | 10.3 | 4.6 | ..... | ..... | 10 | ..... | ..... | 0.201 | 5.10 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28 74 | 729.9 | 30.16 | 766.0 | 55.4 | 13.0 | 56 | NNE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| Zurich | 28.54 | 724.9 | 30.13 | 765.4 | 66.7 | 19.3 | 41 | W | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +5.7 mm.; Thermometer, +1.1 cent.; Relative Humidity, —1 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.13 | 765.3 | 50.7 | 10.4 | 66 | NNE | 13 | 6.0 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Valona | ..... | ..... | 30.18 | 766.5 | 63.0 | 17.2 | ..... | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | B. Stéfanidès. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | Imperial Observatory. |
| Beirut, (Syria,) Lee Obs'y | 29.82 | 757.4 | 29.93 | 760.2 | 66.9 | 19.4 | 73 | NW | ..... | ..... | 1 | ..... | 1ks | ..... | SW | 0 | 0 | D. clouds | Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.86 | 758.4 | 29.93 | 760.2 | 39.3 | 4.1 | 86 | NE | 2 | 0.9 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Clearing | Hon. J. Ferguson. |
| Brockville, Ontario | 29.76 | 755.9 | 30.08 | 764.0 | 37 | 2.8 | ..... | N | 5 | 2.2 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | W. R. Bigg. |
| *Chatham, N B | 29.81 | 757.2 | 29.87 | 758.7 | 38 | 3.3 | 95 | NE | 9 | 4.0 | ..... | ..... | 10n | ..... | NE | 0.22 | 5.6 | Light rain | H. J. Cundall, C. E. |
| Charlottetown, P. E. Island. | 29.67 | 753.6 | 29.71 | 754.6 | 35 | 1.7 | 97 | N | 14 | 6.3 | ..... | ..... | 10n | ..... | Calm | 0.190 | 4.83 | Light rain | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.84 | 757.9 | 30.04 | 763.0 | 38.0 | 3.3 | 87 | N | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0 | 0 | Overcast | James Smith, M. A. |
| Dalhousie, N. B | 29.92 | 760.0 | 29.96 | 761.0 | 42.2 | 5.7 | 78 | NW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | Overcast | H. A. Johnson. |
| Esquimault, B. C | 29.71 | 754.6 | 29.76 | 755.9 | 52.1 | 0.1 | 95 | Calm | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear | W. H. Bevis. |
| *Father Point, Quebec | 29.97 | 761.2 | 29.99 | 761.7 | 36 | 2.2 | 95 | NE | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Threatening | J. McWilliams. |
| Fredericton, N. B | 29.81 | 757.2 | 29.88 | 758.9 | 41.6 | 5.3 | 74 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | Prof. Harrison. |
| *Fort Garry Manitoba | 29.36 | 745.7 | 30.21 | 767.3 | 32 | 0.0 | 90 | E | 13 | 5.8 | ..... | 5ck | 2ks | E | E | 0 | 0 | Fair | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Granton, Ontario | 28.89 | 733.8 | 30.01 | 762.2 | 42 | 5.6 | 76 | NE | ..... | ..... | 1 | ..... | 10n | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| *Halifax, N. S | 29.51 | 749.5 | 29.65 | 753.1 | 39 | 3.9 | 90 | N | 14 | 6.3 | ..... | ..... | 10n | ..... | N | 0 | 0 | Cloudy | James Grant. |
| Hamilton, Ontario | 29.68 | 753.9 | 30.06 | 763.5 | 44.2 | 6.8 | 75 | NW | ..... | ..... | 1 | 5ck | ..... | ..... | ..... | Inap. | Inap. | Cloudy | F. Allison, M. A. |
| Heart's Content, N. F | 29.37 | 746.0 | 29.40 | 746.7 | 38 | 3.3 | 100 | NE | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | Geo. Dickson, M. A. |
| *Kingston, Ontario | 29.73 | 755.1 | 30.07 | 763.8 | 40 | 4.4 | 74 | N | 7 | 3.1 | ..... | 2k | 10 | NW | ..... | 0.05 | 1.3 | Overcast | E. Weedon. |
| Little Glace Bay, N. S | 29.55 | 750.6 | 29.59 | 751.6 | 34.0 | 1.1 | ..... | NE | 6 | 2.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | S. Woods, M. A. |
| *Montreal, Quebec | 29.82 | 757.4 | 30.03 | 762.7 | 43 | 6.1 | 87 | NW | 6 | 2.7 | ..... | 8k | 10n | NW | ..... | 0.14 | 3.6 | Raining | C. H. Rigby. |
| *Parry Sound, Ontario | 29.40 | 746.7 | 30.11 | 764.8 | 36 | 2.2 | 80 | NE | 9 | 4.0 | ..... | 5c | 2s | ..... | ..... | Inap | Inap. | Cloudy | C. H. McLeod, C. E. |
| Peterboro, Ontario | 29.30 | 744.2 | 30.06 | 763.5 | 43.7 | 6.5 | 75 | S | ..... | ..... | ..... | 4c | 0 | N | ..... | 0 | 0 | Clear | Rev. R. Mosley. |
| Port Dover, Ontario | 29.30 | 744.2 | 30.00 | 762.0 | 42 | 5.6 | 85 | NE | 15 | 6.7 | ..... | 5k | 0 | SW | ..... | 0 | 0 | Fair | J. F. Jeffers, B. A. |
| Port Hastings, N. S | 29.66 | 750 8 | 29.61 | 752.1 | 34.8 | 1.6 | ..... | NW | 4 | 1.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Cloudy | H. Morgan. |
| Port Stanley, Ontario | 29.32 | 744.7 | 29.98 | 761.5 | 43 | 6.1 | 75 | E | 17 | 7.6 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Foggy | Peter Grant. |
| *Quebec, Quebec | 29.67 | 753.6 | 30.00 | 762.0 | 41 | 5.0 | 91 | Calm | ..... | ..... | 0 | ..... | 10n | ..... | SE | Inap. | Inap. | Light rain | M. Payne. |
| *Rockliffe, Ontario | 29.66 | 753.4 | 30.13 | 765.3 | 37 | 2.8 | 76 | NW | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0.01 | 0.3 | Cloudy | Capt. Ashe, R. N. |
| St. Andrews, N. B | 29.76 | 755.9 | 29.81 | 757.2 | 43 | 6.1 | 75 | N | 12 | 5.4 | ..... | 2k | 10s | ..... | NW | 0 | 0 | Cloudy | W. H. McIntyre. |
| St. John, N. B | 29.63 | 752.6 | 29.80 | 756.9 | 39 | 3.9 | 91 | NW | 11 | 4.9 | ..... | ..... | 5s | ..... | ..... | 0 | 0 | Cloudy | Dr. Gove. |
| *Saugeen, Ontario | 29.34 | 745.2 | 30.07 | 763.8 | 39 | 3 9 | 89 | E | 7 | 3.1 | ..... | ..... | 10ks | ..... | ..... | 0.040 | 1.02 | Clearing | G. Murdock, C. E. |
| Stayner, Ontario | 29.28 | 743.7 | 30.08 | 764.0 | 40 | 4.4 | 74 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Cloudy | K. Stewart. |
| Stratford, Ontario | 28.68 | 728.5 | 29.98 | 761.5 | 41.5 | 5.3 | 69 | NE | 10 | 4.5 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | R. J. Cole. |
| *Sydney, C. B | 29.54 | 750.3 | 29.57 | 751.1 | 36 | 2.2 | 94 | N | 14 | 6.3 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | C. J. MacGregor, M. A. |
| *Toronto, Ontario | 29.68 | 753.9 | 30.07 | 763.8 | 42 | 5.6 | 70 | NE | 5 | 2.2 | ..... | 10cs | 0 | W | ..... | 0.05 | 1.3 | Light rain | T. C. Hill. |
| Windsor, N. S | 29.61 | 752.1 | 29.71 | 754.6 | 32.0 | 0.0 | 90 | NW | 14 | 6.3 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | Magnetic Observatory |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.06 | 1.5 | Fair | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 94.0 | 1.1 | 100 | NE | ..... | ..... | ..... | ..... | Fog | ..... | ..... | 0.42 | 10.7 | Foggy | J. Montgomery. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrumental error and temperature. Inches. | BAROMETER. Corrected for instrumental error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10 | CLOUDS. Amount. Up'er 0–10 | CLOUDS. Amount. Low'r 0—10 | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.75 | 755.6 | 29.97 | 761.2 | 47 | 8.3 | 66 | N | 8 | 3.6 | ..... | 5k | 0 | NW | ..... | 0.02 | 0.5 | Fair | |
| Alpena, Michigan | 29.45 | 748.0 | 30.11 | 764.8 | 38 | 3.3 | 71 | NE | 10 | 4.5 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Atlantic City, New Jersey | 29.95 | 760.7 | 29.97 | 761.2 | 49 | 9.4 | 85 | NE | 22 | 9.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Augusta, Georgia | 29.63 | 752.6 | 29.80 | 756.9 | 68 | 20.0 | 84 | S | 2 | 0.9 | ..... | ..... | 10n | ..... | SW | Inap. | Inap. | Light rain | |
| Baltimore, Maryland | 29.92 | 760.0 | 29.97 | 761.2 | 53 | 11.7 | 61 | NE | 3 | 1.3 | ..... | ..... | 10n;ks | ..... | Calm | Inap. | Inap. | Light rain | |
| Barnegat, New Jersey | 29.94 | 760.5 | 29.97 | 761.2 | 49 | 9.4 | 71 | NE | 14 | 6.3 | ..... | 8cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Bismarck, Dakota | 28.02 | 711.7 | 29.87 | 758.7 | 40 | 4.4 | 100 | E | 24 | 10.7 | ..... | ..... | 10n | ..... | Calm | 0.05 | 1.3 | Light rain | |
| Boise City, Idaho | 26.80 | 680.7 | 29.68 | 753.9 | 24 | — 4.4 | 74 | Calm | 0 | 0 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Boston, Massachusetts | 29.76 | 755.9 | 29.91 | 759.7 | 45.5 | 7.5 | 73 | NW | 8 | 3.6 | ..... | 8ck | 0 | N | ..... | 0 | 0 | Fair | |
| Brackettville, Texas | 28.53 | 725.4 | 29.54 | 750.3 | 67 | 19.4 | 89 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 28.93 | 734.8 | 29.94 | 760.5 | 38 | 3.3 | 81 | E | 20 | 8.9 | ..... | 8cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Brownsville, Texas | 29.59 | 751.6 | 29.76 | 755.9 | 75 | 23.9 | 85 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Buffalo, New York | 29.28 | 743.7 | 29.99 | 761.7 | 42 | 5.6 | 83 | NE | 10 | 4.5 | ..... | Haze | 5s | Calm | Calm | 0 | 0 | Fair | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 46 | 7.8 | 69 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.76 | 755.9 | 30.03 | 762.7 | 42 | 5.6 | 74 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Cairo, Illinois | 29.38 | 746.2 | 29.76 | 755.9 | 61 | 16.1 | 82 | W | 15 | 6.7 | ..... | 8k | 0 | W | ..... | 0.04 | 1.0 | Fair | |
| Camp Grant, Arizona | 25.03 | 635.8 | 29.83 | 757.7 | 44 | 6.7 | 68 | W | ..... | ..... | 1 | 8k | 0 | W | ..... | 0 | 0 | Cloudy | |
| Camp Verde, Arizona | 26.63 | 676.4 | 30.11 | 764.8 | 42 | 5.6 | 66 | SE | ..... | ..... | 1 | 8c | 0 | S | ..... | 0 | 0 | Fair | |
| Campo, California | 27.24 | 691.9 | 29.81 | 757.2 | 41 | 5.0 | 91 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | SW | 0.81 | 20.6 | Cloudy | |
| Cape Hatteras, N. Carolina | 29.86 | 758.4 | 29.86 | 758.4 | 64 | 17.8 | 100 | S | 4 | 1.8 | ..... | ..... | 10n | ..... | W | 0.07 | 1.8 | Light rain | |
| Cape Henry, Virginia | 29.83 | 757.7 | 29.86 | 758.4 | 55 | 12.8 | 81 | E | 19 | 8.5 | ..... | ..... | 10n | ..... | SE | 0.05 | 1.3 | Light rain | |
| Cape Lookout, N. Carolina | 29.83 | 757.7 | 29.85 | 758.2 | 68 | 20.0 | 90 | S | 6 | 2.7 | ..... | ..... | 10n | ..... | W | 0.02 | 0.5 | Light rain | |
| Cape May, New Jersey | 29.94 | 760.5 | 29.96 | 761.0 | 51 | 10.6 | 79 | E | 16 | 7.2 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Charleston, South Carolina | 29.79 | 756.7 | 29.86 | 758.4 | 69 | 20.6 | 95 | W | 5 | 2.2 | ..... | ..... | 10n | ..... | Calm | 0.01 | 0.3 | Light rain | |
| Cheyenne, Wyoming | 23.58 | 598.9 | 29.52 | 749.8 | 31 | — 0.6 | 89 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0.10 | 2.5 | Foggy | |
| Chicago, Illinois | 29.18 | 741.2 | 29.88 | 758.9 | 43 | 6.1 | 83 | E | 10 | 4.5 | ..... | ..... | 10s | ..... | E | 1.03 | 26.2 | Threatening | |
| Cincinnati, Ohio | 29.12 | 739.6 | 29.75 | 755.6 | 56 | 13.3 | 78 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | NE | 0.22 | 5.6 | Cloudy | |
| Cleveland, Ohio | 29.17 | 740.9 | 29.89 | 759.2 | 45 | 7.2 | 76 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.15 | 3.8 | Cloudy | |
| Concho, Texas | 27.79 | 705.8 | 29.42 | 747.3 | 58 | 14.4 | 81 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.16 | 740.7 | 29.69 | 751.8 | 70 | 21.1 | 95 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Davenport, Iowa | 29.20 | 741.7 | 29.84 | 757.9 | 46 | 7.8 | 84 | E | 20 | 8.9 | ..... | ..... | 10s | ..... | Calm | 0.11 | 2.8 | Cloudy | |
| Deadwood, Dakota | 25.01 | 635.2 | ..... | ..... | 32 | 0.0 | 89 | N | 1 | 0.4 | ..... | ..... | 10n | ..... | Calm | 0.05 | 1.3 | Light snow | |
| Denison, Texas | 28.85 | 732.8 | 29.69 | 751.8 | 68 | 20.0 | 79 | SE | 4 | 1.8 | ..... | 0 | 2s | ..... | SE | 0 | 0 | Fair | |
| Denver, Colorado | 24.33 | 618.0 | 29.55 | 750.6 | 39 | 3.9 | 73 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Threatening | |
| Detroit, Michigan | 29.26 | 743.2 | 29.93 | 760.2 | 47 | 8.3 | 77 | NE | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light rain | |
| Dodge City, Kansas | 26.99 | 685.5 | 29.29 | 741.7 | 49 | 9.4 | 93 | SE | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Dubuque, Iowa | 29.17 | 740.9 | 29.87 | 758.7 | 44 | 6.7 | 84 | E | 9 | 4.0 | ..... | ..... | 10ks | ..... | E | 0.60 | 15.2 | Cloudy | |
| Duluth, Minnesota | 29.45 | 748.0 | 30.14 | 765.5 | 38 | 3.3 | 72 | NE | 28 | 12.5 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Eagle Pass, Texas | 29.17 | 740.9 | 29.80 | 756.9 | 66 | 18.9 | 89 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Eastport, Maine | 29.72 | 754.9 | 29.79 | 756.7 | 43 | 6.1 | 83 | N | 14 | 6.3 | ..... | ..... | 10s | ..... | N | 0.11 | 2.8 | Cloudy | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 67 | 19.4 | 41 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.20 | 741.7 | 29.91 | 759.7 | 47 | 8.3 | 77 | NE | 6 | 2.7 | ..... | 10cs | 0 | ..... | ..... | 0 | 0 | Cloudy | |
| Escanaba, Michigan | 29.47 | 748.5 | 30.14 | 765.5 | 38 | 3.3 | 72 | N | 10 | 4.5 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Florence, Arizona | 28.26 | 717.8 | 29.86 | 758.4 | 55 | 12.8 | 68 | W | 2 | 0.9 | ..... | 2k | 0 | W | ..... | Inap. | Inap. | Fair | |
| Fort Bayard, New Mexico | 23.95 | 608.3 | 29.95 | 760.7 | 40 | 4.4 | 40 | NW | 16 | 7.2 | ..... | 5k | 0 | NW | ..... | 0 | 0 | Fair | |
| Fort Craig, New Mexico | 25.26 | 641.6 | ..... | ..... | 47 | 8.3 | 28 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 24.96 | 634.0 | 29.92 | 760.0 | 63 | 17.2 | 33 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.07 | 738.4 | 29.58 | 751.3 | 61 | 16.1 | 88 | W | 1 | 0.4 | ..... | 2ck | 0 | W | ..... | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.37 | 720.6 | 29.59 | 751.6 | 62 | 16.7 | 77 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.99 | 761.7 | 30.03 | 762.7 | — 7 | —21.7 | 100 | NE | 11 | 4.9 | ..... | ..... | Fog | ..... | NE | 0 | 0 | Foggy | |
| Fort Sill, Indian Territory | 28.38 | 720.8 | 29.43 | 747.5 | 64 | 17.8 | 67 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Galveston, Texas | 29.63 | 752.6 | 29.67 | 753.6 | 72 | 22.2 | 95 | S | 4 | 1.8 | ..... | ..... | 8ks | ..... | SW | 0.01 | 0.3 | Cloudy | |
| Grand Haven, Michigan | 29.31 | 744.5 | 29.96 | 761.0 | 46 | 7.8 | 84 | NE | 12 | 5.4 | ..... | ..... | 10ks | ..... | NE | 0.21 | 5.3 | Cloudy | |
| Indianapolis, Indiana | 28.98 | 736.1 | 29.75 | 755.6 | 48 | 8.9 | 93 | NE | 12 | 5.4 | ..... | ..... | 10n | ..... | NE | 1.51 | 38.4 | Light rain | |
| Indianola, Texas | 29.67 | 753.6 | 29.69 | 754.1 | 74 | 23.3 | 95 | S | 4 | 1.8 | ..... | 5k | 5ks | S | S | 0 | 0 | Cloudy | |
| Jacksboro, Texas | 28.48 | 723.4 | 29.53 | 750.8 | 63 | 17.2 | 78 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 29.80 | 756.9 | 29.83 | 757.7 | 74 | 23.3 | 86 | SE | 7 | 3.1 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Keokuk, Iowa | 29.10 | 739.1 | 29.70 | 754.4 | 50 | 10.0 | 79 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Key West, Florida | 29.85 | 758.2 | 29.88 | 758.9 | 79 | 26.1 | 82 | SE | 9 | 4.0 | ..... | 5k | 0 | SE | ..... | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 29.83 | 757.7 | 29.86 | 758.4 | 56 | 13.3 | 94 | E | 13 | 5.8 | ..... | ..... | 10n | ..... | W | 0.30 | 7.6 | Light rain | |
| Knoxville, Tennessee | 28.83 | 732.3 | 29.83 | 757.7 | 51 | 10.6 | 93 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0.21 | 5.3 | Dense fog | |
| La Crosse, Wisconsin | 29.19 | 741.4 | 29.93 | 760.2 | 43 | 6.1 | 83 | E | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.27 | 6.9 | Cloudy | |
| La Mesilla, New Mexico | 25.89 | 657.6 | 30.04 | 763.0 | 46 | 7.8 | 54 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.24 | 742.7 | 29.56 | 750.8 | 74 | 23.3 | 81 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 28.83 | 732.3 | 29.65 | 753.1 | 51 | 10.6 | 93 | NE | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Dense fog | |
| Los Angeles, California | 29.39 | 746.5 | 29.73 | 755.1 | 49 | 9.4 | 85 | E | 11 | 4.9 | ..... | ..... | 10n | ..... | S | 0.10 | 2.5 | Light rain | |
| Louisville, Kentucky | 29.18 | 741.2 | 29.72 | 754.9 | 58 | 14.4 | 88 | NE | 8 | 3.6 | ..... | 0 | 8ks | ..... | SW | 0.60 | 15.2 | Clearing | |
| Lynchburg, Virginia | 29.22 | 742.2 | 29.89 | 759.2 | 53 | 11.7 | 66 | NE | 4 | 1.8 | ..... | ..... | 10ks | ..... | S | 0.02 | 0.5 | Cloudy | |
| Marquette, Michigan | 29.45 | 748.0 | 30.17 | 766.3 | 41 | 5.0 | 65 | NE | 12 | 5.4 | ..... | 8c | 0 | NE | ..... | 6 | 0 | Fair | |
| Mason, Texas | 28.07 | 713.0 | 29.76 | 755.9 | 59 | 15.0 | 94 | SW | 2 | 0.9 | ..... | ..... | 10s | ..... | SW | 0.03 | 0.8 | Cloudy | |
| Memphis, Tennessee | 29.41 | 747.0 | 29.71 | 754.6 | 65 | 18.3 | 94 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | N | 0.18 | 4.6 | Threatening | |
| Milwaukee, Wisconsin | 29.22 | 742.2 | 29.96 | 761.0 | 42 | 5.6 | 91 | NE | 16 | 7.2 | ..... | 10cs | 0 | ..... | ..... | 1.18 | 30.0 | Cloudy | |
| Mobile, Alabama | 29.71 | 754.6 | 29.75 | 755.6 | 73 | 22.8 | 100 | S | 3 | 1.3 | ..... | ..... | Fog | ..... | ..... | 0.26 | 6.6 | Foggy | |
| Montgomery, Alabama | 29.57 | 751.1 | 29.79 | 756.7 | 67.5 | 19.7 | 90 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.52 | 13.2 | Clear | |
| Morgantown, West Virginia | 28.76 | 730.5 | 29.79 | 756.7 | 54 | 12.2 | 80 | SE | 7 | 3.1 | ..... | ..... | 10s | ..... | SE | 0.43 | 10.9 | Threatening | |
| Mt. Washington, N. H. | 23.64 | 600.4 | 30.00 | 762.0 | 27 | — 2.8 | 100 | NE | 36 | 16.1 | ..... | ..... | Fog | ..... | NE | 0.37 | 9.4 | Foggy | |
| Nashville, Tennessee | 29.21 | 741.9 | 29.73 | 755.1 | 62 | 16.7 | 77 | E | 5 | 2.2 | ..... | 2c;k | 5s | ..... | ..... | 0.15 | 3.8 | Fair | |
| New Haven, Connecticut | 29.85 | 758.2 | 29.97 | 761.2 | 51 | 10.6 | 59 | N | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New London, Connecticut | 29.91 | 759.7 | 29.96 | 761.0 | 53 | 11.7 | 54 | N | 4 | 1.8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| New Orleans, Louisiana | 29.65 | 753.1 | 29.71 | 754.6 | 75 | 23.9 | 90 | SE | 4 | 1.8 | ..... | ..... | 10ks | ..... | SE | 0 | 0 | Cloudy | |
| Newport, Rhode Island | 29.88 | 758.9 | 29.93 | 760.2 | 46 | 7.8 | 77 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New York, New York | 29.81 | 757.2 | 29.98 | 761.5 | 49 | 9.4 | 57 | NW | 4 | 1.8 | ..... | 10c | Haze | Calm | Calm | 0 | 0 | Cloudy | |
| Norfolk, Virginia | 29.81 | 757.2 | 29.87 | 758.7 | 54 | 12.2 | 87 | SE | 10 | 4.5 | ..... | ..... | 10n | ..... | Calm | 0.07 | 1.8 | Light rain | |
| North Platte, Nebraska | 26.72 | 678.7 | 29.26 | 743.2 | 40 | 4.4 | 100 | NE | 12 | 5.4 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Olympia, Washington Ter. | 29.68 | 753.9 | 29.72 | 754.9 | 30 | — 1.1 | 89 | S | 1 | 0.4 | ..... | 0 | 4s | ..... | Calm | 0.02 | 0.5 | Fair | |
| Omaha, Nebraska | 28.61 | 726.7 | 29.68 | 753.9 | 44 | 6.7 | 92 | NE | 9 | 4.0 | ..... | ..... | 10s | ..... | NE | 0.06 | 1.5 | Cloudy | |
| Oswego, New York | 29.73 | 755.1 | 30.03 | 763.5 | 41 | 5.0 | 82 | NE | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pembina, Dakota | 29.27 | 743.4 | 30.12 | 765.0 | 36 | 2.2 | 71 | E | 11 | 4.9 | ..... | 8ck | 0 | E | ..... | 0 | 0 | Fair | |
| Philadelphia, Pennsylvania | 29.94 | 760.5 | 29.99 | 761.7 | 48 | 8.9 | 70 | NE | 7 | 3.1 | ..... | 2cs | 8s | Calm | NE | 0 | 0 | Cloudy | |
| Phœnix, Arizona | 28.74 | 730.0 | 30.53 | 775.4 | 54 | 12.2 | 61 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.29 | 439.2 | 29.50 | 749.3 | 3 | —16.1 | 100 | SW | 28 | 12.5 | ..... | ..... | 10n | ..... | Calm | 0.46 | 11.7 | Light snow | |
| Pioche, Nevada | 23.64 | 600.4 | 29.41 | 747.0 | 23 | — 5.0 | 100 | S | 7 | 3.1 | ..... | ..... | 10s | ..... | Calm | 0.41 | 10.4 | Cloudy | |
| Pittsburg, Pennsylvania | 29.04 | 737.6 | 29.84 | 757.9 | 47 | 8.3 | 85 | E | 5 | 2.2 | ..... | ..... | 10n | ..... | Calm | 0.06 | 1.5 | Light rain | |
| Port Huron, Michigan | 29.28 | 743.7 | 29.95 | 760.7 | 43 | 6.1 | 83 | NE | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Portland, Maine | 29.81 | 757.2 | 29.86 | 758.4 | 52 | 11.1 | 66 | NW | 8 | 3.6 | ..... | 8k | Haze | N | ..... | 0 | 0 | Cloudy | |
| Portland, Oregon | 29.62 | 752.3 | 29.73 | 755.1 | 40 | 4.4 | 82 | N | 6 | 2.7 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Prescott, Arizona | 24.51 | 622.5 | 29.87 | 758.7 | 34 | 1.1 | 52 | SW | 28 | 12.5 | ..... | 0 | 2s | ..... | SW | 0.04 | 1.0 | Fair | |
| Punta Rassa, Florida | 29.87 | 758.7 | 29.89 | 759.2 | 78 | 25.6 | 86 | S | 12 | 5.4 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Red Bluff, California | 29.20 | 741.7 | 29.56 | 750.8 | 41 | 5.0 | 91 | W | 1 | 0.4 | ..... | ..... | 10n | ..... | Calm | 0.11 | 2.8 | Light rain | |
| Rochester, New York | 29.40 | 746.7 | 30.02 | 762.5 | 43 | 6.1 | 75 | E | 8 | 3.6 | ..... | 8cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Roseburg, Oregon | 29.09 | 738.9 | 29.66 | 753.4 | 32.5 | 0.3 | 94 | Calm | 0 | 0 | ..... | 0 | 2s | ..... | Calm | 0.01 | 0.3 | Fair | |
| Sacramento, California | 29.48 | 748.8 | 29.56 | 750.8 | 43 | 6.1 | 87 | S | 2 | 0.9 | ..... | ..... | 10n | ..... | S | 0.64 | 16.3 | Light rain | |
| St. Louis, Missouri | 29.13 | 739.9 | 29.68 | 753.9 | 60 | 15.6 | 71 | SE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.53 | 13.5 | Clear | |
| St. Marks, Florida | 29.79 | 756.7 | 29.81 | 757.2 | 68 | 20.0 | 97 | S | 3 | 1.3 | ..... | 2cs | 2ks | W | S | 2.15 | 54.6 | Fair | |
| St. Paul, Minnesota | 29.11 | 739.4 | 29.95 | 760.7 | 42 | 5.6 | 70 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | SE | 0.06 | 1.5 | Cloudy | |
| Salt Lake City, Utah | 25.20 | 640.1 | 29.53 | 750.0 | 35 | 1.7 | 80 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | W | 0.13 | 3.3 | Cloudy | |
| San Antonio, Texas | 29.00 | 736.6 | 29.56 | 750.8 | 70 | 21.1 | 90 | SW | 3 | 1.3 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| San Diego, California | 29.80 | 756.9 | 29.87 | 758.7 | 53 | 11.7 | 86 | SW | 10 | 4.5 | ..... | ..... | 10n | ..... | Calm | 0.38 | 9.7 | Light rain | |
| Sandusky, Ohio | 29.23 | 742.4 | 29.90 | 759.4 | 45 | 7.2 | 84 | E | 24 | 10.7 | ..... | ..... | 10ks | ..... | E | 0.05 | 1.3 | Cloudy | |
| Sandy Hook, New Jersey | 29.95 | 760.7 | 29.97 | 761.2 | 47 | 8.3 | 70 | N | 11 | 4.9 | ..... | 10c | Haze | NW | ..... | 0 | 0 | Cloudy | |
| San Francisco, California | 29.52 | 749.8 | 29.59 | 751.6 | 47 | 8.3 | 70 | S | 2 | 0.9 | ..... | 0 | 8ks | ..... | S | 0.36 | 9.1 | Fair | |
| Santa Fé, New Mexico | 23.00 | 584.2 | 29.54 | 750.3 | 36 | 2.2 | 45 | SW | 2 | 0.9 | ..... | 5k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Savannah, Georgia | 29.75 | 755.6 | 29.81 | 757.9 | 67 | 19.4 | 89 | SE | 3 | 1.3 | ..... | ..... | 10n | ..... | SW | 0.50 | 12.7 | Light rain | |
| Shreveport, Louisiana | 29.44 | 747.8 | 29.64 | 752.8 | 68 | 20.0 | 100 | N | 4 | 1.8 | ..... | ..... | 10s | ..... | W | 2.50 | 63.5 | Threatening | |
| Smithville, North Carolina | 29.80 | 756.9 | 29.83 | 757.7 | 68 | 20.0 | 95 | SW | 4 | 1.8 | ..... | 0 | 8s | ..... | SW | 0 | 0 | Cloudy | |
| Springfield, Massachusetts | 29.77 | 756.1 | 29.90 | 759.4 | 46 | 7.8 | 62 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Stockton, Texas | 26.70 | 678.2 | 29.70 | 754.4 | 45 | 7.2 | 52 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass. | 29.83 | 757.7 | 29.88 | 758.9 | 45 | 7.2 | 76 | NW | 16 | 7.2 | ..... | 10k | 0 | N | ..... | 0 | 0 | Cloudy | |
| Toledo, Ohio | 29.21 | 741.9 | 29.88 | 758.9 | 49 | 9.4 | 64 | NE | 20 | 8.9 | ..... | 10cs | 0 | NE | ..... | 0.04 | 1.0 | Cloudy | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 49 | 9.4 | 77 | Calm | 0 | 0 | ..... | 2k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Tybee Island, Georgia | 29.79 | 756.7 | 29.82 | 757.4 | 68 | 20.0 | 94 | NW | 8 | 3.6 | ..... | ..... | 10n | ..... | W | 0.15 | 3.8 | Light rain | |
| Umatilla, Oregon | 29.41 | 747.0 | ..... | ..... | 32 | 0.0 | 50 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.47 | 748.5 | 29.72 | 754.9 | 68 | 20.0 | 100 | SE | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0.82 | 20.8 | Foggy | |
| Virginia City, Montana | 23.86 | 606.0 | 29.34 | 745.2 | 25 | — 3.9 | 75 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Visalia, California | 29.28 | 743.7 | 29.65 | 753.1 | 45 | 7.2 | 92 | SE | 7 | 3.1 | ..... | ..... | 10n | ..... | Calm | 0.21 | 5.3 | Light rain | |
| Washington, D. C. | 29.84 | 757.9 | 29.96 | 761.0 | 49 | 9.4 | 78 | NE | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 35 | 1.7 | 36 | S | ..... | ..... | 2 | ..... | 10ks | ..... | Calm | 0 | 0 | Threatening | |
| Wilmington, N. Carolina | 29.75 | 755.6 | 29.82 | 757.4 | 70 | 21.1 | 90 | SW | 4 | 1.8 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Winnemucca, Nevada | 25.20 | 640.1 | 29.56 | 750.8 | 26 | — 3.3 | 88 | E | 7 | 3.1 | ..... | 0 | 2s | ..... | Calm | Inap. | Inap. | Fair | |
| Wood's Holl, Mass. | 29.86 | 758.4 | 29.91 | 759.7 | 53 | 11.7 | 79 | NW | 8 | 3.6 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear | |
| Yankton, Dakota | 28.52 | 724.4 | 29.81 | 757.2 | 40 | 4.4 | 91 | E | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0.11 | 2.8 | Cloudy | |
| Yuma, Arizona | 29.69 | 754.1 | 29.86 | 758.4 | 47 | 8.3 | 72 | SE | 4 | 1.8 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| York Factory, B. A. | 30.34 | 770.6 | 30.40 | 772.1 | 18.0 | — 7.8 | 92 | SW | 3 | 1.3 | ..... | 0 | 8s | ..... | ..... | 0.01 | 0.3 | Cloudy | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 29.84 | 757.9 | 29.86 | 758.4 | 80 | 26.7 | 78 | SE | 6.0 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.06 | 763.5 | 30.07 | 763.8 | 77 | 25.0 | 82 | Calm | 0 | 0 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.83 | 757.7 | 29.91 | 759.7 | 82 | 27.8 | ..... | E | 2 | 0.9 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | 29.96 | 761.0 | 29.96 | 761.0 | 84 | 28.9 | 79 | E | ..... | ..... | 3 | ..... | 8ks | ..... | ..... | 0.590 | 14.99 | ½ cloudy | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.23 | 640.8 | ..... | ..... | 68.0 | 20.0 | 88 | Calm | ..... | ..... | 0 | ..... | 10n | ..... | ..... | 0.56 | 14.2 | ..... | Thomas Herran. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medillin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m., Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft, or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,862.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | BAROMETER. As read off. Inches. | BAROMETER. As read off. Millimeters | BAROMETER. Attached Thermometer. Fahrenheit. | BAROMETER. Attached Thermometer. Centigrade. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 1—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Up'er From— | CLOUDS. Direction. Low'r From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | SEA-SWELL. Character. | SEA-SWELL. Direction from— | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.52 | 749.8 | 44 | 6.7 | 42 | 5.6 | 50 | SW | 13 | 5.8 | ..... | ..... | 8 | ..... | SW | 0.31 | 7.9 | ..... | ..... | Cloudy..... | |
| Navy Yard, Pensacola, Fla. | 30.09 | 764.3 | 67 | 19.4 | 67 | 19.4 | 95 | E | 1 | 0.4 | ..... | ..... | Fog | ..... | ..... | 0.23 | 5.8 | ..... | ..... | Cloudy..... | |
| Navy Yard, Portsmouth, N.H. | 29.97 | 761.2 | 69 | 20.6 | 45 | 7.2 | 76 | WNW | 4 | 1.8 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan | 29.92* | 760.0* | 55.5 | 13.1 | 43.5 | 6.4 | 96 | ENE | ..... | ..... | 5 | ..... | 10ks;n | ..... | NE | 1.07 | 27.2 | ..... | ..... | Raining..... | |
| Adams, Panama | 29.97 | 761.2 | 84 | 28.9 | 83 | 28.3 | 83 | W | ..... | ..... | 0–1 | ..... | 8 | ..... | ..... | ..... | ..... | Smooth | ..... | Hazy..... | |
| Alliance, Villefranche, France | 30.21‡ | 767.3‡ | ..... | ..... | 68 | 20.0 | 51 | SW | ..... | ..... | 0–1 | ..... | 1 | ..... | SW | ..... | ..... | None | ..... | Clear ..... | |
| Ashuelot, Shanghai, China | 30.26 | 768.6 | 55 | 12.8 | 53 | 11.7 | 93 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Light rain... | |
| Canonicus, New Orleans, La. | 29.83 | 757.7 | 51 | 10.6 | 70 | 21.1 | 95 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | S | ..... | ..... | ..... | ..... | Cloudy..... | |
| Colorado, New York, N. Y. | 29.95‡ | 760.7‡ | ..... | ..... | 51 | 10.6 | 59 | N | 3 | 1.3 | ..... | ..... | 5 | ..... | WNW | 0 | 0 | ..... | ..... | Hazy..... | |
| Constellation, N. 44° 10′ W. 32° 23′ | 30.05‡ | 763.3‡ | ..... | ..... | 61 | 16.1 | 82 | SW | ..... | ..... | 3 | ..... | 2 | ..... | SW | ..... | ..... | Long Smooth | SW | Clear..... | |
| Constitution, Havre, France | 30.04‡ | 763.0‡ | ..... | ..... | 61 | 16.1 | 71 | NW | ..... | ..... | 1 | ..... | 7 | ..... | W | ..... | ..... | ..... | ..... | Hazy..... | |
| Despatch, Constantinople, Turkey | 30.18‡ | 766.6‡ | ..... | ..... | 57 | 13.9 | 81 | NE | ..... | ..... | 2 | ..... | 2 | ..... | NE | ..... | ..... | ..... | ..... | Fair ..... | |
| Enterprise, Norfolk, Va | 29.93‡ | 760.2‡ | ..... | ..... | 56 | 13.3 | 87 | SE | ..... | ..... | 3 | ..... | 10 | ..... | WNW | ..... | ..... | ..... | ..... | Fair ..... | |
| Franklin, Norfolk, Va. | 29.98 | 761.5 | 63 | 17.2 | 55 | 12.8 | 80 | SE | 7.2 | 3.2 | ..... | ..... | 10 | ..... | NW | 0.08 | 2.0 | ..... | ..... | Cloudy..... | |
| Gettysburg Valetta, Malta | 30.14‡ | 765.5‡ | ..... | ..... | 69 | 20.6 | 90 | NW | ..... | ..... | 1 | ..... | 2 | ..... | Calm | 0 | 0 | ..... | ..... | Clear..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.00 | 762.0 | 78 | 25.6 | 77 | 25.0 | 69 | NE | ..... | ..... | 5 | ..... | 0 | ..... | ..... | ..... | ..... | Ground | NW | Clear ..... | |
| Hartford, Montevideo, Uraguay | 29.74 | 755.4 | 68 | 20.0 | 63 | 17.2 | 72 | W | 6 | 2.7 | ..... | ..... | 0 | ..... | ..... | 0.038 | 0.97 | Smooth | ..... | Clear..... | |
| Marion, Smyrna, Turkey | 29.98 | 761.5 | 66 | 18.9 | 66 | 18.9 | 59 | Calm | ..... | ..... | 0 | ..... | 5 | ..... | ..... | 0 | 0 | Smooth | ..... | Fair ..... | |
| Michigan, Erie, Pa. | 29.43 | 747.5 | 60 | 15.6 | 48 | 8.9 | 78 | E | ..... | ..... | 2 | ..... | 10 | ..... | E | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Monocacy, Shanghai, China | 30.23‡ | 767.8‡ | ..... | ..... | 54 | 12.2 | 87 | N | ..... | ..... | 2 | ..... | 10 | ..... | N | ..... | ..... | ..... | ..... | Overcast..... | |
| New Hampshire, Port Royal, S. C. | 30.07† | 763.8† | ..... | ..... | 68 | 20.0 | 95 | SW | 6 | 2.7 | ..... | ..... | 10 | ..... | W | 0.25 | 6.3 | ..... | ..... | Cloudy ..... | |
| Omaha, N. 29° 50′ W. 71° 36′ | 30.03* | 762.7* | 76 | 24.4 | 68 | 20.0 | 90 | Var. | 1 | 0.4 | ..... | ..... | 5 | ..... | Calm | 0 | 0 | Smooth | ..... | Cloudy..... | |
| Onward, Callao, Peru | 30.05† | 763.3† | ..... | ..... | 68.5 | 20.3 | 87 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, Pensacola, Fla. | 29.79‡ | 756.7‡ | ..... | ..... | 75 | 23.9 | 100 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Rain & fog... | |
| Palos, Shanghai, China | 30.30* | 769.6* | 60 | 15.6 | 52 | 11.1 | 93 | N | ..... | ..... | 2 | ..... | 10 | ..... | N | ..... | ..... | ..... | ..... | Overcast..... | |
| Pensacola, N. 33° 44′, W. 157° 05′ | 30.32 | 770.1 | 64 | 17.8 | 60 | 15.6 | 94 | ESE | 20 | 8.9 | ..... | ..... | 3 | ..... | S | 0.005 | 0.13 | Smooth | SE | Clear..... | |
| Plymouth, Norfolk, Va. | 29.88‡ | 758.9‡ | ..... | ..... | 56 | 13.3 | 81 | ESE | ..... | ..... | 2 | ..... | 10 | ..... | Var. | ..... | ..... | ..... | ..... | Cloudy..... | |
| Powhatan, Norfolk, Va. | 29.89‡ | 759.2‡ | ..... | ..... | 56 | 13.3 | 94 | ESE | 5.4 | 2.4 | ..... | ..... | 10 | ..... | ..... | 0.04 | 1.0 | ..... | ..... | Cloudy..... | |
| Ranger, Amoy, China | 30.15* | 765.8* | ..... | ..... | 71 | 21.7 | 90 | NE | ..... | ..... | 4 | ..... | 4 | ..... | NE | ..... | ..... | Smooth | ..... | D. clouds.... | |
| Rio Bravo, Brownsville, Texas | 29.60 | 751.8 | 73 | 22.8 | 73 | 22.8 | 100 | E | ..... | ..... | 0–1 | ..... | 9 | ..... | E | ..... | ..... | ..... | ..... | Cloudy..... | |
| Santee, Annapolis, Md. | 29.97‡ | 761.2‡ | ..... | ..... | 51 | 10.6 | 65 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | Inap. | Inap. | ..... | ..... | Sprinkling... | |
| Saratoga, Washington, D. C. | 29.88* | 758.9* | ..... | ..... | 49 | 9.4 | 100 | E | ..... | ..... | 1 | ..... | 10 | ..... | NE | Slight | Slight | ..... | ..... | Cloudy..... | |
| St. Louis, League Island, Pa | 29.94 | 760.5 | 65 | 18.3 | 51 | 10.6 | 65 | NE | 2 | 0.9 | ..... | ..... | 8 | ..... | NE | 0 | 0 | ..... | ..... | Cloudy..... | |
| Supply, Havre, France | 30.17 | 766.3 | 62 | 16.7 | 61 | 16.1 | 66 | NW | ..... | ..... | 1 | ..... | 8 | ..... | W | ..... | ..... | ..... | ..... | Misty..... | |
| Swatara, N. 13° 34′, W. 81° 29′ | 29.96 | 761.0 | 83 | 28.3 | 83 | 28.3 | 83 | E | ..... | ..... | 2 | ..... | 2 | ..... | N&E | ..... | ..... | Smooth | ..... | Clear..... | |
| Tennessee, Aden, Arabia | 29.90* | 759.4* | 84 | 28.9 | 82 | 27.8 | 71 | SSE | 4 | 1.8 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Mod'ate | SSE | Hazy..... | |
| Trenton, Villefranche, France | 30.21‡ | 767.3‡ | ..... | ..... | 68 | 20.0 | 70 | S | ..... | ..... | 0–1 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Hazy..... | |
| Tuscarora, Acapulco, Mexico | 29.66 | 753.4 | 76 | 24.4 | 76 | 24.4 | 82 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | Calm | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Vandalia, Villefranche, France | 30.18‡ | 766.6‡ | ..... | ..... | 66 | 18.9 | 59 | S | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Wabash, Boston, Mass. | 29.88‡ | 758.9‡ | ..... | ..... | 46 | 7.8 | 77 | NW | 6 | 2.7 | ..... | ..... | 8 | ..... | NW | 0 | 0 | ..... | ..... | Fair ..... | |
| Wyoming, N. 43° 15′, W. 39° 48′ | 29.82*† | 757.4*† | ..... | ..... | 64 | 17.8 | 78 | SSW | ..... | ..... | 3 | ..... | 4 | ..... | NE | ..... | ..... | Mod'ate | WSW | D. clouds..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | Character. | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | Capt. ——— |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Panama, Victoria, B. C. | | | 29.80* | 759.2* | | | | NW | | | 2 | | 0 | | | | | Clear | Capt. Seabury. |
| S. S. City of Peking, N. 38° 13′, E. 172° 52′ | | | 30.20† | 767.1† | 50 | 10.0 | 100 | W | 31.5 | 14.1 | | | 9 | | W | Rough | NNW | D. clouds | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, N. 34° 00′, W. 172° 35′ | | | | | 56 | 13.3 | | WNW | | | 7 | | | | | Rough | NW | Blue sky | Capt. Maury. |
| S. S. Colima, N. 37° 00′, W. 122° 20′ | | | 29.65† | 753.1† | 54 | 12.2 | 61 | NW | | | 4 | | 6 | | W | Short irregular. | WNW | Showery | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. *Corrected for temperature and elevation; instrumental error not known. †Anerold.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. S. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, N. 48° 53′, W. 31° 39′ | | | 29.83† | 757.7† | 53 | 11.7 | ?? | SE | | | 3 | | 10k | | E | Mod'ate high | SE | Cloudy | Capt. W. H. Thompson. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic, Off Tuskar Light-house | | | 29.96† | 761.0† | 52 | 11.1 | 86 | S | | | 3 | | 5 | | S | None | | D. clouds | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Anerold.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic | | | | | | | | | | | | | | | | | | | Capt. John Metcalf. |
| S. S. Gaelic, N. 27° 00′, E. 128° 50′ | | | 30.02† | 762.5† | 64 | 17.8 | ?? | NE | | | 6 | | k | | NE | Head sea. | NE | Overcast | Capt. W. H. Kidley |
| S. S. Oceanic, N. 35° 28′, E. 136° 8′ | | | 29.88 | 758.9 | 55 | 12.8 | 80 | WNW | | | 5 | | 4 | | NE | Smooth | SW | D. clouds | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Anerold.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | Character | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, Delaware River | | | 30.01* | 762.2* | 49 | 9.4 | 93 | NE | | | 6 | | 4 | | NNE | | | Cloudy | Captain Sargent. |
| S. S. Ohio, Philadelphia, Pa | | | 29.98 | 761.5 | 57 | 13.9 | 87 | NNE | | | 2 | | 8 | | N | | | Clear? | Captain Morrison. |
| S. S. Pennsylvania, N. 49° 33′, W. 17° 52′ | | | 29.65* | 753.1* | 67 | 19.4 | 89 | SW | | | 4 | | 2 | | SW | Light | SW | Clear | Captain Harris. |
| **RED STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| **ALLAN LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
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| S. S. Hibernian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Scandinavian | | | | | | | | | | | | | | | | | | | |
| **MARINE SERIES.** (Miscellaneous.) | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of the Observer named. | | | | | | | | | | | | | | | | | | | |
| Schooner Addie Fuller, Tenants Harbor | | | 29.76 | 755.9 | 58 | 14.4 | 27 | N | 9 | 4.0 | | | 10s | | NE | | | Overcast | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 30.39 | 771.9 | 4 | —15.6 | 95 | W | 10.5 | 4.7 | | 0 | 0 | | | | | Clear | O. T. Sherman. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Corrected for temperature and elevation, instrumental error not known.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Ass't.) Chief Signal Officer, U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 16, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.24 | 768.0 | 65.5 | 18.6 | 80 | NE | ..... | ..... | 7 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Dr. Ollive. |
| Nemours | ..... | ..... | 30.22 | 767 6 | 68 7 | 20.4 | 61 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | 0.079 | 2.0 | Very cloudy | Michel. |
| Algiers | ..... | ..... | 30.12 | 765.0 | 66.2 | 19.0 | 77 | W | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Towilliere. |
| La Calle | ..... | ..... | 30.08 | 764.1 | 65.8 | 18.8 | 84 | NW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 0 | 0 | Very cloudy | Boulangeot. |
| Tunis | ..... | ..... | 30.13 | 765.4 | 81.0 | 27.2 | 34 | SW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0.008 | 0.2 | Cloudy | Jacques. |
| Sfax | ..... | ..... | 30.20 | 767.0 | 68.0 | 20.0 | ..... | W | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Gau. |
| Saida | ..... | ..... | 30.23 | 767.7 | 61.9 | 16.6 | ..... | NNW | ..... | ..... | 5 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Herbin. |
| Tebessa | ..... | ..... | 30.11 | 764.9 | ..... | ..... | ..... | W | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Watrin. |
| Geriville | ..... | ..... | 30.26 | 768.5 | 65.8 | 18.8 | 75 | SE | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Lemaillot. |
| Laghouat | ..... | ..... | 30.26 | 768.5 | 73.4 | 23.0 | 31 | NE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Bertrand. |
| Biskra | ..... | ..... | 30.19 | 766.8 | 78.4 | 25.8 | 39 | SE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.45 | 747.9 | 29.98 | 761.4 | 72.9 | 22.7 | 35 | SW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.18 | 741.2 | 29.93 | 760.1 | 67.3 | 19.6 | 45 | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbiski. |
| Eperies | 29.03 | 737.4 | 29.89 | 759.1 | 66.6 | 19.2 | 47 | Calm | ..... | ..... | 0 | ..... | 9k;s | ..... | S | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.74 | 729.9 | 29.95 | 760.6 | 69.1 | 20.6 | 39 | SSE | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.56 | 725.5 | 29.97 | 761.1 | 58.8 | 14.9 | 52 | NW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0.071 | 1.80 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.58 | 725.8 | 29.84 | 757.9 | 65.5 | 18.6 | 27 | ENE | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner |
| Lemberg | 28.91 | 734.4 | 29.88 | 758.9 | 61.9 | 16.6 | 53 | NE | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Dr. T. Stanecki. |
| Pola | 29.04 | 760.4 | 30.05 | 763.2 | 66.0 | 18.9 | 48 | SSW | ..... | ..... | 1 | ..... | 7cs | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.50 | 749.4 | 29.95 | 760.8 | 69.8 | 21.0 | 41 | SW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.69 | 754.2 | 30.00 | 762.1 | 69.8 | 21.0 | 49 | S | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Karl Stancel. |
| Trieste | 29.94 | 760.4 | 30.04 | 763.0 | 63.9 | 17.7 | 70 | W | ..... | ..... | 1 | ..... | 0? | ..... | ..... | Inap. | Inap. | Raining? | P. Busin. |
| Vienna | 29.44 | 747.7 | 30.13 | 765.4 | 71.6 | 22.0 | 30 | E | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.42 | 721.8 | 29.91 | 759.6 | 57.4 | 14.1 | 74 | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.102 | 2.6 | ..... | Prof. M. Passau. |
| Brussels | 29.62 | 752.3 | 29.82 | 757.3 | 57.2 | 14.0 | 83 | SSW | ..... | ..... | 1 | ..... | 10 | ..... | S | 0.075 | 1.9 | ..... | Royal Observatory. |
| Furnes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.618 | 15.7 | Raining | M. E. de Cae. |
| Maeseyck | 29.76 | 756.0 | 29.89 | 759.2 | 62.8 | 17.1 | 73 | SE | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

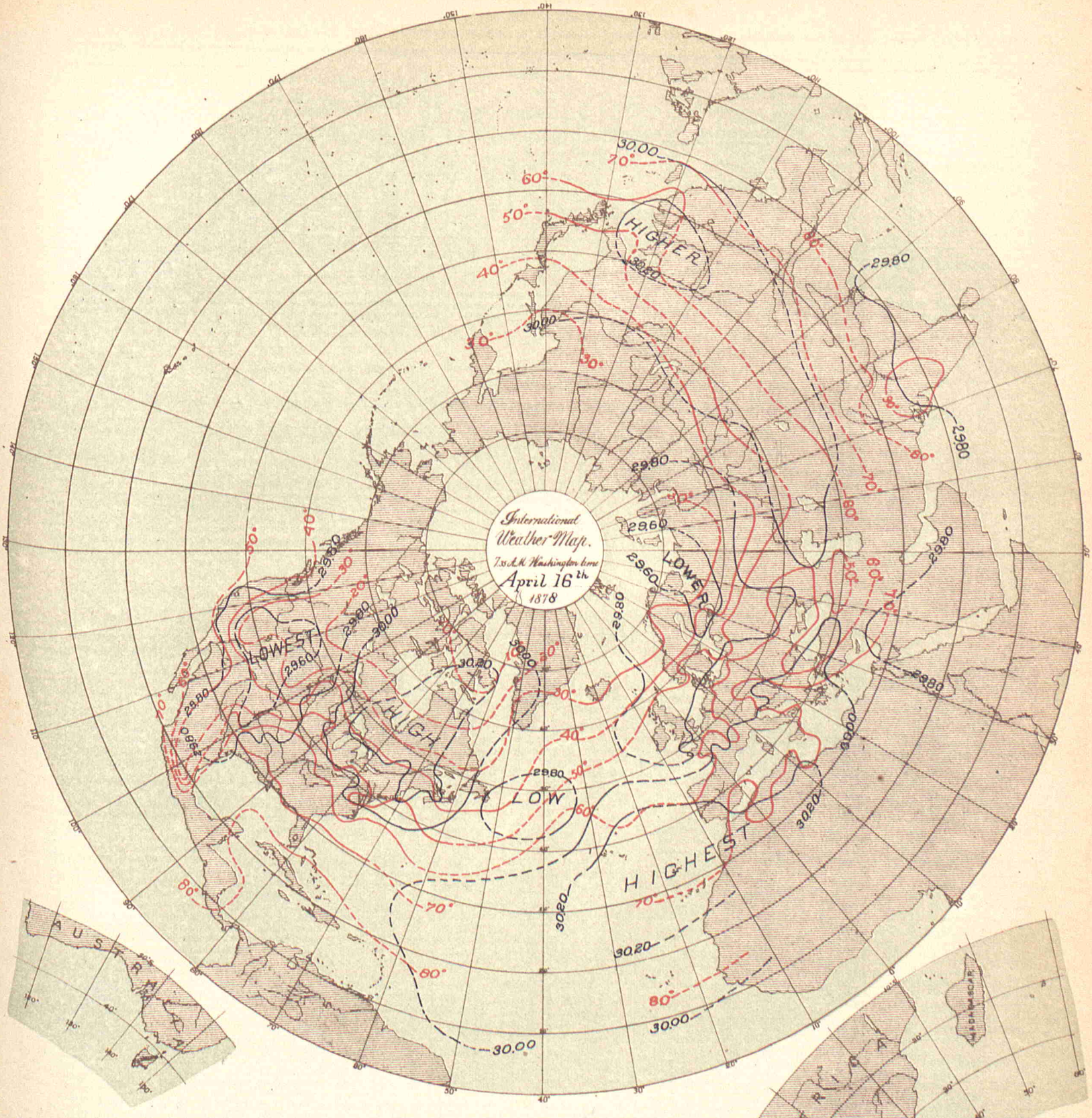
| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.64 | 752.8 | 29.73 | 755.1 | 60.4 | 15.8 | ..... | SSE | 16 | 7.2 | ..... | ..... | 6 | ..... | ..... | 0.300 | 7.62 | D. clouds | W. B swell. |
| Ardrossan | 29.68 | 753.9 | 29.69 | 754.1 | 52 | 11.1 | ..... | SE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Raining | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.66 | 753.4 | 56.3 | 13.5 | ..... | SSE | 12 | 5.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.75 | 755.6 | 56.1 | 13.4 | ..... | SSE | 17 | 7.6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 29.63 | 752.6 | 59.3 | 15.2 | ..... | SSW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | J. L. E. Dreyer. |
| Bradford, Yorkshire | 29.38 | 746.2 | 29.77 | 756.1 | 57.1 | 13.9 | ..... | SW | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast | J. McLandsborough. |
| Bridgetown, (Barbados) | ..... | ..... | 29.94 | 760.5 | 83.0 | 28.3 | ..... | NE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.83 | 757.7 | 53.0 | 11.7 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | H. Todd. [H. O. |
| Cardington | ..... | ..... | 29.83 | 757.7 | 55.0 | 12.8 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John McLaren. |
| Chatham, School M. E. | 29.60 | 751.8 | 29.82 | 757.4 | 55.2 | 12.9 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Q. M. Sergt., Geo. Stuart, R. E. |
| Dartmoor | 28.39 | 721.1 | 29.86 | 758.4 | 49.0 | 9.4 | ..... | SW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | Rain; fog | Alexander Watt. |
| Donaghadee | 29.65 | 753.1 | 29.68 | 753.9 | 55 | 12.8 | ..... | SSW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | J. Mac Gowan. |
| Dover | 29.78 | 756.4 | 29.80 | 756.9 | 51 | 10.6 | ..... | N | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.76 | 755.9 | 55.7 | 13.2 | ..... | S | 2.2 | 1.0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Thomas Mackereth. |
| Falmouth, Observatory | 29.58 | 751.3 | 29.81 | 757.2 | 54.7 | 12.6 | ..... | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.83 | 706.9 | 30.05 | 763.3 | 64.4 | 18.0 | ..... | E | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.66 | 753.4 | 29.89 | 759.2 | 88.0 | 31.1 | ..... | W | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's College | ..... | ..... | 29.57 | 751.1 | 53 | 11.7 | ..... | SW | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.16 | 766.1 | 30.21 | 767.3 | 72.1 | 22.3 | ..... | W | ..... | ..... | 5 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky | Corpl. Wm. Allen, A. H. C. |
| Glasgow, Observatory | 29.51 | 749.5 | 29.72 | 754.9 | 53.1 | 11.7 | ..... | ESE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | D. G. Maclean. |
| Great Yarmouth | 29.83 | 757.7 | 29.83 | 757.7 | 50 | 10.0 | ..... | NW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | Raining | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.65 | 753.1 | 29.82 | 757.4 | 54.0 | 12.2 | ..... | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | The Staff, for G. B. Airy. |
| Guernsey | 29.62 | 752.3 | 29.83 | 757.7 | 57 | 13.9 | ..... | SE | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | Dr. S. E. Hoskins, F. R. S. |
| Helston | ..... | ..... | 29.85 | 758.2 | 58 | 14.4 | ..... | S | ..... | ..... | 2 | ..... | 8n | ..... | ..... | 0.13 | 3.3 | Raining | M. P. Moyle. |
| Holyhead | 29.68 | 753.9 | 29.73 | 755.1 | 51 | 10.6 | ..... | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | John Tilston. |
| Jersey | 29.56 | 750.8 | 29.85 | 758.2 | 53.0 | 11.7 | ..... | SSE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast | J. Fisher. |
| Kew, Observatory | ..... | ..... | 29.82 | 757.4 | 55.3 | 12.9 | ..... | SW | 4 | 1.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | The Staff. |
| Kingstown | 29.66 | 753.4 | 29.69 | 754.1 | 53 | 11.7 | ..... | SSE | ..... | ..... | 3 | ..... | 9 | ..... | ..... | Blank | Blank | Overcast | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.80 | 756.9 | 57.1 | 13.9 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | Wm. J. Harrison, F. G. S. |
| Malta, (Mediterranean) | 30.02 | 762.5 | 30.10 | 764.5 | 69.0 | 20.6 | ..... | NW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | Sgt. Fred. Travis, A. H. |
| Nairn | 29.61 | 752.1 | 29.70 | 754.4 | 56 | 13.3 | ..... | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded | W. D. Penny. [O. |
| Nassau, (Bahamas) | ..... | ..... | 29.92 | 760.0 | 80.4 | 26.9 | ..... | SE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.62 | 752.3 | 29.81 | 757.2 | 57.3 | 14.1 | ..... | SSW | ..... | ..... | 1 | ..... | 10d | ..... | S | 0.055 | 1.40 | Raining | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.28 | 743.7 | 29.80 | 756.9 | 53.0 | 11.7 | ..... | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.81 | 757.2 | 59 | 15.0 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Mr. Lucas. |
| Plymouth | 29.74 | 755.4 | 29.81 | 757.2 | 53.1 | 11.7 | ..... | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Merrifield. |
| Roche's Point | 29.65 | 753.1 | 29.70 | 754.4 | 53 | 11.7 | ..... | SW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | Showers | W. Kennedy. |
| Saint Ann's Head | 29.58 | 751.3 | 29.74 | 755.4 | 51 | 10.6 | ..... | SSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy | John C. Walker. |
| Sandwick Manse, (Orkneys.) | ..... | ..... | 29.74 | 755.4 | 55.4 | 13.0 | ..... | SE | 18 | 8.0 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.98 | 761.5 | 59.0 | 15.0 | ..... | Calm | ..... | ..... | 0 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | Sergt. W. H. Lyne. |
| Sheffield | 29.53 | 750.0 | 29.81 | 757.2 | 58.4 | 14.7 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.09 | 2.3 | Overcast | W. F. Cooper. |
| Silloth Rectory | 29.71 | 754.6 | 29.74 | 755.4 | 54.4 | 12.4 | 94 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0.410 | 10.41 | Overcast | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.38 | 746.2 | 29.78 | 756.4 | 54.1 | 12.3 | ..... | SSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Threatening | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 29.66 | 753.4 | 53 | 11.7 | ..... | S | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded | John Sutherland. |
| Stratfield Turgiss | 29.62 | 752.3 | 29.84 | 757.9 | 54.3 | 12.4 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Showery | Rev. C. H. Griffith, F. M |
| Thurso | ..... | ..... | 29.70 | 754.4 | 61 | 16.1 | ..... | SSE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 29.81 | 757.2 | 55 | 12.8 | ..... | W | ..... | ..... | 7 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 29.65 | 753.1 | 55.1 | 12.8 | ..... | SW | 29 | 13.0 | ..... | ..... | 7 | ..... | ..... | Blank | Blank | D. clouds | The Staff. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.04 | 763.0 | 68.0 | 20.0 | 83 | NW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Francis Abbott, F. R. A. S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.55 | 750.6 | 29.74 | 755.3 | 81.0 | 27.2 | 73 | ESE | 11.0 | 4.9 | ..... | 2 | 6 | ..... | SE | 0 | 0 | Cloudy | C. Meldrum. |
| Melbourne, Observatory | 30.12 | 765.0 | 30.21 | 767.3 | 61.2 | 16.2 | 91 | W | 3 | 1.3 | ..... | ..... | 3 | ..... | N | 0.06 | 1.5 | Fine | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft, or 670.6 m.

## MARINE SERIES.

| VESSELS. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|
| S. S. Algeria | ..... | ..... | ..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | Capt. J. E. Moulland. |
| Ship Camperdown | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | Capt. C. C. Prehn. |
| S. S. Naid, N. 40° 55′ W. 57° 50′ | 3 | NtoNW | Drizzling | Capt. J. Smith. [R. |
| S. S. Peruvian, N. 43° 40′, W. 63° 0′ | 2 | NNE | D. clouds | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | Capt. Alex Simpson. |
| S. S. Yorkshire | ..... | ..... | ..... | Capt. H. Longley. |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.20 | 665.5 | ..... | ..... | 73.0 | 22.8 | 90 | SE | ..... | ..... | 1 | 2ck | 5s; hz | ..... | ..... | 0.3 | 8. | ..... | Federico Maison. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.77 | 756.1 | 29.82 | 757.3 | 58.5 | 14.7 | 61 | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | |
| Fanöe | 29.82 | 757.3 | 29.84 | 757.8 | 52.9 | 11.6 | 82 | WSW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | |
| Godthaab, (Greenland) | 30.01 | 762.2 | 30.05 | 763.3 | 30.6 | — 0.8 | 79 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | |
| Stykkisholm, (Iceland) | 29.84 | 758.0 | 29.89 | 759.1 | 26.1 | — 3.3 | 96 | NE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Thorshavn, (Farõe) | 29.82 | 757.5 | 29.86 | 758.4 | 38.5 | 3.6 | 87 | ENE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | |
| Vestervig | 29.62 | 752.3 | 29.79 | 756.6 | 52.2 | 11.2 | 80 | SW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.41 | 746.9 | 29.96 | 760.9 | 57.2 | 14 | 69 | W | ..... | ..... | 1 | ..... | 8 | ..... | W | 0.701 | 17.8 | Very cloudy | Collignon, Director. |
| Amiens, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bonvarne, Director. |
| Avignon, Normal School | 30.05 | 763.2 | 30.13 | 765.2 | 61.3 | 16.3 | 69 | SW | ..... | ..... | 2 | ..... | 8 | ..... | SE | 0 | 0 | Very cloudy | Mr. Giraud, Director |
| Bar-sur-Seine | 29.40 | 746.8 | 29.95 | 760.8 | 55.6 | 13.1 | 94 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | C. Saillard. |
| Beaumette Obs'y (Angers) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Albert Cheux. |
| Beauvais | ..... | ..... | ..... | ..... | 63.1 | 17.3 | 71 | WSW | ..... | ..... | 3 | ..... | 8 | ..... | WSW | 0.345 | 8 75 | Very cloudy | Normal School. |
| Besançon | 29.13 | 739.9 | 30.01 | 762.3 | 59.9 | 15.5 | 48 | SSW | ..... | ..... | 4 | ..... | 0 | ..... | Inap | Inap. | Covered | Normal School. | |
| Bourg-en-Bresse | 29.20 | 741.6 | 30.08 | 763.9 | 53.8 | 12.1 | 83 | S | ..... | ..... | 4 | ..... | 10n | ..... | SW | ..... | ..... | Raining | Normal School. |
| Bourges, Normal School | 29.37 | 746.1 | 29.92 | 759.9 | 61.2 | 16.2 | 67 | S | ..... | ..... | 4 | ..... | 5 | ..... | S | 0 | 0 | Cloudy | A. Wagner, Director. |
| Brest, Naval Observatory | 29.57 | 751.1 | 29.79 | 756.7 | 57.4 | 14.1 | 84 | W | ..... | ..... | 2 | ..... | 10 | ..... | W | 0.030 | 0.75 | Raining | The Staff. |
| Carcassonne, Normal School | 29.70 | 754.4 | 30.11 | 764.8 | 63.3 | 17.4 | 76 | SW | ..... | ..... | 2 | ..... | 5 | ..... | W | 0.008 | 0.2 | Cloudy | Vateau, Director. |
| Caen | 29.76 | 756.0 | 29.84 | 757.8 | 60.8 | 16 | 87 | SW | ..... | ..... | 1 | ..... | 8 | ..... | SW | 0.177 | 4.5 | Very cloudy | Normal School. |
| Chartres, Normal School | 29.31 | 744.4 | 29.87 | 758.6 | 60.8 | 16 | 89 | W | ..... | ..... | 4 | ..... | 8 | ..... | SW | 0.59 | 15. | ..... | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.58 | 751.4 | 29.90 | 759.4 | 56.1 | 13.4 | 88 | SW | ..... | ..... | 3 | ..... | 10kn | ..... | SW | 0 | 0 | Covered | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.62 | 727.0 | 29.95 | 760.7 | 61.9 | 16.6 | 55 | SE | ..... | ..... | 1 | ..... | 2 | ..... | W | 0.020 | 0.5 | Slightly cl'dy | Alluard, Director. |
| Commercy, Normal School | 29.10 | 739.0 | 29.97 | 761.1 | 57.2 | 14 | 82 | SW | ..... | ..... | 4 | ..... | 5 | ..... | SW | 0 | 0 | Cloudy | Dr. Goulet, Director. |
| Commune de Gréasque* | 29.01 | 736.9 | 30.15 | 765.9 | 61.0 | 16.1 | 33 | E | ..... | ..... | 2 | ..... | 8 | ..... | SE | 0 | 0 | ¾ Covered | M. Kina. |
| Grenoble | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| La Roche-sur-Yon, N. School | 29.75 | 755.6 | 29.96 | 761.0 | 58.3 | 14.6 | 86 | W | ..... | ..... | 4 | ..... | 8 | ..... | W | 0.244 | 6.2 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.62 | 752.4 | 29.93 | 760.1 | 59.5 | 15.3 | 76 | W | ..... | ..... | 6 | ..... | 5 | ..... | W | 0.28 | 7. | Cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.08 | 738.7 | 30.01 | 762.3 | 54.0 | 12.2 | 86 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Voudez, Director. |
| Lorient, Naval Observatory | 29.79 | 756.7 | 29.89 | 759.3 | 59.7 | 15.4 | 83 | WSW | ..... | ..... | 4 | ..... | 8 | ..... | W | 0.150 | 3.8 | ¾ Covered | T. Carré, Director. |
| Mâcon, Normal School | 29.34 | 745.3 | 30.00 | 762.1 | 55.2 | 12.9 | 86 | N | ..... | ..... | 2 | ..... | 10 | ..... | S | 0 | 0 | Covered | M. Marchal, Director. |
| Metz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. A. Schuster, Dir. |
| Mirecourt | 28.80 | 731.5 | 29.83 | 757.7 | 56.8 | 13.8 | 71 | SSW | ..... | ..... | 2 | ..... | 2 | ..... | E | 0.28 | 7. | Slightly cl'dy | Normal School. |
| Nismes, Normal School | 29.91 | 759.7 | 30.11 | 764.8 | 65.5 | 18.6 | 63 | E | ..... | ..... | 1 | ..... | 5 | ..... | N | 0 | 0 | Cloudy | Boyer, Director. |
| Orleans, Normal School | 29.65 | 753.1 | 30.02 | 762.4 | 77.0 | 25 | 72 | W | ..... | ..... | 2 | ..... | 8 | ..... | W | 0 | 0 | Very cloudy | Bernard, Director. |
| Paris, Observatory | 29.62 | 752.3 | 29.85 | 758.3 | 63.5 | 17.5 | 64 | SW | ..... | ..... | 2 | ..... | 7 | ..... | WSW | 0.114 | 2.92 | Very cloudy | National Observatory. |
| Privas | 29.06 | 738.0 | 30.11 | 764.9 | 61.7 | 16.5 | 55 | NE | ..... | ..... | 1 | ..... | 2 | ..... | NE | 0 | 0 | Slightly cl'dy | Normal School |
| Puy de Dome (Summit) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.97 | 761.2 | 30.00 | 762.0 | 59.7 | 15.4 | 58 | SW | ..... | ..... | 6 | ..... | 10 | ..... | SW | 0.20 | 5. | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.76 | 755.8 | 29.84 | 758.0 | 63.7 | 17.6 | 68 | WSW | ..... | ..... | 2 | ..... | 5 | ..... | W | 0.886 | 22.5 | Cloudy | F. Lucard, Director |
| Saint Malo (Port) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. H. Hercouet |
| Tarbes, Normal School | 29.02 | 737.0 | 30.08 | 763.9 | 66.2 | 19 | 54 | ESE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | T. Hugues, Director |
| Villefranche | 29.34 | 745.1 | 30.05 | 763.2 | 55.4 | 13 | 92 | SE | ..... | ..... | 2 | ..... | 10 | ..... | W | 0 | 0 | Covered | Vilot, Director |
| SUB-SERIES. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort de France, Martinique | 29.80 | 757.0 | 29.83 | 757.7 | 82.8 | 28.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Lyons | ..... | ..... | 30.09 | 764.2 | 53.1 | 11.7 | 76 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchési. |
| Marseilles, Observatory | ..... | ..... | 30.12 | 765.0 | 62.6 | 17.0 | 70 | SSW | ..... | ..... | 1–2 | ..... | 10 | ..... | ..... | 0.12 | 3. | Rainy | M. Jeys. |
| Mont-Louis | 24.91 | 632.8 | 30.23 | 767.8 | 43.9 | 6.6 | 76 | ESE | 13.0 | 5.83 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Rainy | The Staff. |
| Nice | ..... | ..... | 30.13 | 765.2 | 62.6 | 17.0 | 90 | SW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0.126 | 3.2 | ..... | Mr. Falguère. |
| Perpignan | 29.58 | 751.2 | 29.85 | 758.2 | 62.4 | 16.9 | 70 | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.051 | 1.3 | Covered | Dr. A. Niepce. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | 30.13 | 765.4 | 59.0 | 15.0 | 78 | E | 1.9 | 0.83 | ..... | ..... | 8 | ..... | SW | 0.130 | 3.3 | ..... | Marié Davy, Director |
| Pic du Midi, (Plantade,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 10 | ..... | NE | 0.362 | 9.2 | ..... | Dr. Fines. |
| Saint Maur, (near Paris) | 22.54 | 572.6 | ..... | ..... | 37.4 | 3.0 | ..... | SW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Toulouse, Observatory | 29.70 | 754.3 | 29.86 | 758.5 | 61.9 | 16.6 | 69 | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.106 | 2.7 | Snowy | Gen'l de Nansouty |
| Tours | 29.39 | 746.5 | 30.11 | 764.9 | 65.1 | 18.4 | 57 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.067 | 1.7 | D clouds | E. Renou. |
| Versailles, (near Paris) | 29.84 | 758.0 | 30.04 | 763.0 | 68.4 | 20.2 | 50 | SSW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0.167 | 4.25 | Raining | The Staff. |
| Zi-Ka-Wei, (near Shanghai) | 30.25 | 768.3 | 30.27 | 768.9 | 51.9 | 10.9 | 90 | ENE | 3.8 | 1.7 | 3 | ..... | 7 | ..... | W | 0.114 | 2.9 | ..... | C. Marquet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 8 | ..... | ..... | 0.242 | 6.15 | Cloudy | Dr. A. Bérigny. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 10kn | ..... | ..... | 0.024 | 0.6 | Covered | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7: no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.06 | 738.1 | 29.90 | 759.4 | 68.0 | 20.0 | 40 | SW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. Dr. Hoh. |
| Berlin | 29.71 | 754.5 | 29.87 | 758.7 | 67.3 | 19 6 | 48 | S | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. Arndt. |
| Breslau | 29.39 | 746.4 | 29.91 | 759.8 | 69.1 | 20.6 | 36 | W | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Royal University Obs'y |
| Carlsruhe | 29.50 | 749.2 | 29.91 | 759.8 | 66.2 | 19.0 | 51 | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.039 | 1.0 | ..... | Albert Senz. |
| Cassel | 29.29 | 744.0 | 29.89 | 759.3 | 69.4 | 20.8 | 41 | SE | ..... | ..... | 5 | ..... | 5 | SSW | ..... | 0.029 | 0.72 | ..... | Dr. H. Möhl. |
| Crefeld | 29.65 | 753.0 | 29.81 | 757.1 | 70.7 | 21.5 | 44 | NE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Director Lose. |
| Emden | 29.82 | 757.3 | 29.85 | 758.2 | 61.3 | 16.3 | 61 | E | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Prestel. |
| Frankfort on the Main | 29.54 | 750.4 | 29.89 | 759.3 | 71 8 | 22.1 | 22 | SSW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Physical Society. |
| Friedrichshafen | 28.56 | 725.4 | 29.98 | 761.4 | 63.5 | 17.5 | 48 | SW | ..... | ..... | 2 | ..... | 6 | SW | ..... | 0.150 | 3.8 | Light rain.. | M. Wilhelm. |
| Hamburg | 29.81 | 757.1 | 29.88 | 758.9 | 60.3 | 15.7 | 67 | SE | ..... | ..... | 1 | ..... .. | 2c | ..... | ..... | 0.008 | 0.2 | Clear..... | Captain F. Hegemann. |
| Kiel | 29.83 | 757.6 | 29.84 | 758.0 | 59.9 | 15.5 | 57 | WSW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.74 | 755.4 | 29.82 | 757.5 | 57.0 | 13.9 | 67 | W | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0.008 | 0.2 | ..... | Prof. E Luther |
| Köslin | ..... | ..... | 29.85 | 758.1 | 57.7 | 14.3 | ..... | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | H. Müller. |
| Leipsic, Observatory | 29.47 | 748.6 | 29.88 | 759.0 | 70.0 | 21.1 | 49 | SE | ..... | ..... | 1 | ..... | 8 | SSW | ..... | 0 | 0 | . ..... | Prof. Bruhns. |
| Memel, Naval School | 29.79 | 756.6 | 29.84 | 757.8 | 47.3 | 8.5 | 84 | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Dense fog... | Reinbrecht von Skalweit. |
| Neufahrwasser | 29.84 | 758.0 | 29.86 | 758.4 | 64.0 | 17.8 | 49 | WNW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0 | 0 | ..... ... | A. Lothes. |
| Posen | 29.64 | 752.9 | 29.93 | 760.2 | 62.2 | 16.8 | 65 | W | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | ..... | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.41 | 746.9 | 29.94 | 760.5 | 64.2 | 17.9 | 45 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Dr. Schur. |
| Stuttgart | 28.98 | 736.0 | 29.88 | 759.0 | 69 3 | 20.7 | 32 | W | ..... | ..... | 2 | ..... | 9 | W | ..... | 0.024 | 0.6 | Raining..... | Prof. Schoder. |
| Treves, (Trier) | 29.27 | 743.5 | 29.79 | 756.7 | 63.5 | 17.5 | 54 | SW | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 0.105 | 2.66 | Foggy ..... | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.43 | 722.2 | 29.88 | 758.9 | 66.2 | 19.0 | 38 | SW | 2 | 1 | ..... | .... .. | 9ck | W | ..... | 0 | 0 | ..... | Dr. Von Bebber. |
| Wustrow, Naval School | 29.92 | 759.9 | 29.96 | 760.9 | 49.8 | 9.9 | 80 | WNW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0.020 | 0.5 | ..... | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.69 | 754.1 | 30.07 | 763.8 | 71.4 | 21.9 | ..... | NE | ..... | ..... | 0.5 | ..... ... | ..... | ..... | ..... | ..... | ..... | Clear..... | Dr. J. F. J. Schmidt. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.81 | 757.1 | 29.86 | 758.4 | 82.0 | 27.8 | 69 | SW | 25? | 11.2? | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | |
| Deesa | 29.34 | 745.2 | 29.80 | 756.9 | 96.0 | 35.6 | 18 | Calm | ..... | ..... | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | |
| Bombay | 29.73 | 755.2 | 29.77 | 756.2 | 84.5 | 29.2 | 70 | WNW | 13 | 5.8 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Blue sky..... | |
| Poona | 27.74 | 704.7 | 29.69 | 754.1 | 92.1 | 33.4 | 35 | NE | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Blue sky..... | |
| Lahore | 29.08 | 738.7 | 29.82 | 757.4 | 84.8 | 29.3 | 35 | SW | 1.9 | 0.8 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | D. clouds..... | |
| Belgaum | 27.25 | 692.2 | 29.74 | 755.3 | 85.8 | 29.9 | 60 | W | 17 | 7.6 | ..... | ..... | 1 | ..... | E | 0 | 0 | ..... | |
| Bangalore | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Roorkee | 28.94 | 735.0 | 29.84 | 758.0 | 78.4 | 25.8 | 50 | Calm | 1.6 | 0.7 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Agra | 29.28 | 743.6 | 29.83 | 757.8 | 87.7 | 30.9 | 34 | N | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Trichinopoly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nagpur | 28.75 | 730.2 | 29.77 | 756.2 | 89 | 31.7 | 26 | W | 4.1 | 1.8 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Blue sky..... | |
| Madras | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Lucknow | 29.45 | 748.0 | 29.81 | 757.3 | 88.7 | 31.5 | 43 | SW | 2.6 | 1.2 | ..... .. | ..... | ..... | ..... | ..... | 0 | 0 | Blue sky..... | |
| Allahabad | 29.50 | 749.4 | 29.81 | 757.2 | 84.2 | 29.0 | 38 | Calm | 1.3 | 0.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | |
| Patna | 29.64 | 752.8 | 29.82 | 757.4 | 84.8 | 29.3 | 28 | W | 1.6 | 0.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | |
| Hazaribagh | 27.81 | 706.3 | 29.81 | 757.2 | 79.8 | 26.6 | 31 | W | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | D. clouds..... | |
| Cuttack | 29.72 | 754.8 | 29.80 | 756.8 | 88.1 | 31.2 | 40 | S | 3.1 | 1.4 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | Blue sky..... | |
| Calcutta (Alipore) | 29.79 | 756.6 | 29.81 | 757.1 | 83.7 | 28.7 | 68 | NNW | 2 | 0.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | |
| Goalpara | 29.41 | 747.0 | 29.80 | 756.8 | 79.6 | 26.4 | 45 | Calm | 2.8 | 1.3 | ..... | ..... | 0 | ..... | ..... | 0.20 | 5.1 | Blue sky..... | |
| Chittagong | 29.73 | 755.0 | 29.82 | 757.3 | 84.9 | 29.4 | 50 | Calm | 3.6 | 1.6 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Misty..... | |
| Sibsagar | 29.54 | 750.3 | 29.88 | 759.0 | 74.6 | 23.7 | 71 | ENE | 2.5 | 1.1 | ..... | ..... | 10 | W | W | 0.20 | 5.1 | D. clouds..... | |
| Rangoon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Jubbulpore | 28.46 | 722.8 | 29.80 | 756.9 | 88.4 | 31.3 | 17 | NW | 2.7 | 1.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Blue sky..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.59 | 751.6 | 30.00 | 761.9 | 70.0 | 21.1 | 37 | S | 4.8 | 1.9 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 29.88 | 758.9 | 29.98 | 761.6 | 67.8 | 19.9 | 44 | W | 0.7 | 0.3 | ..... | ..... | 4 | SW | ..... | 0.020 | 0.5 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.79 | 756.7 | 29.98 | 761.5 | 69.4 | 20.8 | 42 | SE | 3.8 | 1.7 | ..... | ..... | 1 | W | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.71 | 729.2 | 30.01 | 762.2 | 67.6 | 19.8 | 32 | W | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.52 | 749.8 | 30.03 | 762.8 | 70.3 | 21.3 | ..... | SW | ..... | ..... | 2 | ..... | 8 | SW | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.11 | 739.5 | 30.02 | 762.4 | 64.9 | 18.3 | 46 | NNW | 1.3 | 0.6 | ..... | ..... | 6 | SW | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 28.12 | 714.2 | 30.02 | 762.4 | 62.8 | 17.1 | 50 | E | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.87 | 758.8 | 30.10 | 764.4 | 63.0 | 17.2 | 65 | SE | ..... | ..... | 2 | ..... | 8 | SW | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.93 | 760.3 | 30.10 | 764.6 | 63.3 | 17.4 | 54 | SE | 5.6 | 2.5 | ..... | ..... | 4 | SW | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.72 | 754.9 | 30.03 | 762.8 | 67.5 | 19.7 | 34 | SW | ..... | ..... | 8 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.82 | 757.4 | 30.08 | 763.9 | 68.9 | 20.5 | 36 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 30.03 | 762.8 | 30.11 | 764.9 | 66.0 | 18.9 | 51 | W | 4.9 | 2.2 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 30.06 | 763.4 | 30.10 | 764.6 | 66.0 | 18.9 | 45 | NE | 12.5 | 5.6 | ..... | ..... | 5 | W | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.56 | 725.4 | 30.11 | 764.8 | 66.2 | 19.0 | 50 | SW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 30.02 | 762.6 | 30.13 | 765.4 | 67.6 | 19.8 | 55 | WSW | ..... | ..... | 2 | ..... | 2 | S | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.98 | 761.5 | 30.15 | 765.9 | 68.2 | 20.1 | 53 | W | 7.4 | 3.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrar |
| Naples, O. U | 29.99 | 761.8 | 30.19 | 766.9 | 67.1 | 19.5 | 59 | SSW | ..... | ..... | 4 | ..... | 5 | S | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 66.2 | 19.0 | 53 | NE | 4.9 | 2.2 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.87 | 758.6 | 30.06 | 763.4 | 68.0 | 20.0 | 61 | SE | ..... | ..... | 2 | ..... | 7 | W | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.28 | 743.6 | 30.16 | 766.0 | 69.8 | 21.0 | 66 | WSW | 8.7 | 3.9 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.89 | 759.3 | 30.15 | 765.7 | 63.3 | 17.4 | 54 | E | 3.8 | 1.7 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.89 | 759.1 | 29.96 | 761.0 | 60.3 | 15.7 | 78 | NE | ..... | ..... | 4 | ..... | 7 | NNE | ..... | 0.028 | 0.7 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.62 | 752.4 | 30.18 | 766.5 | 63 5 | 17.5 | 62 | WSW | 0 | 0 | ..... | ..... | 4 | SW | ..... | 0.028 | 0.7 | ..... | Prof. F. Brioschi. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nagasaki | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Tokei (Yeddo) | 30.00 | 762.0 | 30.07 | 763.8 | 45.2 | 7.3 | 53 | SSW | 2.0 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | The Observatory. |
| Tokei (Yeddo) University | 29.96 | 761.0 | 30.06 | 763.5 | 47 5 | 8.6 | 89 | SE | 2 | 0.9 | ..... | 2cs | ..... | ..... | ..... | 0 | 0 | Fair | Prof. P. V. Veeder. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 69.3 | 20.7 | 27 | NW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | L. Castillo, A. E. |
| Guadalajara | 25.00 | 634.9 | 30.06 | 763.5 | 42.8 | 6.0 | 52 | S | 0.9 | 0.4 | ..... | 0 | 1 | ..... | S | 0 | 0 | Clear | Prof. L. Perez. |
| Guanajuato | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 58.1 | 14.5 | 41 | NNW | 0.9 | 0.4 | ..... | 1cs | 0 | SW | ..... | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico | 23.04 | 585.2 | 30.05 | 763.3 | 54.1 | 12.3 | 35 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 50.5 | 10.3 | 46 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | M. V. de Leon, M. E. |
| Puebla | 23.29 | 591.5 | 30.00 | 762.1 | 48.9 | 9.4 | 47 | ENE | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. F. R. Bayly. |
| San Luis Potosi | 29.77 | 756.3 | 29.79 | 756.6 | 77.0 | 25.0 | 69 | ESE | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | G. Barroeta, M. D |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. J. Rossell. |
| Zacatecas | 29.80 | 756.9 | 29.83 | 757.6 | 77.0 | 25.0 | 68 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | ..... | ..... | ..... | ..... | 53.6 | 12.0 | 45 | S | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | P. Spina. [M.M. D. D |
| Morelia | 23.24 | 590.4 | 29.99 | 761.7 | 48.6 | 9.2 | 81 | E | 0.4 | 0.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | M. Tena, F. L. Param. |
| Durango | 23.98 | 609.0 | ..... | ..... | 57.2 | 14.0 | 54 | SW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Slightly hazy | M. V. de Leon, C. E. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,591.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,2825 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.84 | 757.8 | 29.84 | 757.8 | 53.6 | 12.0 | ..... | NE | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 29.80 | 757.0 | 29.86 | 758.4 | 58.8 | 14.9 | ..... | E | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 29.84 | 758.0 | 29.84 | 758 0 | 54.0 | 12.2 | ..... | NE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.465 | 11.8 | ..... | |
| Hellevoetsluis | 29.84 | 757 8 | 29.84 | 757.8 | 56.5 | 13.6 | 85 | Calm | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.81 | 757.1 | 29.85 | 758 3 | 61.0 | 16.1 | 67 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.083 | 2.1 | Dull | H. v d Brink. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.70 | 754.3 | 29.75 | 755.7 | 45.7 | 7.6 | 98 | S | 6 5 | 2.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Rain and fog | |
| Brönö | 29.63 | 752.7 | 29.67 | 753.7 | 30.2 | — 1.0 | 92 | S | 18 | 8 | ..... | ..... | 10 | ..... | ..... | 0* | 0 | ..... | |
| Christiania | 29.45 | 748.0 | 29.59 | 751.6 | 60.1 | 15.6 | 48 | SW | 7 | 3 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.64 | 752.8 | 29.68 | 753.9 | 31.3 | — 0.4 | 89 | SE | 4 | 2 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.13 | 765.3 | 30.32 | 770.2 | 62.8 | 17.1 | 94 | WSW | 1.3 | 0.6 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.24 | 742.6 | 30.25 | 765.4 | 66.2 | 19.0 | 49 | SW | 9.8 | 4.4 | ..... | ..... | 7 | WNW | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos |
| Fanchal, (Madeira) | 30.30 | 769.5 | 30.38 | 771.7 | 68.5 | 20.3 | 64 | SW | 4.9 | 2.2 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.94 | 760.5 | 30.30 | 769.6 | 64.4 | 18.0 | 61 | WNW | 11.2 | 5.0 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.30 | 769.5 | 30.37 | 771.3 | 65.5 | 18.6 | 84 | SW | 13.0 | 5.8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.84 | 757.8 | 29.84 | 758.0 | 84.2 | 29.0 | ..... | S | ..... | ..... | 5 | ..... | 2 | ..... | S | 2 | ..... | Blue sky | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Rio Douro, S. 25° 58′, E. 32° 37′ | ..... | ..... | 30.19 | 766.8 | 77.9 | 25.5 | ..... | SSE | ..... | ..... | 4 | ..... | 10 | ..... | S | 3 | SSE | Threatening | J. T. d'Oliveria, Com'd't. |
| Sado, Porto Praya, Cape Verde Islands. | 30.10* | 764.5* | 30.11* | 764.8* | 86.0 | 30.0 | ..... | NNE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 3 | NE | Blue sky | A. N. P. Sampaio, Com'd't. |
| S& da Bandeira, St. Paul de Loanda, Lower Guinea | 29.78 | 756.4 | 29.79 | 756.6 | ..... | ..... | ..... | NW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 1 | ..... | D. clouds | F. Texeira da Silva, Com'd't. |
| Tejo, N. 22° 10′ E. 113° 32′ | ..... | ..... | 29.98 | 761.5 | 77.0 | 25.0 | ..... | ENE | ..... | ..... | 2 | ..... | 1c | ..... | ENE | 1 | ENE | ..... | F. J. Ferreina, dos Annas, Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level: the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.47 | 748.4 | 29.88 | 758.9 | 61.2 | 16.2 | 63 | W | 16 | 7 | ..... | ..... | 1ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.39 | 746.5 | 29.80 | 757.0 | 58.5 | 14.7 | 56 | WSW | 2 | 1 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | Heavy clouds | Astronomical Obs. |
| Dorpat | 29.43 | 747.6 | 29.68 | 753.8 | 49.6 | 9.8 | 78 | W | 7 | 3 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.58 | 751.3 | 29.60 | 751.7 | 37.9 | 3.3 | 97 | NW | 11 | 5 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.23 | 742.5 | 29.56 | 750.7 | 40.6 | 4.8 | 68 | NW | 7 | 3 | ..... | ..... | 5 [n | ..... | ..... | Blank | Blank | ..... | Ch. Forsten. |
| Kieff | 29.16 | 740.7 | 29.78 | 756.5 | 59.2 | 15.1 | 66 | SW | 7 | 3 | ..... | ..... | 7k;ks;c; | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.84 | 757.9 | 29.91 | 759.7 | 62.6 | 17.0 | 54 | S | 9 | 4 | ..... | ..... | 5cs | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.94 | 760.5 | 29.96 | 761.0 | 64.6 | 18.1 | 47 | NNW | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.23 | 742.5 | 29.78 | 756.3 | 55.0 | 12.8 | 67 | S | 9 | 4 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.59 | 751.6 | 29.79 | 756.7 | 66.0 | 18.9 | 30 | SE | 2 | 1 | ..... | ..... | 4ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.49 | 749.0 | 29.51 | 749.5 | 22.3 | — 5.4 | 85 | NE | 18 | 8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Ogorodnikof. |
| Tiflis | 28.50 | 724.0 | 29.94 | 760.4 | 48.9 | 9.4 | 87 | E | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.10 | 764.5 | 30.02 | 762.4 | 57.4 | 14.1 | 36 | SSE | 2 | 1 | ..... | ..... | 3cs | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Krotkowo* | 29.42 | 747.3 | 29.89 | 759.2 | 54.0 | 12.2 | 35 | W | 7 | 3 | ..... | ..... | 1k | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.59 | 751.6 | 29.86 | 758.5 | 46.2 | 7.9 | 49 | Calm | 0 | 0 | ..... | ..... | 10k | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.85 | 732.7 | 29.82 | 757.3 | 35.1 | 1.7 | 45 | W | 31 | 14 | ..... | ..... | 4ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.77 | 756.2 | 30.00 | 762.1 | 59.0 | 15.0 | 25 | NNE | 9 | 4 | ..... | ..... | 8ck | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.41 | 721.5 | 30.10 | 764.4 | 60.4 | 15.8 | 68 | NE | 4 | 2 | ..... | ..... | 8k | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.47 | 748.5 | 29.99 | 761.8 | 49.8 | 9.9 | 38 | SW | 22 | 10 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.65 | 753.1 | 29.98 | 761.5 | 37.4 | 3.0 | 70 | 'S | 16 | 7 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 30.07 | 763.8 | 30.21 | 767.4 | 62.8 | 17.1 | 24 | Calm | 0 | 0 | ..... | ..... | 5ks | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.88 | 708.2 | 29.97 | 761.3 | 39.0 | 3.9 | 64 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 30.10 | 764.4 | 30.19 | 766.8 | 43.7 | 6.5 | 70 | NNE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 24.8 | — 4.0 | 73 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.98 | 761.6 | 30.09 | 764.3 | 61.9 | 16.6 | 64 | ESE | 2.4 | 1.06 | ..... | 0 | 3k | ..... | ..... | 0.012 | 0.31 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.10 | 764.5 | 30.15 | 765.9 | 61.7 | 16.5 | 75 | NW | 3.5 | 1.54 | ..... | ..... | 10 | ..... | ..... | 0.012 | 0.3 | Covered | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.18 | 690.3 | ..... | ..... | 62.2 | 16.8 | 72 | W | 8.7 | 3.87 | ..... | ..... | 8 | ..... | ..... | 0.008 | 0.2 | Drizzling | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.93 | 709.4 | 30.12 | 765.0 | 67.3 | 19.6 | 52 | SW | 14.2 | 6.33 | ..... | 0 | 5 | ..... | ..... | 0 | 0 | Cloudy | The Staff. |
| Murcia, Met. Obs'y | 29.91 | 759.8 | 30.06 | 763.5 | 80.4 | 26.9 | 42 | SW | 1.4 | 0.64 | ..... | 2 | 5 | SE | ..... | 0 | 0 | Cloudy | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.24 | 742.8 | 30.14 | 765.5 | 59.4 | 15.2 | 78 | SW | 8.7 | 3.89 | ..... | 5 | 4 | SW | ..... | 0.465 | 11.8 | Almost cov. | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.80 | 757.0 | 29.87 | 758.7 | 80.8 | 27.1 | 79 | S | 9.8 | 4.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 30.19 | 766.8 | 30.29 | 769.3 | 65.5 | 18.6 | 68 | WNW | 22.9 | 10.3 | ..... | 0 | 4 | ..... | W | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.89 | 759.1 | 29.98 | 761.4 | 81.0 | 27.2 | 86 | S | 0 | 0 | ..... | 6cs | 4kn | S | S | 0.010 | 0.25 | Cloudy | Leonardo de Tejeda, Chief of Engineers. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the cooperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATION. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.65 | 753.1 | 29.69 | 754.1 | 32.4 | 0.2 | ..... | N | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.64 | 752.9 | 29.69 | 754.2 | 36.0 | 2.2 | 72 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.63 | 752.7 | 29.69 | 754.0 | 36.1 | 2.3 | 70 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.48 | 748.7 | 29.65 | 753.2 | 49.6 | 9.8 | 79 | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0.071 | 1.8 | ..... | |
| Wisby | 29.67 | 753.5 | 29.72 | 755.0 | 48.9 | 9.4 | 82 | W | ..... | ..... | 6 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.55 | 750.5 | 29.62 | 752.4 | 45.5 | 7.5 | 95 | WSW | 6.0 | 2.7 | ..... | ..... | 10 | ..... | SW | 0.117 | 2.97 | Foggy..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.03 | 727.2 | 30.04 | 763.1 | 58.8 | 14.9 | 40 | SSW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0 | 0 | Covered..... | The Observatory. |
| Zurich | 28.37 | 720.6 | 29.99 | 761.8 | 63.9 | 17.7 | 43 | W | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0.047 | 1.2 | Covered..... | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +2.9 mm.; Thermometer, +2.9 cent.; Relative Humidity, —17 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.07 | 763.8 | 58.6 | 14.8 | 00 | S | 7 | 3.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanides. |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear..... | A. Bertrand. |
| Valona | ..... | ..... | 30.17 | 766.2 | 70.9 | 21.6 | ..... | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Imperial Observatory. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.65 | 753.1 | 29.76 | 756.0 | 68.9 | 20.5 | 73 | WSW | ..... | ..... | 3 | ..... | 9c;ks | ..... | SW | 0 | 0 | D. clouds.... | Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.14 | 765.5 | 30.22 | 767.6 | 39.6 | 4.2 | 82 | Calm | 0 | 0 | ..... | 5k | 0 | NE | ..... | ..... | ..... | Fair..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.87 | 758.7 | 30.18 | 766.6 | 46 | 7.8 | ..... | NE | 5 | 2.2 | ..... | ..... | 8s | ..... | W | 0 | 0 | Cloudy..... | W. R. Bigg. |
| *Chatham, N B | 30.17 | 766 3 | 30.23 | 767.8 | 38 | 3.3 | 77 | E | 3 | 1.3 | ..... | 2k | 2ks | NE | NE | 0.04 | 1.0 | Fair..... | G. A. Blair. |
| Charlottetown, P. E. Island. | 30.13 | 765.3 | 30.17 | 766.3 | 35 | 1.7 | 80 | N | 12 | 5.4 | ..... | 10ks | ..... | ..... | N | 0.010 | 0.25 | Cloudy..... | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.96 | 761.0 | 30.16 | 766.1 | 46.9 | 8.3 | 75 | E | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0 | 0 | Overcast.... | James Smith, M. A. |
| Dalhousie, N. B | 30.16 | 766.1 | 30.19 | 766.8 | ..... | ..... | ..... | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy..... | H. A. Johnson. |
| Esquimault, B. C | 29.81 | 757.2 | 29.86 | 758.4 | 40.1 | 4.5 | 83 | Calm | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Cloudy..... | W. H. Revis. |
| *Father Point, Quebec | 30.19 | 766.8 | 30.21 | 767 3 | 36 | 2.2 | 85 | Calm | 0 | 0 | ..... | 5k | 2s | N | N | 0 | 0 | Fair..... | J. McWilliams. |
| Fredericton, N. B | 30.17 | 766.3 | 30.23 | 767 8 | 42.7 | 5.9 | 78 | Calm | 0 | 0 | ..... | ..... | 1s | ..... | ..... | 0 | 0 | Clear..... | Prof. Harrison. |
| *Fort Garry Manitoba | 29.13 | 739.9 | 29.98 | 761.5 | 32 | 0.0 | 96 | E | 14 | 6.3 | ..... | ..... | 10n | ..... | ..... | 0.40 | 10.2 | Heavy snow | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.99 | 736.3 | 30.10 | 764.5 | 47 | 8.3 | 77 | E | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | James Grant. |
| *Halifax, N. S | 29.96 | 761.0 | 30.10 | 764.5 | 42 | 5.6 | 68 | NE | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear..... | F. Allison, M. A. |
| Hamilton, Ontario | 29.78 | 756.4 | 30.15 | 765.8 | 48.2 | 9.0 | 77 | NE | ..... | ..... | 1 | 0 | ..... | ..... | ..... | 0 | 0 | Clear..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.77 | 756.1 | 29.80 | 756.9 | 31 | — 0.6 | 100 | N | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.22 | 5.6 | Overcast.... | E. Weedon. |
| *Kingston, Ontario | 29.83 | 757.7 | 30.17 | 766.3 | 42 | 5.6 | 79 | N | 5 | 2.2 | ..... | 2c | 8ks | Calm | Calm | 0 | 0 | Cloudy..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.04 | 763.0 | 30.08 | 764.0 | 32.5 | 0.3 | ..... | N | 7 | 3.1 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast.... | C. H. Rigby. |
| *Montreal, Quebec | 29.97 | 761.2 | 30.17 | 766.3 | 43 | 6.1 | 87 | E | 3 | 1.3 | ..... | 8k | 2s | ..... | ..... | 0 | 0 | Cloudy..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.49 | 749.0 | 30.20 | 767.1 | 42 | 5.6 | 75 | N | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Rev. R. Mosley. |
| Peterboro, Ontario | 29.41 | 747.0 | 30.16 | 766.1 | 52.7 | 11.5 | 66 | Calm | ..... | ..... | ..... | 0 | 5ck | ..... | ..... | 0 | 0 | Clear..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.41 | 747.0 | 30.11 | 764.8 | 46 | 7.8 | 78 | NE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | H. Morgan. |
| Port Hastings, N. S | 30.07 | 763.8 | 30.12 | 765.0 | 36.8 | 2.7 | ..... | NW | 7 | 3.1 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine..... | Peter Grant. |
| Port Stanley, Ontario | 29.43 | 747.5 | 30.08 | 764.0 | 46 | 7.8 | 78 | NE | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear..... | M. Payne. |
| *Quebec, Quebec | 29.88 | 758.9 | 30.21 | 767.3 | 41 | 5.0 | 78 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.77 | 756.1 | 30.25 | 768.3 | 39 | 3.9 | 82 | NW | 4 | 1.8 | ..... | ..... | 8s | ..... | NW | 0 | 0 | Fair..... | W. H. McIntyre. |
| St. Andrews, N. B | 30.14 | 765.5 | 30.19 | 766.8 | 44 | 6.7 | 71 | NE | 1 | 0.4 | ..... | 2c | 2s | NE | ..... | 0 | 0 | Clear..... | Dr. Gove. |
| St. John, N. B | 30.04 | 763.0 | 30.21 | 767.3 | 37 | 2.8 | 90 | N | 1 | 0.4 | ..... | ..... | 0 | ..... | ..... | Inap. | Inap. | Fine..... | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.44 | 747.8 | 30.16 | 766.1 | 48 | 8.9 | 84 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | K. Stewart. |
| Stayner, Ontario | 29.39 | 746.5 | 30.17 | 766.3 | 49 | 9.4 | 81 | SE | 5 | 2.2 | ..... | 2k | 0 | E | ..... | 0 | 0 | Fair..... | R. J. Cole. |
| Stratford, Ontario | 28.82 | 732.0 | 30.11 | 764.8 | 45.6 | 7.6 | 75 | E | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.04 | 763.0 | 30.07 | 763.8 | 34 | 1.1 | 78 | N | 13 | 5.8 | ..... | ..... | 10s | ..... | N | 0.12 | 3.0 | Cloudy..... | T. C. Hill. |
| *Toronto, Ontario | 29.77 | 756.1 | 30.15 | 765.8 | 48 | 8.9 | 74 | NE | 6 | 2.7 | ..... | 2k | 0 | E | ..... | 0 | 0 | Fair..... | Magnetic Observatory |
| Windsor, N. S | 30.01 | 762.2 | 30.11 | 764.8 | 40.0 | 4.4 | 73 | N | 12 | 5.4 | ..... | ..... | 9ks | ..... | ..... | 0 | 0 | Fair..... | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 32.5 | 0.3 | 100 | NE | ..... | ..... | ..... | 4k | 4s | ..... | ..... | 0.10 | 2.5 | Unsettled.... | John Delany. |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.93 | 760.2 | 30.16 | 766.1 | 48 | 8.9 | 78 | N | 2 | 0.9 | ..... | 5c | Haze | SE | ..... | 0 | 0 | Fair | |
| Alpena, Michigan | 29.53 | 750.0 | 30.19 | 766.8 | 42 | 5.6 | 65 | NE | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Atlantic City, New Jersey | 30.10 | 764.5 | 30.12 | 765.0 | 48 | 8.9 | 85 | E | 24 | 10.7 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Augusta, Georgia | 29.70 | 754.4 | 29.88 | 758.9 | 70 | 21.1 | 80 | N | 4 | 1.8 | ..... | 2cs | 5ks | Calm | N | 0.15 | 3.8 | Fair | |
| Baltimore, Maryland | 30.07 | 763.8 | 30.12 | 765.0 | 50 | 10.0 | 79 | NE | 7 | 3.1 | ..... | ..... | 10n | ..... | Calm | 0.11 | 2.8 | Light rain | |
| Barnegat, New Jersey | 30.12 | 765.0 | 30.14 | 765.5 | 48 | 8.9 | 85 | E | 20 | 8.9 | ..... | ..... | 10n | ..... | E | Inap. | Inap. | Light rain | |
| Bismarck, Dakota | 27.89 | 708.4 | 29.74 | 755.4 | 39 | 3.9 | 91 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | SW | 1.57 | 39.9 | Cloudy | |
| Boise City, Idaho | 26.75 | 679.4 | 29.63 | 752.6 | 31 | — 0.6 | 68 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Boston, Massachusetts | 30.06 | 763.5 | 30.22 | 767.6 | 46 | 7.8 | 62 | NE | 10 | 4.5 | ..... | 5ck | 2s | NE | NE | 0 | 0 | Fair | |
| Brackettville, Texas | 28.66 | 728.0 | 29.65 | 753.1 | 70 | 21.1 | 85 | E | 1 | 0.4 | ..... | 5k | 0 | S | ..... | 0 | 0 | Fair | |
| Breckenridge, Minnesota | 28.82 | 732.0 | 29.81 | 757.2 | 45 | 7.2 | 96 | SE | 24 | 10.7 | ..... | ..... | 10s | ..... | S | 0.40 | 10.2 | Cloudy | |
| Brownsville, Texas | 29.73 | 755.1 | 29.79 | 756.7 | 75 | 23.9 | 81 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Buffalo, New York | 29.39 | 746.5 | 30.10 | 764.5 | 45 | 7.2 | 84 | NE | 8 | 3.6 | ..... | 2ck | 2s | NE | Calm | 0 | 0 | Fair | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Burlington, Vermont | 29.93 | 760.2 | 30.19 | 766.8 | 47 | 8.3 | 77 | Calm | 0 | 0 | ..... | 10cs | 0 | W | ..... | 0 | 0 | Cloudy | |
| Cairo, Illinois | 29.56 | 750.8 | 29.94 | 760.5 | 63 | 17.2 | 78 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Grant, Arizona | 25.05 | 636.3 | 29.84 | 757.7 | 53 | 11.7 | 34 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | 26.51 | 673.3 | 30.00 | 762.0 | 41 | 5.0 | 74 | S | ..... | ..... | 1 | ..... | 10s | ..... | Calm | Inap. | Inap. | Threatening | |
| Campo, California | 27.21 | 691.1 | 29.78 | 756.4 | 37 | 2 8 | 90 | SW | 5 | 2 2 | ..... | ..... | 10s | ..... | SW | 1.83 | 40 5 | Cloudy | |
| Cape Hatteras, N. Carolina | 29.80 | 756.9 | 29.80 | 756.9 | 62 | 16 7 | 100 | N | 7 | 3.1 | ..... | 5k | 5ks | Calm | Calm | Inap. | Inap. | Cloudy | |
| Cape Henry, Virginia | 29.93 | 760.2 | 29.95 | 760.7 | 50 | 10.0 | 93 | NE | 41 | 18.3 | ..... | ..... | 10n | ..... | NE | 0.11 | 2.8 | Light rain | |
| Cape Lookout, N. Carolina | 29.82 | 757.4 | 29.83 | 757.7 | 59 | 15.0 | 100 | N | 22 | 9.8 | ..... | ..... | 10s | ..... | N | 0.75 | 19.1 | Cloudy | |
| Cape May, New Jersey | 30.06 | 763.5 | 30.10 | 764.5 | 49 | 9.4 | 85 | E | 16 | 7.2 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Charleston, South Carolina | 29.82 | 757.4 | 29.88 | 758.9 | 65 | 18.3 | 94 | NE | 13 | 5.8 | ..... | ..... | 10s | ..... | NE | 2.01 | 51.1 | Cloudy | |
| Cheyenne, Wyoming | 23.70 | 602.0 | 29.64 | 752.8 | 29 | — 1.7 | 45 | SW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.36 | 745.7 | 30.06 | 763.5 | 44 | 6.7 | 76 | NE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cincinnati, Ohio | 29.32 | 744.7 | 29.97 | 761.2 | 50 | 10.0 | 75 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Cleveland, Ohio | 29.32 | 744 7 | 30.05 | 763.3 | 50 | 10.0 | 58 | NE | 7 | 3.1 | ..... | 5ck | 0 | E | ..... | 0 | 0 | Fair | |
| Concho, Texas | 27.85 | 707.4 | 29.51 | 749.5 | 57 | 13.9 | 34 | NW | ..... | ..... | 1 | 8c | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Corsicana, Texas | 29.35 | 745.5 | 29.80 | 756.9 | 64 | 17.8 | 89 | S | 3 | 1.3 | ..... | 2cs | 0 | W | ..... | Inap. | Inap. | Fair | |
| Davenport, Iowa | 29.33 | 745.0 | 29.97 | 761.2 | 47 | 8.3 | 77 | E | 18 | 8.0 | ..... | 4cs | 4ks | W | W | 0 | 0 | Fair | |
| Deadwood, Dakota | 25.19 | 639.8 | ..... | ..... | 26 | — 3.3 | 88 | S | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.45 | 11.4 | Clear | |
| Denison, Texas | 29.05 | 737.9 | 29.82 | 757.4 | 67 | 19.4 | 95 | SE | 7 | 3.1 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Denver, Colorado | 24.54 | 623.3 | 29.76 | 755.9 | 34 | 1.1 | 43 | SE | 2 | 0.9 | ..... | 8cs | 0 | S | ..... | 0 | 0 | Cloudy | |
| Detroit, Michigan | 29.38 | 746.2 | 30.06 | 763.5 | 45 | 7.2 | 76 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Dodge City, Kansas | 27.21 | 691.1 | 29.48 | 748.8 | 46 | 7.8 | 69 | NE | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 29.36 | 745.7 | 30.07 | 763.8 | 44 | 6.7 | 92 | E | 6 | 2.7 | ..... | ..... | 10n | ..... | E | 0.15 | 3.8 | Light rain | |
| Duluth, Minnesota | 29.43 | 747.5 | 30.12 | 765.0 | 39 | 3.9 | 91 | NE | 24 | 10.7 | ..... | ..... | 10n | ..... | NE | 0.01 | 0.3 | Sleeting | |
| Eagle Pass, Texas | 29.02 | 737.1 | 29.73 | 755.1 | 64 | 17.8 | 100 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 30.13 | 765.3 | 30.19 | 766.8 | 45 | 7.2 | 61 | N | 5 | 2.2 | ..... | 8ck | 0 | N | ..... | 0 | 0 | Fair | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 66 | 18.9 | 41 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.35 | 745.5 | 30.07 | 763.8 | 46 | 7.8 | 92 | NE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Escanaba, Michigan | 29.54 | 750.3 | 30.21 | 767.5 | 39 | 3.9 | 64 | NE | 5 | 2.2 | ..... | 2c | 0 | NE | ..... | 0 | 0 | Clear | |
| Florence, Arizona | 28.18 | 715.8 | 29.78 | 756.4 | 55 | 12.8 | 68 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | W | 0 | 0 | Threatening | |
| Fort Bayard, New Mexico | 23.96 | 608.6 | 29.96 | 761.0 | 45 | 7.2 | 60 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.28 | 642.1 | ..... | ..... | 46 | 7.8 | 19 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 24.97 | 634.2 | 29.93 | 760.2 | 61 | 16.1 | 36 | Calm | 0 | 0 | ..... | 2c | 0 | S | ..... | 0 | 0 | Fair | |
| Fort Gibson, Indian Ter | 29.26 | 743.2 | 29.77 | 756.1 | 68 | 20.0 | 79 | SE | 7 | 3.1 | ..... | 5c | 0 | SW | ..... | 0 | 0 | Fair | |
| Fort Griffin, Texas | 28.51 | 724.1 | 29.75 | 755.6 | 55 | 12.8 | 81 | Calm | 0 | 0 | ..... | 5c | 0 | SW | ..... | 0 | 0 | Fair | |
| Fort St. Michael, Alaska | 29.33 | 745.0 | 29.36 | 745.7 | 18 | — 7.8 | 100 | NE | 27 | 12.1 | ..... | 0 | 0 | ..... | ..... | 0.06 | 1.5 | Clear | |
| Fort Sill, Indian Territory | 28.57 | 725.7 | 29.65 | 753.1 | 60 | 15.6 | 82 | Calm | 0 | 0 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Galveston, Texas | 29.77 | 756.1 | 29.81 | 757.2 | 73 | 22.8 | 95 | E | 4 | 1.8 | ..... | ..... | 10ks | ..... | E | 0 | 0 | Cloudy | |
| Grand Haven, Michigan | 29.46 | 748.3 | 30.11 | 764.8 | 47 | 8.3 | 77 | E | 7 | 3.1 | ..... | 5cs | 0 | SW | ..... | 0 | 0 | Fair | |
| Indianapolis, Indiana | 29.22 | 742.2 | 30.00 | 762.0 | 49 | 9.4 | 71 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Indianola, Texas | 29.79 | 756.7 | 29.81 | 757.2 | 72 | 22.2 | 90 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Jacksboro, Texas | 28.61 | 727 4 | 29.72 | 754.9 | 68 | 20.0 | 79 | S | 14 | 6.3 | ..... | 4c | 0 | W | ..... | 0 | 0 | Fair | |
| Jacksonville, Florida | 29.78 | 756.4 | 29.80 | 756.9 | 70 | 21.1 | 85 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.77 | 19.6 | Cloudy | |
| Keokuk, Iowa | 29.25 | 742.9 | 29.86 | 758.4 | 54 | 12.2 | 80 | SE | 16 | 7.2 | ..... | 0 | 4s | ..... | Calm | 0.14 | 3.6 | Fair | |
| Key West, Florida | 29.84 | 757.9 | 29.88 | 758.9 | 79 | 26.1 | 87 | S | 7 | 3.1 | ..... | 5k | Haze | S | S | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 29.86 | 758.4 | 29.88 | 758.9 | 53 | 11.7 | 100 | NE | 31 | 13.9 | ..... | ..... | 10ks | ..... | NE | 0.24 | 6.1 | Cloudy | |
| Knoxville, Tennessee | 28.91 | 734.3 | 29.88 | 758.9 | 65 | 18.3 | 73 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Crosse, Wisconsin | 29.27 | 743.4 | 30.00 | 762.0 | 51 | 10.6 | 59 | SE | 6 | 2.7 | ..... | 5k | 2s | SE | Calm | 0.05 | 1.3 | Fair | |
| La Mesilla, New Mexico | 25.88 | 657.3 | 30.03 | 762.7 | 42 | 5.6 | 56 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.35 | 745.5 | 29.67 | 753.6 | 72 | 22.2 | 80 | E | 6 | 2.7 | ..... | 5k | 0 | S | ..... | 0 | 0 | Fair | |
| Leavenworth, Kansas | 28.97 | 735.8 | 29.80 | 756.9 | 55 | 12.8 | 87 | NW | 4 | 1.8 | ..... | ..... | Fog | ..... | N | 0.04 | 1.0 | Foggy | |
| Los Angeles, California | 29.44 | 747.8 | 29.79 | 756.7 | 42 | 5.6 | 78 | N | 4 | 1.8 | ..... | 0 | 5s | ..... | Calm | 0.22 | 5.6 | Fair | |
| Louisville, Kentucky | 29.39 | 746.5 | 29.95 | 760.7 | 53 | 11.7 | 73 | N | 5 | 2.2 | ..... | 0 | Sm'e | ..... | Calm | Inap. | Inap. | Clear | |
| Lynchburg, Virginia | 29.34 | 745.2 | 30.03 | 762.7 | 49 | 9.4 | 71 | NE | 6 | 2.7 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Marquette, Michigan | 29.49 | 749.0 | 30.22 | 767.6 | 39 | 3.9 | 82 | NW | 3 | 1.3 | ..... | 2c | 0 | W | ..... | 0 | 0 | Fair | |
| Mason, Texas | 28 18 | 715.8 | 29.89 | 759.2 | 62 | 16.7 | 83 | W | 2 | 0.9 | ..... | 2c | Fog | Calm | ..... | 0 | 0 | Fair | |
| Memphis, Tennessee | 29.61 | 752.1 | 29.92 | 760.0 | 62 | 16.7 | 88 | Calm | 0 | 0 | ..... | 5c | Fog | SW | Calm | 1.06 | 26.9 | Fair | |
| Milwaukee, Wisconsin | 29.37 | 746.0 | 30.11 | 764.8 | 43 | 6.1 | 83 | NE | 6 | 2.7 | ..... | 5cs | 0 | ..... | ..... | 0 | 0 | Fair | |
| Mobile, Alabama | 29.83 | 757.7 | 29.87 | 758.7 | 68 | 20.0 | 93 | N | 5 | 2.2 | ..... | ..... | 10s | ..... | N | 0.47 | 11.9 | Cloudy | |
| Montgomery, Alabama | 29.64 | 752.8 | 29.87 | 758.7 | 67.5 | 19.7 | 84 | E | 4 | 1.8 | ..... | 5c | 0 | W | ..... | 1.21 | 30.7 | Fair | |
| Morgantown, West Virginia | 28.92 | 734.6 | 29.97 | 761.2 | 52 | 11.1 | 73 | E | 13 | 5.8 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Mt. Washington, N. H. | 23.87 | 606.3 | 30.23 | 767.8 | 30 | — 1.1 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Nashville, Tennessee | 29.39 | 746.5 | 29.92 | 760 0 | 60 | 15.6 | 82 | Calm | 0 | 0 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Hazy | |
| New Haven, Connecticut | 30.07 | 763.8 | 30.19 | 766.8 | 51 | 10.6 | 65 | NE | 4 | 1.8 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| New London, Connecticut | 30.14 | 765.5 | 30.19 | 766.8 | 50 | 10.0 | 65 | NE | 5 | 2.2 | ..... | 5c;cs | 2s;hz | NE;SW | Calm | 0 | 0 | Fair | |
| New Orleans, Louisiana | 29.77 | 756.1 | 29.82 | 757.4 | 73 | 22.8 | 85 | N | 7 | 3.1 | ..... | 10k | 0 | N | ..... | 0 03 | 0.8 | Cloudy | |
| Newport, Rhode Island | 30.14 | 765.5 | 30.19 | 766.8 | 47 | 8.3 | 70 | NE | 6 | 2.7 | ..... | 10cs | 0 | ..... | ..... | 0 | 0 | Cloudy | |
| New York, New York | 30.06 | 763.5 | 30.19 | 766.8 | 49 | 9.4 | 71 | NE | 10 | 4.5 | ..... | ..... | 10s;fg | ..... | S | 0 | 0 | Cloudy | |
| Norfolk, Virginia | 29.93 | 760.2 | 29.98 | 761.5 | 51 | 10.6 | 93 | NE | 16 | 7.2 | ..... | ..... | 10ks | ..... | NE | 0.05 | 1.3 | Threatening | |
| North Platte, Nebraska | 26.96 | 684.8 | 29.57 | 751.1 | 33 | 0.6 | 89 | NE | 2 | 0.9 | ..... | 2ck | 0 | Calm | ..... | 0.45 | 11.4 | Clear | |
| Olympia, Washington Ter. | 29.82 | 757.4 | 29.86 | 758.4 | 36 | 2.2 | 90 | SE | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0.04 | 1.0 | Cloudy | |
| Omaha, Nebraska | 28.75 | 730.2 | 29.81 | 757.2 | 53 | 11.7 | 93 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Oswego, New York | 29.82 | 757.4 | 30.15 | 765.8 | 50 | 10.0 | 79 | NE | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Pembina, Dakota | 28.99 | 736.3 | 29.83 | 757.7 | 36 | 2.2 | 90 | E | 24 | 10.7 | ..... | 10k | 0 | E | ..... | 0.04 | 1.0 | Cloudy | |
| Philadelphia, Pennsylvania | 30.12 | 765.0 | 30.17 | 766.3 | 47 | 8.3 | 85 | NE | 10 | 4.5 | ..... | ..... | 10n | ..... | Calm | 0.07 | 1.8 | Heavy rain | |
| Phœnix, Arizona | 28.59 | 726.2 | 30.37 | 771.4 | 56 | 13.3 | 57 | S | ..... | ..... | 4 | 5k | 0 | S | ..... | 0 | 0 | Fair | |
| Pike's Peak, Colorado | 17.45 | 443.2 | 29.66 | 753.4 | 3 | —16.1 | 73 | S | 38 | 17.0 | ..... | 5k | 0 | S | ..... | 0.18 | 4.6 | Fair | |
| Pioche, Nevada | 23.61 | 599.7 | 29.38 | 746.2 | 22 | — 5.6 | 100 | S | 7 | 3.1 | ..... | ..... | 10s | ..... | S | 0.11 | 2.8 | Cloudy | |
| Pittsburg, Pennsylvania | 29.20 | 741.7 | 30.00 | 762.0 | 51 | 10.6 | 72 | E | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Port Huron, Michigan | 29.42 | 747.3 | 30.09 | 764.3 | 45 | 7.2 | 76 | NE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Portland, Maine | 30.18 | 766.6 | 30.23 | 767.8 | 49 | 9.4 | 71 | N | 3 | 1.3 | ..... | 10k | Haze | NE | ..... | 0 | 0 | Cloudy | |
| Portland, Oregon | 29.81 | 757.2 | 29.92 | 760.0 | 40 | 4.4 | 82 | SE | 4 | 1.8 | ..... | ..... | 8ks | ..... | NW | Inap. | Inap. | Cloudy | |
| Prescott, Arizona | 24.44 | 620.8 | 29.80 | 756.9 | 33 | 0.6 | 89 | W | 2 | 0.9 | ..... | ..... | 10n | ..... | S | 0.88 | 22.4 | Heavy snow | |
| Punta Rassa, Florida | 29.85 | 758 2 | 29.87 | 758.7 | 79 | 26.1 | 87 | SW | 16 | 7.2 | ..... | Haze | Haze | Calm | Calm | 6 | 0 | Hazy | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Red Bluff, California | 29.42 | 747.3 | 29.78 | 756.4 | 44 | 6.7 | 92 | E | 1 | 0.4 | ..... | 1k | 0 | Calm | ..... | 0.36 | 9.1 | Clear | |
| Rochester, New York | 29.49 | 749.0 | 30.12 | 765.0 | 44 | 6.7 | 92 | NE | 3 | 1.3 | ..... | ..... | 10s;sm | ..... | Calm | 0 | 0 | Cloudy | |
| Roseburg, Oregon | 29.31 | 744.5 | 29.88 | 758.9 | 41.5 | 5.3 | 96 | S | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0.08 | 2.0 | Cloudy | |
| Sacramento, California | 29.70 | 754.4 | 29.78 | 756.4 | 43.5 | 6.4 | 88 | SE | 3 | 1.3 | ..... | ..... | 10ks | ..... | S | 0.07 | 1.8 | Cloudy | |
| St. Louis, Missouri | 29.33 | 745.0 | 29.89 | 759.2 | 59 | 15.0 | 82 | SE | 12 | 5.4 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| St. Marks, Florida | 29.81 | 757.2 | 29.82 | 757.4 | 68 | 20.0 | 94 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | N | 1.60 | 40.6 | Cloudy | |
| St. Paul, Minnesota | 29.12 | 739.6 | 29.95 | 760.7 | 46 | 7.8 | 61 | E | 10 | 4.5 | ..... | ..... | 10s | ..... | SW | 0.02 | 0.5 | Cloudy | |
| Salt Lake City, Utah | 25.20 | 640.1 | 29.53 | 750.0 | 36 | 2.2 | 61 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | S | 0.12 | 3.0 | Cloudy | |
| San Antonio, Texas | 29.01 | 736.8 | 29.57 | 751.1 | 63 | 17.2 | 83 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Diego, California | 29.79 | 756.7 | 29.86 | 758.4 | 49 | 9.4 | 78 | N | 3 | 1.3 | ..... | ..... | 8s | ..... | Calm | 0.51 | 13.0 | Cloudy | |
| Sandusky, Ohio | 29.38 | 746.2 | 30.06 | 763.5 | 46 | 7.8 | 84 | NE | 12 | 5.4 | ..... | 8k | 0 | E | ..... | 0 | 0 | Fair | |
| Sandy Hook, New Jersey | 30.14 | 765.5 | 30.17 | 766.3 | 48 | 8.9 | 85 | E | 15 | 6.7 | ..... | 5ck | 5ks | NW | W | 0 | 0 | Cloudy | |
| San Francisco, California | 29.71 | 754.6 | 29.78 | 756.4 | 48 | 8.9 | 70 | NW | 2 | 0.9 | ..... | 5c | 2s | Calm | Calm | 0.09 | 2.3 | Fair | |
| Santa Fé, New Mexico | 23.06 | 585.7 | 29.60 | 751.8 | 40 | 4.4 | 25 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 29.74 | 755.4 | 29.83 | 757.7 | 68 | 20.0 | 90 | NW | 5 | 2.2 | ..... | 0 | 8ks | ..... | NW | 0.44 | 11.2 | Cloudy | |
| Shreveport, Louisiana | 29.67 | 753.6 | 29.89 | 759.2 | 68 | 20.0 | 84 | E | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0.42 | 10.7 | Clear | |
| Smithville, North Carolina | 29.85 | 758.2 | 29.89 | 759.2 | 57 | 13.9 | 94 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0.04 | 1.0 | Cloudy | |
| Springfield, Massachusetts | 30.00 | 762.0 | 30.13 | 765.3 | 53 | 11.7 | 61 | Calm | 0 | 0 | ..... | 10ck | 0 | N | ..... | 0 | 0 | Cloudy | |
| Stockton, Texas | 26.70 | 678.2 | 29.70 | 754.4 | 63 | 17.2 | 33 | SE | 9 | 4.0 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Thatcher's Island, Mass | 30.13 | 765.3 | 30.19 | 766.8 | 46 | 7.8 | 77 | NE | 12 | 5.4 | ..... | 5k | 0 | NE | ..... | 0 | 0 | Fair | |
| Toledo, Ohio, | 29.36 | 745.7 | 30.04 | 763.0 | 49 | 9.4 | 78 | NE | 12 | 5.4 | ..... | 2c | 0 | Calm | ..... | Inap. | Inap | Fair | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 44 | 6.7 | 67 | NW | ..... | ..... | 4 | 8cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Tybee Island, Georgia | 29.78 | 756.4 | 29.81 | 757.2 | 67 | 19.4 | 94 | N | 6 | 2.7 | ..... | ..... | 10ks | ..... | NE | 0.70 | 17.8 | Cloudy | |
| Umatilla, Oregon | 29.45 | 748.0 | ..... | ..... | 30 | — 1.1 | 73 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.63 | 752.6 | 29.89 | 759.2 | 63 | 17.2 | 89 | E | 2 | 0.9 | ..... | 2c | 0 | Calm | ..... | 0.01 | 0.3 | Clear | |
| Virginia City, Montana | 23.92 | 607.6 | 29.40 | 746.7 | 21 | — 6.1 | 86 | E | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Visalia, California | 29.41 | 747.0 | 29.78 | 756.4 | 43 | 6.1 | 92 | Calm | 0 | 0 | ..... | 0 | 9ks | ..... | SW | 0.13 | 3.3 | Cloudy | |
| Washington, D. C. | 30.00 | 762.0 | 30.11 | 764.8 | 48.5 | 9.2 | 78 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 38 | 3.3 | 54 | SW | ..... | ..... | 1 | 0 | 8ks | ..... | Calm | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 29.80 | 756.9 | 29.88 | 758.9 | 55 | 12.8 | 93 | N | 10 | 4.5 | ..... | ..... | 10s | ..... | N | 0.23 | 5.8 | Cloudy | |
| Winnemucca, Nevada | 25.21 | 640.3 | 29.57 | 751.1 | 28 | — 2.2 | 88 | SW | 13 | 5.8 | ..... | ..... | 10s | ..... | N | 0.01 | 0.3 | Cloudy | |
| Wood's Holl, Mass. | 30.16 | 766.1 | 30.21 | 767.3 | 54 | 12.2 | 73 | E | 5 | 2.2 | ..... | 8cs | Haze | Calm | Calm | 0 | 0 | Cloudy | |
| Yankton, Dakota | 28.63 | 727.2 | 29.92 | 760.0 | 43 | 6.1 | 96 | S | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | 0.14 | 3.6 | Foggy | |
| Yuma, Arizona | 29.65 | 753.1 | 29.81 | 757.2 | 53 | 11.7 | 66 | NW | 10 | 4.5 | ..... | 0 | 8ks | ..... | S | Inap. | Inap. | Fair | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| York Factory, B. A. | 30.12 | 765.0 | 30.17 | 766.3 | 17.5 | — 8.1 | 100 | S | 11 | 4.9 | ..... | 10n | ..... | ..... | ..... | 0.01 | 0.3 | Snowing | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 29.83 | 757.7 | 29.85 | 758.2 | 83 | 28.3 | 74 | S | 6.0 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.10 | 764.5 | 30.11 | 764.8 | 79 | 26.1 | 86 | E | 4 | 1.8 | ..... | 2k | 0 | E | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.85 | 758.2 | 29.93 | 760.2 | 82 | 27.8 | ..... | SE | 9 | 4.0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | 29.99 | 761.7 | 29.99 | 761.7 | 85 | 29.4 | 76 | E | ..... | ..... | 3 | ..... | 8ks | ..... | ..... | 0.100 | 2.54 | Cloudy | C. J. Hering. |
| Batavia, Dutch Guiana, S. A. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.24 | 641.1 | ..... | ..... | 70.0 | 21.1 | 81 | Calm | ..... | ..... | 0 | 3cs | 5ks | ..... | ..... | 0.38 | 9.7 | ..... | Thomas Herran. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 metres; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 8,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er. 0—10. | Clouds. Amount. Low'r. 0—10. | Clouds. Direction. Up'er. From— | Clouds. Direction. Low'r. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.71 | 754.6 | 41 | 5.0 | 40 | 4.4 | 91 | Calm | 0 | 0 | ..... | ..... | 2 | ..... | Calm | 0.01 | 0.3 | ..... | ..... | Fair..... | |
| Navy Yard, Pensacola, Fla. | 29.84 | 757.9 | 70 | 21.1 | 69 | 20.6 | 95 | NW | 7 | 3.1 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Navy Yard, Portsmouth, N. H | 30.26 | 768.6 | 72 | 22.2 | 47 | 8.3 | 77 | NE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Naval Hospital, Yokohama, Japan | 29.99* | 761.7* | 56 | 13.3 | 48 | 8.9 | 89 | W | ..... | ..... | 1 | ..... | 1k | ..... | W | 0.38 | 9.7 | ..... | ..... | Fair ..... | |
| Adams. Panama | 29.97 | 761.2 | 84 | 28.9 | 84 | 28.9 | 83 | SE | ..... | ..... | 2–3 | ..... | 2 | ..... | SE | ..... | ..... | Smooth | ..... | Fair..... | |
| Alliance, Villefranche, France | 30.11‡ | 764.8‡ | ..... | ..... | 65 | 18.3 | 72 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | None | ..... | Cloudy ..... | |
| Ashuelot. Shanghai, China | 30.26 | 768.6 | 55 | 12.8 | 54 | 12.2 | 80 | SE | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Showery..... | |
| Canonicus, New Orleans, La | 29.83 | 757.7 | 51 | 10.6 | 70 | 21.1 | 95 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Colorado, New York, N. Y. | 30.14‡ | 765.5‡ | ..... | ..... | 51 | 10.6 | 65 | ENE | 2 | 0.9 | ..... | ..... | 8 | ..... | SW | 0 | 0 | ..... | ..... | Threatening | |
| Constellation, N. 45° 15′ W. 27° 27′ | 30.12‡ | 765.0‡ | ..... | ..... | 58 | 14.4 | 100 | SW | ..... | ..... | 5 | ..... | 10 | ..... | SW | ..... | ..... | Long smooth | SW | Sprinkling... | |
| Constitution, Havre, France | 29.82‡ | 757.4‡ | ..... | ..... | 55 | 12.8 | 93 | W | ..... | ..... | 1 | ..... | 8 | ..... | WSW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Despatch, Constantinople, Turkey | 30.08‡ | 764.0‡ | ..... | ..... | 60 | 15.6 | 49 | SSW | ..... | ..... | 2 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Clear ..... | |
| Franklin, Norfolk, Va | 30.07 | 763.8 | 62 | 16.7 | 52 | 11.1 | 87 | NE | 14 | 6.3 | ..... | ..... | 8 | ..... | NE | 2.1 | 53. | ..... | ..... | Cloudy..... | |
| Gettysburg Valetta, Malta | 30.15‡ | 765.8‡ | ..... | ..... | 73 | 22.8 | 90 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear. ..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.13 | 765.3 | 77 | 25.0 | 76 | 24.4 | 77 | NE | ..... | ..... | 4 | ..... | 2 | ..... | NE | ..... | ..... | Groun | NW | Clear..... | |
| Hartford, Montevideo, Uraguay | 29.59 | 751.6 | 65 | 18.3 | 62 | 16.7 | 94 | NE | 4 | 1.8 | ..... | ..... | 10 | ..... | NE | 0.11 | 2.8 | Smooth | ..... | Rainy..... | |
| Marion, Smyrna, Turkey | 29.97 | 761.2 | 66 | 18.9 | 70 | 21.1 | 48 | WNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Michigan, Erie, Pa | 29.60 | 751.8 | 73 | 22.8 | 46 | 7.8 | 92 | E | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Monocacy. Shanghai, China | 30.26‡ | 768.6‡ | ..... | ..... | 52 | 11.1 | 100 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | NNE | ..... | ..... | ..... | ..... | Cloudy..... | |
| New Hampshire, Port Royal, S. C | 30.05† | 763.3† | ..... | ..... | 68 | 20.0 | 95 | ESE | 13 | 5.8 | ..... | ..... | 10 | ..... | SW | 0.02 | 0.5 | ..... | ..... | Cloudy..... | |
| Omaha, N. 32° 16′ W. 73° 17′ | 29.93* | 760.2* | 68 | 20.0 | 66 | 18.9 | 79 | SSE | 3 | 1.3 | ..... | ..... | 10 | ..... | SSE | 0.2 | 5. | Smooth | ..... | Rainy ..... | |
| Onward, Callao, Peru | 30.03† | 762.7† | ..... | ..... | 70 | 21.1 | 90 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, Pensacola, Fla | 29.87‡ | 758.7‡ | ..... | ..... | 69 | 20.6 | 100 | NNE | ..... | ..... | 2 | ..... | 10 | ..... | NNE | ..... | ..... | ..... | ..... | Clearing..... | |
| Palos, Shanghai, China | 30.30* | 769.6* | 56 | 13.3 | 52 | 11.1 | 93 | NE | ..... | ..... | 0–1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | |
| Pensacola, N. 31° 02′, W. 155° 01′ | 30.36 | 771.1 | 63 | 17.2 | 61 | 16.1 | 88 | SSE | 7 | 3.1 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Smooth | S | Cloudy..... | |
| Plymouth, Norfolk, Va | 29.98‡ | 761.5‡ | ..... | ..... | 53 | 11.7 | 93 | NE | ..... | ..... | 4–5 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Squally..... | |
| Powhatan, Norfolk, Va | 29.99‡ | 761.7‡ | ..... | ..... | 53 | 11.7 | ?? | NE | 9. | 4.0 | ..... | ..... | 10 | .... | ..... | 0.23 | 5.8 | ..... | ..... | Rainy..... | |
| Ranger, Amoy, China | 30.23* | 767.8* | ..... | ..... | 67 | 19.4 | 55 | ENE | ..... | ..... | 2–3 | ..... | 8 | ..... | ENE | ..... | ..... | Smooth | ..... | D. clouds.... | |
| Rio Bravo Brownsville, Texas | 29.86 | 758.4 | 78 | 25.6 | 74 | 23.3 | 95 | ESE | ..... | ..... | 1 | ..... | 10 | ..... | SE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Santee, Annapolis, Md | 30.10‡ | 764.5‡ | ..... | ..... | 48 | 8.9 | 78 | NE | ..... | ..... | 3 | ..... | 10 | ..... | E | 0.09 | 2.3 | ..... | ..... | Cloudy..... | |
| Saratoga, Washington, D. C | 30.00 | 762.0 | 61 | 16.1 | 50 | 10.0 | 93 | NE | ..... | ..... | 2 | ..... | 10 | ..... | Calm | Mod'ate | Mod'ate | ..... | ..... | Cloudy..... | |
| St. Louis, League Island, Pa | 30.05 | 763.3 | 64 | 17.8 | 48 | 8.9 | 78 | NE | 5 | 2.2 | ..... | ..... | 10 | ..... | ..... | 0.05 | 1.3 | ..... | ..... | Light rain.. | |
| Supply, Havre, France | 29.90 | 759.4 | 60 | 15.6 | 56 | 13.3 | 86 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Rain & fog... | |
| Swatara, N. 15° 36′, W. 81° 23′ | 29.90‡ | 759.4‡ | ..... | ..... | 82 | 27.8 | 87 | ENE | ..... | ..... | 2 | ..... | 8 | ..... | E | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Tennessee, N. 15°, E. 42° 38′ | 29.73* | 755.1* | 87 | 30.6 | 88 | 31.1 | 73 | SSW | 4 | 1.8 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | |
| Trenton, Villefranche, France | 30.10‡ | 764.5‡ | ..... | ..... | 68 | 20.0 | 79 | SSW | ..... | ..... | 0–1 | ..... | 2 | ..... | N | 0 | 0 | ..... | ..... | Fair ..... | |
| Tuscarora, Acapulco, Mexico | 29.70 | 754.4 | 77 | 25.0 | 78 | 25.6 | 78 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | Calm | 0 | 0 | Smooth | ..... | Cloudy..... | |
| Vandalia, Villefranche, France | 30.15‡ | 765.8‡ | ..... | ..... | 64 | 17.8 | 68 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Wabash, Boston, Mass | 30.20‡ | 767.1‡ | ..... | ..... | 50 | 10.0 | 64 | NNE | 5 | 2.2 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Wyoming, N. 45° 31′, W. 35° 05′ | 29.80†* | 756.9†* | ..... | ..... | 66 | 18.9 | 64 | SW | ..... | ..... | 4–5 | ..... | 10 | ..... | ..... | ..... | ..... | Mod'ate | SW | Raining..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Anerold Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | Force. | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | |
| S. S. City of Panama, Seattle, W. T. | | | 29.91* | 759.7* | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Peking, N. 38° 19′, W. 169° 30′ | | | 30.11† | 764.8† | 56 | 13.3 | 87 | Var. | | | 1 | | 4 | | SE | | | Fine | Capt. Cobb. |
| S. S. City of Sydney | | | | | | | | SSW | 44.5 | 19.9 | | | 10 | | SSW | Small | SW | Misty | Capt. Seabury. |
| S. S. City of Tokio, N. 34° 17′, W. 167° 37′ | | | | | 56 | 13.3 | | NNW | | | 4 | | 3 | | NW | Rough | NW | D. clouds | Lt. Z. L. Tanner, U.S.N. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, N. 46° 32′, W. 39° 23′ | | | 29.70† | 754.4† | 58 | 14.4 | ?? | S | | | 4 | | 8ck | | SW | Mod'ate | SW | Fair | Capt. W. H. Thompson. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Aneroid.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic | | | | | | | | | | | | | | | | | | | Capt. John Metcalf. |
| S. S. Gaelic, N. 28° 21′, E. 127° 05′ | | | 30.06† | 763.5† | 68 | 20.0 | ?? | NE | | | 5 | | km | | NE | Head sea. | NE | Gloomy | Capt. W. H. Kidley |
| S. S. Oceanic, N. 31° 30′, E. 132° 0′ | | | 30.18? | 766.6? | 60 | 15.6 | 55 | Var. | | | 1 | | 2 | | W | Smooth | | D. clouds | Capt. H. Parsell. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | Character | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, Philadelphia, Pa | | | 30.10* | 764.5* | 49 | 9.4 | ?? | NE | | | 3 | | 9 | | ENE | | | Cloudy | Captain Sargent. |
| S. S. Ohio, Philadelphia, Pa | | | 30.18 | 766.6 | 50 | 10.0 | 86 | ENE | | | 3 | | 10 | | ENE | | | Dull | Captain Morrison. |
| S. S. Pennsylvania, N. 51° 23′, W. 9° 36′ | | | 29.77† | 756.1† | 62 | 16.7 | 94 | WSW | | | 4 | | 3 | | W | Light | SW | Clear | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for elevation; instrumental error not known. †Corrected for temperature and elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
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**ALLAN LINE MARINE SERIES.**

Furnished by the coöperation of A. Schumacher, & Co., Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Scandinavian | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.)**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Tenants Harbor | | | 30.09 | 764.3 | 46 | 7.8 | 69 | NNE | 4 | 1.8 | | | 10s | | NE | | | Overcast | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 30.23 | 767.8 | 8.5 | —13.1 | 83 | SW | 3.3 | 1.5 | | 6cs | 0 | W | | | | Clear | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assd.) Chief Signal Officer, U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 17, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

## ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | | | 30.13 | 765.4 | 64.9 | 18.3 | 85 | NE | | | 7 | | 1 | | | 0 | 0 | Very fair | Dr. Ollive. |
| Nemours | | | 30.13 | 765.4 | 71.6 | 22.0 | 50 | N | | | 1 | | 0 | | | 0 | 0 | Clear | Michel. |
| Algiers | | | 30.09 | 764.3 | 70.9 | 21.6 | 57 | W | | | 5 | | 2 | | | 0.024 | 0.6 | Fair | Towiliere. |
| La Calle | | | 30.10 | 764.6 | 67.5 | 19.7 | 81 | NNW | | | 5 | | 6 | | | 0.039 | 1.0 | Cloudy | Boulangeot. |
| Tunis | | | 30.10 | 764.6 | 70.5 | 21.4 | 61 | W | | | 5 | | 5 | | | 0.075 | 1.9 | Cloudy | Jacques. |
| Sfax | | | 30.02 | 762.5 | 69.8 | 21.0 | | NNE | | | 3 | | 6 | | | 0 | 0 | Cloudy | Gau. |
| Saida | | | 30.21 | 767.3 | 67.6 | 19.8 | | NW | | | 3 | | 2 | | | 0 | 0 | Fair | Herbin. |
| Tebessa | | | 30.09 | 764.2 | | | | WNW | | | 1 | | 5 | | | 0 | 0 | Cloudy | Watrin. |
| Geriville | | | 30.26 | 768.6 | 64.0 | 17.8 | 74 | NE | | | 5 | | 6 | | | 0 | 0 | Cloudy | Lemaillot. |
| Laghouat | | | 30.22 | 767.5 | 85.6 | 29.8 | 15 | NNW | | | 1 | | 0 | | | 0 | 0 | Clear | Bertrand. |
| Biskra | | | 30.11 | 764.8 | 84.2 | 29.0 | 46 | NW | | | 1 | | 3 | | | 0 | 0 | Pretty fair | Chanvaux. |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet: Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

## AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.25 | 743.0 | 29.79 | 756.7 | 63.0 | 17.2 | 37 | SW | | | 5 | | 10 | | | 0.028 | 0.7 | Raining | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 28.97 | 735.9 | 29.71 | 754.7 | 69.8 | 21.0 | 50 | W | | | 1 | | 9 | | | 0 | 0 | | Dr. Wierzbiski. |
| Eperies | 28.86 | 733.0 | 29.71 | 754.6 | 64.8 | 18.2 | 69 | Calm | | | 0 | | 9k;s | | | 0.193 | 4.90 | | Julius Mikolik. |
| Gratz | 28.56 | 725.5 | 29.80 | 756.9 | 55.9 | 13.3 | 70 | NW | | | 4 | | 10 | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28.37 | 720.5 | 29.73 | 755.1 | 69.6 | 20.9 | 36 | SW | | | 1 | | 4 | | | 0 | 0 | | Prof. Reissenberg |
| Kremsmünster | 28.48 | 723.3 | 29.78 | 756.3 | 51.1 | 10.6 | 89 | W | | | 2 | | 10 | | | 0.717 | 18.2 | | Prof. C. Wagner |
| Lemberg | 28.74 | 730.1 | 29.70 | 754.4 | 64.4 | 18.0 | 58 | SW | | | 1 | | 2 | | | 0 | 0 | | Dr. T. Stanecki. |
| Pola | 29.75 | 755.6 | 29.86 | 758.5 | 56.8 | 13.8 | 76 | SSE | | | 1 | | 10s | | | 0 | 0 | | I.R.Hydrographic Office |
| Szathmar | 29.34 | 745.1 | 29.78 | 756.5 | 69.6 | 20.9 | 42 | S | | | 2 | | 5 | | | 0.031 | 0.8 | | Johann Tamas, S. J. |
| Szegedin | | | | | 62.6 | 17.0 | | | | | | | | | | | | | Karl Stancel. |
| Trieste | 29.78 | 756.3 | 29.88 | 758.9 | 58.3 | 14.6 | 70 | SW | | | 1 | | 10 | | | 0.370 | 9.4 | Raining | P. Busin. |
| Vienna | 29.01 | 736.9 | 29.71 | 754.6 | 62.8 | 17.1 | 54 | W | | | 4 | | 10 | | | 0.055 | 1.4 | | I. R. Central Met. Obs'y. |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

## BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | | | | | | | | WSW | | | 1 | | 10 | | | 0.067 | 1.7 | | Prof. M. Passau. |
| Brussels | 29.57 | 751.1 | 29.77 | 756.1 | 57.0 | 13.9 | 64 | W | | | 3 | 0? | 2 | S? | WSW | 0.043 | 1.1 | | Royal Observatory. |
| Furnes | 29.77 | 756.1 | 29.79 | 756.7 | 56.5 | 13.6 | 73 | W | | | 2 | | 8 | | | 0 | 0 | | M. E. de Cae. |
| Maeseyck | 29.65 | 753.0 | 29.77 | 756.2 | 54.1 | 12.3 | 92 | WSW | | | 1 | | 10 | | | 0.047 | 1.2 | | M. Pierrot. |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4? feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.60 | 751.8 | 29.70 | 754.4 | 45.0 | 7.2 | ..... | ESE | 6 | 2.7 | ..... | ..... | ..... | ..... | ..... | 0.090 | 2.29 | Foggy | W. Beswell. |
| Ardrossan | 29.64 | 752.8 | 29.66 | 753.4 | 54 | 12.2 | ..... | WNW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.68 | 753.9 | 54.4 | 12.4 | ..... | SSW | 2 | 0.9 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.68 | 753.9 | 48.0 | 8.9 | ..... | W | 13 | 5.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 29.70 | 754.4 | 57.3 | 14.1 | ..... | WNW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | J. L. E. Dreyer. |
| Bradford, Yorkshire | 29.26 | 743.2 | 29.66 | 753.4 | 56.1 | 13.4 | ..... | W | ..... | ..... | 0 | ..... | 8 | ..... | ..... | 0.06 | 1.5 | Blue sky | J. McLandsborough. |
| Bridgetown, (Barbados) | ..... | ..... | 29.95 | 760.7 | 82.0 | 27.8 | ..... | NE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.70 | 754.4 | 57 | 13.9 | ..... | NNW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | H. Todd. [H. C. |
| Cardington | ..... | ..... | 29.72 | 754.9 | 57.0 | 13.9 | ..... | NW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | John McLaren. |
| Chatham, School M. E. | 29.59 | 751.6 | 29.72 | 754.9 | 55.2 | 12.9 | ..... | W | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast | Q. M. Serg., Geo. Stuart, R. E. |
| Dartmoor | 28.32 | 719.3 | 29.79 | 756.7 | 49.0 | 9.4 | ..... | W | ..... | ..... | 5 | ..... | 7 | ..... | ..... | ..... | ..... | Showery | Alexander Watt. |
| Donaghadee | 29.64 | 752.8 | 29.67 | 753.6 | 54 | 12.2 | ..... | E | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | J. Mac Gowan. |
| Dover | 29.73 | 755.1 | 29.75 | 755.6 | 50 | 10.0 | ..... | WSW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ⅜ clouded | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.66 | 753.4 | 52.7 | 11.5 | ..... | S | 0.4 | 0.2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Thomas Mackereth. |
| Falmouth, Observatory | 29.59 | 751.6 | 29.82 | 757.4 | 54.2 | 12.3 | ..... | W | ..... | ..... | 5 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.83 | 706.9 | 30.05 | 763.3 | 67.2 | 19.6 | ..... | SE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.67 | 753.6 | 29.99 | 759.4 | 88.0 | 31.1 | ..... | NW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's College | ..... | ..... | 29.66 | 753.4 | 55 | 12.8 | ..... | NNW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.13 | 765.3 | 30.18 | 766.6 | 67.2 | 19.6 | ..... | W | ..... | ..... | 6 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | Corpl. Wm. Allen, A. H. C. |
| Glasgow, Observatory | 29.45 | 748.0 | 29.66 | 753.4 | 54.2 | 12 3 | ..... | WSW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy | D. G. Maclean. |
| Great Yarmouth | 29.70 | 754.4 | 29.70 | 754.4 | 52 | 11.1 | ..... | NNE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Misty | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.55 | 750.6 | 29.72 | 754.9 | 56.4 | 13.6 | ..... | WSW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Raining | The Staff, for G. B. Airy. |
| Guernsey | 29.61 | 752.1 | 29.83 | 757.7 | 53.5 | 11.9 | ..... | WSW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 29.84 | 757.9 | 56 | 13.3 | ..... | S | ..... | ..... | 4 | ..... | 6k | ..... | ..... | 0 | 0 | Fine | M. P. Moyle. |
| Holyhead | 29.64 | 752.8 | 29.69 | 754.1 | 57 | 13.9 | ..... | SW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | John Tilston. |
| Jersey | 29.59 | 751.6 | 29.88 | 758.9 | 53.5 | 11.9 | ..... | WSW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | Blank | Blank | Gloomy | J. Fisher. |
| Kew, Observatory | ..... | ..... | 29.73 | 755.1 | 52.2 | 11.2 | ..... | W | 8 | 3.6 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Raining | The Staff. |
| Kingstown | 29.66 | 753.4 | 29.69 | 754.1 | 51 | 10.6 | ..... | WNW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | Blank | Blank | D. clouds | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.67 | 753.6 | 57.6 | 14.2 | ..... | SW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterraneau) | 30.00 | 762.0 | 30.08 | 764.0 | 65.0 | 18.3 | ..... | SW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | Sgt. Fred. Travis, A. H. |
| Nairn | 29.57 | 751.5 | 29.66 | 753.4 | 53 | 11.7 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 29.86 | 758.4 | 77.8 | 25.4 | ..... | N | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.49 | 749.0 | 29.68 | 753.9 | 55.2 | 12.9 | ..... | SSW | ..... | ..... | 2 | ..... | 10ks;d | ..... | SSW | 0.138 | 3.50 | Raining | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.16 | 740.7 | 29.68 | 753 9 | 54.5 | 12.5 | ..... | SSW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | Blank | Blank | Foggy | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.72 | 754.9 | 55 | 12.8 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Mr. Lucas. |
| Plymouth | 29.70 | 754.4 | 29.78 | 756.4 | 54.6 | 12.6 | ..... | WSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Merrifield. |
| Roche's Point | 29.67 | 753.6 | 29.72 | 754.9 | 55 | 12.8 | ..... | NW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Showery | W. Kennedy. |
| Saint Ann's Head | 29.54 | 750.3 | 29.70 | 754.4 | 51 | 10.6 | ..... | W | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | ..... | John C. Walker. |
| Sandwick Manse, (Orkneys.) | ..... | ..... | 29.71 | 754.6 | 49 | 9.4 | ..... | SE | 25 | 11.2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Foggy | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.90 | 759.4 | 61.0 | 16.1 | ..... | S | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | Sergt. W. H. Lyne. |
| Sheffield | 29.41 | 747.0 | 29.68 | 753.9 | 57.9 | 14.4 | ..... | SW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0.18 | 4.6 | D. clouds | W. F. Cooper. |
| Silloth Rectory | 29.63 | 752.6 | 29.66 | 753.4 | 59.2 | 15.1 | 73 | Calm | ..... | ..... | 0 | ..... | 3 | ..... | ..... | 0.020 | 0.51 | D. clouds | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.26 | 743.2 | 29.67 | 753.6 | 55.0 | 12.8 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Rev. S. J. Perry. |
| Stornoway, Lews C. (Hebr.) | ..... | ..... | 29.61 | 752.1 | 53 | 11.7 | ..... | SSE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ⅛ clouded | John Sutherland. |
| Stratfield Turgiss | 29.53 | 750.0 | 29.75 | 755.6 | 55.2 | 12.9 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Showery | Rev. C. H. Griffith, F. M |
| Thurso | ..... | ..... | 29.67 | 753.6 | 50 | 10.0 | ..... | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 29.81 | 757.2 | 55 | 12.8 | ..... | W | ..... | ..... | 7 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 29.78 | 756.4 | 54.0 | 12.2 | ..... | W | 17 | 7.6 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.02 | 762.5 | 70.0 | 21.1 | 78 | SE | ..... | ..... | 2 | ..... | 6k | ..... | ..... | 0 | 0 | ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.60 | 751.8 | 29.78 | 756.5 | 79.5 | 26.4 | 76 | SE | 17.0 | 7.6 | ..... | 2 | 6 | ..... | SSE | 0 | 0 | Squally | C. Meldrum. |
| Melbourne, Observatory | 30.08 | 764.0 | 30.17 | 766.3 | 56.3 | 13.5 | 98 | W | 5 | 2.2 | ..... | ..... | 10 | ..... | ..... | 0.46 | 11.7 | Heavy rain | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m.

| Marine Series. Vessels. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|
| S. S. Algeria | ..... | ..... | ..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | Capt. C. C. Prehn. |
| S. S. Naid, N. 41° 40′ W. 52° 55′ | 4 | NNE | Overcast | Capt. J. Smith. [R. |
| S. S. Peruvian | ..... | ..... | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire | ..... | ..... | ..... | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instru'tal error and temperature. Inches. | BAROMETER. Corrected for instru'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| San José | 26.17 | 664.7 | ..... | ..... | 72.0 | 22.2 | 88 | SE | ..... | ..... | 2 | p | Haze | ..... | ..... | Inap. | Inap. | ..... | Federico Maison. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.63 | 752.7 | 29.68 | 753.9 | 52.5 | 11.4 | 91 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Fanöe | 29.65 | 753.1 | 29.67 | 753.6 | 56.7 | 13.7 | 83 | SE | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | Raining | |
| Godthaab, (Greenland) | 29.89 | 759.2 | 29.93 | 760.3 | 28.8 | —1.8 | 78 | S | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | ..... | |
| Stykkisholm, (Iceland) | 29.63 | 752.6 | 29.67 | 753.7 | 28.9 | —1.7 | 96 | NE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Thorshavn, (Faröe) | 29.66 | 753.3 | 29.69 | 754.2 | 46.2 | 7.9 | 94 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | ..... | ..... | Snowing | |
| Vestervig | 29.52 | 749.7 | 29.69 | 754.0 | 54.0 | 12.2 | 74 | NE | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.43 | 747.4 | 29.98 | 761.4 | 57.2 | 14 | 77 | SW | ..... | ..... | 6 | ..... | 10 | ..... | SW | 0.138 | 3.5 | Covered | Collignon, Director. |
| Amiens, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bonvarne, Director. |
| Avignon, Normal School | 29.88 | 759.0 | 29.96 | 761.0 | 65.8 | 18.8 | 47 | N | ..... | ..... | 2 | ..... | 5 | ..... | NW | 0 | 0 | Cloudy | Mr. Giraud, Director |
| Bar-sur-Seine | 29.34 | 745.2 | 29.89 | 759.3 | 55.0 | 12.8 | 78 | WSW | ..... | ..... | 2 | ..... | 8kn | ..... | W | 0.331 | 8.4 | Very cloudy | C. Saillard. |
| Beaumette Obs'y (Angers) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Albert Cheux. |
| Beauvais | ..... | ..... | ..... | ..... | 59.0 | 15 | 64 | WSW | ..... | ..... | 3 | ..... | 8 | ..... | W | 0.551 | 14.00 | Very cloudy | Normal School. |
| Besançon | 29.07 | 738.4 | 29.97 | 761.1 | 52.2 | 11.2 | 86 | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.098 | 2.5 | Covered | Normal School. |
| Bourg-en-Bresse | 29.18 | 741.1 | 30.08 | 764.0 | 57.4 | 14 1 | 69 | S | ..... | ..... | 2 | ..... | 10kn | ..... | NW | 0.480 | 12.2 | Covered | Normal School. |
| Bourges, Normal School | 29.38 | 746.3 | 29.93 | 760.3 | 54.3 | 12.4 | 87 | SW | ..... | ..... | 4 | ..... | 10 | ..... | SW | 0.35 | 9. | Covered | A. Wagner, Director. |
| Brest, Naval Observatory | 29.62 | 752.4 | 29.84 | 758 0 | 58.5 | 14.7 | 74 | W | ..... | ..... | 3 | ..... | 9 | ..... | W | 0.069 | 1.75 | Misty | The Staff. |
| Carcassonne, Normal School | 29.70 | 754.3 | 30.11 | 764.9 | 59.0 | 15 | 80 | W | ..... | ..... | 4 | ..... | 5 | ..... | W | 0.457 | 11.6 | ½ covered | Vateau, Director. |
| Caen | 29.78 | 756.5 | 29.86 | 758.4 | 54.0 | 12.2 | 80 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.59 | 15. | Covered | Normal School. |
| Chartres, Normal School | 29.26 | 743.2 | 29.82 | 757.5 | 58.3 | 14.6 | 89 | W | ..... | ..... | 2 | ..... | 10 | ..... | W | 0.012 | 0.3 | Covered | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.52 | 749.9 | 29.84 | 757.9 | 59.7 | 15.4 | 68 | SW | ..... | ..... | 3 | ..... | 5k | ..... | SW | 0.126 | 3.2 | Cloudy | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.60 | 726.5 | 29.94 | 760.4 | 59.4 | 15.2 | 45 | SW | ..... | ..... | 3 | ..... | 5 | ..... | W | 0.067 | 1.7 | Cloudy | Alluard, Director. |
| Commercy, Normal School | 29.06 | 738.0 | 29.94 | 760.5 | 54.0 | 12.2 | 83 | W | ..... | ..... | 2 | ..... | 5 | ..... | W | 0.244 | 6.2 | Cloudy | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.84 | 732.5 | 29.98 | 761.5 | 62.1 | 16.7 | 37 | NW | ..... | ..... | 4 | ..... | 8 | ..... | NW | 0 | 0 | ¾ covered | M. Kina. |
| Grenoble | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| La Roche-sur-Yon, N. School | 29.75 | 755.6 | 29.97 | 761.1 | 59.4 | 15.2 | 73 | W | ..... | ..... | 6 | ..... | 8 | ..... | W | 0.079 | 2.0 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.58 | 751.2 | 29.88 | 758.9 | 58.3 | 14.6 | 53 | W | ..... | ..... | 4 | ..... | 2 | ..... | W | 0.16 | 4. | Slightly cl'dy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.02 | 737.1 | 29.93 | 760.2 | 58.6 | 14.8 | 74 | SSW | ..... | ..... | 2 | ..... | 5 | ..... | NW | 0.543 | 13.8 | Cloudy | Voudez, Director. |
| Lorient, Naval Observatory | 29.84 | 758.0 | 29.94 | 760.5 | 60.8 | 16.0 | 71 | WSW | ..... | ..... | 4 | ..... | 8 | ..... | W | 0.079 | 2.0 | ¾ covered | T. Carré, Director. |
| Mâcon, Normal School | 29.32 | 744.7 | 29.97 | 761.1 | 57.7 | 14.3 | 61 | NE | ..... | ..... | 2 | ..... | 5 | ..... | SW | 0.28 | 7. | Cloudy | M. Marchal, Director. |
| Metz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. A. Schuster, Dir. |
| Mirecourt | 28.89 | 733.7 | 29.92 | 760.0 | 57.6 | 14.2 | 70 | SSW | ..... | ..... | 4 | ..... | 10 | ..... | NE | 0 | 0 | Covered | Normal School. |
| Nismes, Normal School | 29.76 | 756.0 | 29.96 | 761.0 | 68.4 | 20.2 | 62 | E | ..... | ..... | 2 | ..... | 5 | ..... | NE | 0 | 0 | Cloudy | Boyer, Director. |
| Orleans, Normal School | 29.48 | 748.7 | 29.85 | 758.1 | 76.1 | 24.5 | 60 | W | ..... | ..... | 2 | ..... | 8 | ..... | W | 0.24 | 6. | Very cloudy | Bernard, Director. |
| Paris, Observatory | 29.61 | 752.0 | 29.85 | 758.1 | 59.2 | 15.1 | 49 | SW | ..... | ..... | 1 | ..... | 8 | ..... | W | 0.214 | 5.44 | Very cloudy | National Observatory. |
| Privas | 28.91 | 734.3 | 29.96 | 761.0 | 60.8 | 16 | 38 | N | ..... | ..... | 1 | ..... | 2 | ..... | N | 0 | 0 | Slightly cl'dy | Normal School |
| Puy de Dome (Summit) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.97 | 761.2 | 30.00 | 762.0 | 59.7 | 15.4 | 65 | WSW | ..... | ..... | 5 | ..... | 10 | ..... | WSW | 0.28 | 7. | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.75 | 755.6 | 29.84 | 757.8 | 56.8 | 13.8 | 65 | W | ..... | ..... | 2 | ..... | 5 | ..... | W | 0.252 | 6.4 | Cloudy | F. Lucard, Director |
| Saint Malo (Port) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. H. Hercouet |
| Tarbes, Normal School | 29.06 | 738.0 | 30.13 | 765.3 | 60.8 | 16 | 59 | W | ..... | ..... | 2 | ..... | 2 | ..... | W | 0 | 0 | Slightly cl'dy | T. Hugues, Director |
| Villefranche | 29.26 | 743.1 | 29.96 | 760.9 | 62.4 | 16.9 | 62 | NNW | ..... | ..... | 1 | ..... | 5 | ..... | SW | 0.295 | 7.5 | Cloudy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.81 | 757.1 | 29.84 | 757.8 | 81.0 | 27.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Lyons | ..... | ..... | 30.03 | 762.8 | 57.4 | 14.1 | 74 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.24 | 6. | ..... | L'Abbé Marchési. |
| Marseilles, Observatory | ..... | ..... | 29.93 | 760.1 | 63.3 | 17.4 | 33 | W | ..... | ..... | ..... | ..... | 2? | ..... | ..... | 0.16 | 4. | Covered? | M. Jeys. |
| Mont-Louis | 24.87 | 631.7 | 30.19 | 766.7 | 59.4 | 10.2 | 36 | WSW | 14.9 | 6.66 | 3 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | The Staff. |
| Nice | ..... | ..... | 29.87 | 758.6 | 59.2 | 15.1 | 83 | E | ..... | ..... | ..... | ..... | 3 | ..... | W | 0.453 | 11.5 | ..... | Mr. Falguère. |
| Paris, Montsouris Obs'y | 29.56 | 750.9 | 29.84 | 757.9 | 60.4 | 15.8 | 75† | WSW | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0 | 0 | Clear | Dr. A. Niepce. |
| Perpignan | ..... | ..... | 30.05 | 763.2 | 63.0 | 17.2 | 52 | NW | 29.8 | 13.33 | 3 | ..... | 6 | ..... | W | 0.260 | 6.6 | ..... | Marié Davy, Director |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 6 | ..... | NW | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Plantade,) H. P. | 22.52 | 571.9 | ..... | ..... | 32.5 | 0.3 | ..... | NW | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Saint Maur, (near Paris) | 29.68 | 753.9 | 29.85 | 758.1 | 59.7 | 15.4 | 58 | WSW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.591 | 15.0 | Snowy | Géal de Nansouty |
| Toulouse, Observatory | 29.39 | 746.4 | 30.11 | 764.8 | 54.7 | 12.6 | 87 | WNW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0.307 | 7.8 | ..... | E. Renou. |
| Tours | 29.71 | 754.7 | 29.91 | 759.7 | 58.3 | 14.6 | 68 | W | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0.333 | 8.45 | Raining | The Staff. |
| Versailles, (near Paris) | ..... | ..... | 29.87 | 758.7 | 52.9 | 11.6 | 71 | NW | ..... | ..... | 3 | ..... | 4 | ..... | W | 0.287 | 7.3 | ..... | C. Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.08 | 763.9 | 30.10 | 764.5 | 54.3 | 12.4 | 98 | E | 10.3 | 4.6 | 2 | ..... | 9 | ..... | ..... | 0.201 | 5.10 | Showery | Dr. A. Bérigny. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0.669 | 17.0 | Covered | Marc Dechevrens, S. J. |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,368 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône. †Approximated.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.90 | 734.1 | 29.74 | 755.3 | 64.8 | 18.2 | 54 | W | | | 4 | | 8 | W | | 0.028 | 0.7 | | Prof. Dr. Hoh. |
| Berlin | 29.53 | 750.0 | 29.70 | 754.3 | 58.1 | 14.5 | 81 | W | | | 3 | | 8 | | | 0.138 | 3.5 | Raining | Prof. Arndt. |
| Breslau | 29.22 | 742.1 | 29.74 | 755.4 | 64.6 | 18.1 | 52 | NW | | | 2 | | 10 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.39 | 746.4 | 29.81 | 757.1 | 57.2 | 14.0 | 78 | SW | | | 3 | | 10 | | | 0.075 | 1.9 | | Albert Senz. |
| Cassel | 29.20 | 741.6 | 29.80 | 756.9 | 62.4 | 16.9 | 44 | W | | | 5 | | 5 | SW | | 0.089 | 2.26 | | Dr. H. Möhl. |
| Crefeld | 29.58 | 751.2 | 29.74 | 755.3 | 55.4 | 13.0 | 83 | W | | | 3 | | 9 | | | 0.31 | 8. | | Director Lose. |
| Emden | 29.65 | 753.2 | 29.69 | 754.1 | 51.8 | 11.0 | 91 | NNE | | | 1 | | 10 | | | 0.453 | 11.5 | | Prof. Prestel. |
| Frankfort on the Main | 29.44 | 747.7 | 29.80 | 756.9 | 55.4 | 13 | 75 | NW | | | 2 | | 10 | | | 0.055 | 1.4 | Raining | Physical Society. |
| Friedrichshafen | 28.48 | 723.4 | 29.91 | 759.7 | 55.0 | 12.8 | 78 | SSW | | | 4 | | 7 | WSW | | 0.339 | 8.6 | | M. Wilhelm. |
| Hamburg | 29.56 | 750.8 | 29.63 | 752.6 | 57.6 | 14.2 | 79 | WSW | | | 4 | | 6k | | | 0.661 | 16.8 | Dust-haze | Captain F. Hegemann. |
| Kiel | 29.60 | 751.7 | 29.61 | 752.1 | 48.9 | 9.4 | 95 | NE | | | 4 | | 10 | | | 0.470 | 11.93 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.65 | 753.1 | 29.73 | 755.1 | 62.2 | 16.8 | 64 | SE | | | 2 | | 4 | | | 0 | 0 | | Prof. E Luther. |
| Köslin | | | 29.66 | 753.3 | 56.3 | 13.5 | | S | | | 2 | | 5 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.32 | 744.8 | 29.73 | 755.2 | 63.1 | 17.3 | 60 | SW | | | 3 | | 9 | WSW | | 0.016 | 0.4 | | Prof. Bruhns. |
| Memel, Naval School | 29.71 | 754.7 | 29.76 | 755.9 | 47.1 | 8.4 | 86 | W | | | 1 | | 1cs;k | | | | | | Reinbrecht von Skalweit. |
| Neufahrwasser | 29.72 | 754.8 | 29.73 | 755.2 | 57.6 | 14.2 | 69 | FNE | | | 2 | | 10 | | | 0.102 | 2.6 | | A. Lothes. |
| Posen | 29.48 | 748.9 | 29.77 | 756 2 | 61.9 | 16.6 | 68 | NW | | | 2 | | 10 | | | *0.024 | *0.6 | | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.32 | 744.8 | 29.87 | 758.6 | 57.9 | 14.4 | 61 | W | | | 3 | | 10 | W | | 0.116 | 2.94 | Raining | Dr. Schur. |
| Stuttgart | 28.86 | 733.0 | 29.78 | 756.4 | 61.7 | 16.5 | 49 | W | | | 2 | | 8 | W | | 0.008 | 0.2 | | Prof. Schoder. |
| Treves, (Trier) | 29.19 | 741.5 | 29.71 | 754.6 | 66.8 | 18.8 | 74 | W | | | 6 | | 10 | | | 0.105 | 2.66 | Foggy | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.32 | 719.2 | 29.78 | 756.5 | 57.2 | 14.0 | 63 | W | 9 | 4 | | | 9kn | | W | 0 | 0 | | Dr. Von Bebber. |
| Wustrow, Naval School | 29.65 | 753.2 | 29.69 | 754.2 | 54.7 | 12.6 | 94 | ESE | | | 1 | | 7 | | | 0.071 | 1.8 | | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time. *Precipitation in 48 hours.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.59 | 751.5 | 29.97 | 761.3 | 70.3 | 21.3 | | SW | | | 2.0 | | | | | | | Clear | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.80 | 756.8 | 29.85 | 758.1 | 85.8 | 29.9 | 64 | SW | 24? | 10.7? | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.38 | 746.3 | 29.84 | 758.0 | 100 | 37.8 | 24 | Calm | | | | | 0 | | | 0 | 0 | Blue sky | |
| Bombay | 29.77 | 756.2 | 29.81 | 757.2 | 84.4 | 29.1 | 75 | NW | 16 | 7.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.79 | 706.0 | 29.74 | 755.3 | 93.3 | 34.1 | 27 | E | | | | | 5 | | E | 0 | 0 | D. clouds | |
| Lahore | 29.14 | 740.2 | 29.88 | 758.8 | 88.1 | 31.2 | 33 | NW | 1.8 | 0.8 | | | 3 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.32 | 694.0 | 29.85 | 758.3 | 77.7 | 25.4 | 75 | W | 12 | 5.4 | | | 9 | W | E | 0.08 | 2.0 | D. clouds | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.99 | 736.3 | 29.89 | 759.2 | 81.4 | 27.4 | 56 | Calm | 1.4 | 0.6 | | | 4 | | | 0 | 0 | | |
| Agra | 29.29 | 744.0 | 29.85 | 758.1 | 91.7 | 33.2 | 29 | N | | | | | | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.81 | 731.8 | 29.83 | 757.8 | 90.5 | 32.5 | 25 | E | 3 | 1.3 | | | | | | 0 | 0 | Blue sky | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.45 | 748.0 | 29.81 | 757.3 | 90.7 | 32.6 | 41 | ENE | 2.8 | 1.3 | | | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.55 | 750.6 | 29.86 | 758.3 | 90.6 | 32.6 | 30 | Calm | 0.9 | 0.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.70 | 754.4 | 29.88 | 759.0 | 88.2 | 31.2 | 29 | W | 1.9 | 0.8 | | | | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.88 | 708.1 | 29.88 | 758.8 | 82.8 | 28.2 | 22 | WNW | 4.8 | 2.1 | | | 0 | | | 0 | 0 | D. clouds | |
| Cuttack | 29.80 | 756.9 | 29.88 | 759.0 | 88.4 | 31.3 | 51 | S | 2.4 | 1.1 | | | 3 | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.87 | 758.6 | 29.89 | 759.2 | 82.1 | 27.8 | 67 | SSW | 2 | 0.9 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.51 | 749.5 | 29.90 | 759.4 | 81.3 | 27.4 | 34 | Calm | 2.5 | 1.1 | | | 0 | | | 0 | 0 | Misty | |
| Chittagong | 29.79 | 756.7 | 29.88 | 759.0 | 83.9 | 28.8 | 47 | NW | 6.2 | 2 8 | | | 8 | | | 0 | 0 | Blue sky | |
| Sibsagar | 29.62 | 752.2 | 29.95 | 760.8 | 78.9 | 26.1 | 59 | SE | 1.9 | 0.8 | | | 0 | | | | | | |
| Rangoon | | | | | | | | | | | | | | | | 0 | 0 | Blue sky | |
| Jubbulpore | 28.48 | 723.4 | 29.82 | 757.4 | 90.5 | 32.5 | 23 | NW | 4.2 | 1.9 | | | | | | | | | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,892.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.43 | 747.4 | 29.83 | 757.7 | 55.9 | 13.3 | 82 | S | 1.3 | 0.6 | ..... | ..... | 10 | ..... | ..... | 0.177 | 4.5 | ..... | Prof. Giovanni Codig. |
| Padua | 29.71 | 754.6 | 29.82 | 757.3 | 57.7 | 14.3 | 66 | ENE | 9.4 | 4.2 | ..... | ..... | 7 | N | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.63 | 752.6 | 29.82 | 757.4 | 58.8 | 14.9 | 59 | NE | 7.8 | 0.8 | ..... | ..... | 8 | S | ..... | 0.051 | 1.3 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.50 | 723.9 | 29.80 | 756.9 | 64.8 | 18.2 | 45 | SW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.30 | 744.1 | 29.80 | 757.0 | 67.3 | 19.6 | ..... | NE | ..... | ..... | 1 | ..... | 8 | NE | ..... | 0.012 | 0.3 | ..... | Prof. Schiaparelli. |
| Moncalieri | 28.91 | 734.2 | 29.81 | 757.1 | 63.7 | 17.6 | 51 | SSE | 4.3 | 1.9 | ..... | ..... | 4 | SW | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 27.91 | 708.9 | 29.81 | 757.1 | 62.2 | 16.8 | 47 | ENE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.68 | 753.9 | 29.90 | 759.5 | 57.9 | 14.4 | 75 | E | ..... | ..... | 4 | ..... | 5 | W | ..... | 0.028 | 0.7 | ..... | Prof. L. Vassallo. |
| Genoa | 29.71 | 754.6 | 29.87 | 758.8 | 63.3 | 17.4 | 50 | SE | 5.6 | 2.5 | ..... | ..... | 4 | SW | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.52 | 749.9 | 29.84 | 757.8 | 64.4 | 18.0 | 55 | ESE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0.157 | 4.0 | ..... | Prof. P. Pigorini. |
| Florence | 29.63 | 752.5 | 29.88 | 759.0 | 65.3 | 18.5 | 67 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 29.81 | 757.2 | 29.89 | 759.3 | 62.4 | 16.9 | 63 | SW | 3.1 | 1.4 | ..... | ..... | 5 | ..... | ..... | 0.020 | 0.5 | ..... | Prof. P. Monte. |
| Pesaro | 29.83 | 757.7 | 29.88 | 758.9 | 59.5 | 15.3 | 77 | S | 6.3 | 2.8 | ..... | ..... | 10 | S | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.36 | 720.4 | 29.91 | 759.8 | 55.4 | 13.0 | 71 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.118 | 3.0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.81 | 757.2 | 29.92 | 760.0 | 63.7 | 17.6 | 63 | NNW | ..... | ..... | 2 | ..... | 6 | SE | ..... | 0.161 | 4.1 | ..... | Avv. P. Ponticelli. |
| Rome | 29.71 | 754.6 | 29.88 | 759.0 | 56.7 | 13.7 | 85 | N | 7.4 | 3.3 | ..... | ..... | 10 | ..... | ..... | 0.197 | 5.0 | ..... | Prof. P. G. S. Ferrar |
| Naples, O. U. | 29.74 | 755.3 | 29.94 | 760.4 | 64.4 | 18.0 | 71 | SSW | ..... | ..... | 2 | ..... | 10 | SW | ..... | 0.004 | 0.1 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 68.9 | 20.5 | 46 | S | 4.9 | 2.2 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.78 | 756.3 | 29.97 | 761.1 | 68.4 | 20.2 | 50 | NW | ..... | ..... | 4 | ..... | 4 | NW | ..... | 0.024 | 0.6 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.12 | 739.7 | 30.00 | 762.1 | 63.3 | 17.4 | 74 | SW | 6.9 | 3.1 | ..... | ..... | 10 | ..... | ..... | 0.122 | 3.1 | ..... | Prof. F. D. Conti. |
| Palermo | 29.70 | 754.3 | 29.95 | 760.7 | 69.1 | 20.6 | 50 | SW | 14.3 | 6.4 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.84 | 758.0 | 29.92 | 759.9 | 69.8 | 21.0 | 49 | SE | ..... | ..... | 1 | ..... | 8 | WSW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.37 | 745.9 | 29.92 | 760.0 | 59.0 | 15.0 | 84 | ESE | 1.3 | 0.6 | ..... | ..... | 10 | S | ..... | 0.008 | 0.2 | ..... | Prof. F. Brioschi. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nagasaki | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Tokei (Yeddo) | 30.21 | 767.3 | 30.28 | 769.1 | 47.5 | 8.6 | 77 | SSW | 5.4 | 2.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | The Observatory. |
| Tokei (Yeddo) University | 30.17 | 766.3 | 30.27 | 768.9 | 49.5 | 9.7 | 78 | S | 4.5 | 2.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. P. V. Veeder. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 68.9 | 20.5 | 27 | N | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | L. Castillo, A. E. |
| Guadalajara | 24.97 | 634.4 | 30.02 | 762.4 | 46.4 | 8.0 | 45 | S | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | Prof. L. Perez. |
| Guanajuato | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 58.3 | 14.6 | 35 | NW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | Prof. M. Leal. |
| Mexico | 23.03 | 585.1 | 30.06 | 763.4 | 54.5 | 12.5 | 31 | W | 1.1 | 0.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Smoky | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalits) | ..... | ..... | ..... | ..... | 54.1 | 12.3 | 41 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | M. V. de Leon, M. E. |
| Puebla | 23.27 | 591.2 | 29.97 | 761.2 | 50.7 | 10.4 | 57 | E | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 29.65 | 752.6 | 29.64 | 752.9 | 71.6 | 22.0 | 82 | SSW | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 29.73 | 755.9? | 29.75 | 755.7 | 75.2 | 24.0 | 75 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 56.5 | 13.6 | 37 | S | 4.9 | 2.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.30 | 592.0 | 30.05 | 763.2 | 49.8 | 9.9 | 48 | E | 0.4 | 0.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | P. Spina. [M.M. D. D |
| Morelia | 23.98 | 609.0 | ..... | ..... | 57.2 | 14.0 | 71 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | M. Tena, F. L. Param. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Groningen | 29.78 | 756.5 | 29.78 | 756.5 | 52.9 | 11.6 | ..... | W | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.335 | 8.5 | ..... | ..... |
| Helder | 29.62 | 752.3 | 29.67 | 753.7 | 52.9 | 11.6 | ..... | NE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.614 | 15.6 | ..... | ..... |
| Hellevoetsluis | 29.71 | 754.6 | 29.71 | 754.6 | 48.9 | 9.4 | ..... | NW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.110 | 2.8 | ..... | ..... |
| Utrecht | 29.75 | 755.7 | 29.75 | 755.7 | 52.3 | 11.3 | 87 | WSW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | 29.70 | 754.3 | 29.74 | 755.5 | 51.6 | 10.9 | 92 | WSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.008 | 0.2 | Dull | H. v d Brink. |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.70 | 754.3 | 29.75 | 755.7 | 50.7 | 10.4 | 68 | NW | 3.4 | 1.5 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.80 | 756.9 | 29.84 | 757.9 | 37.4 | 3.0 | 79 | N | 9 | 4 | ..... | ..... | 0 | ..... | ..... | 0.055 | 1.4 | ..... | |
| Christiania | 29.67 | 753.5 | 29.81 | 757.2 | 48.9 | 9.4 | 43 | NE | 9 | 4 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.75 | 755.6 | 29.79 | 756.7 | 26.6 | — 3.0 | 61 | SE | 7 | 3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.87 | 758.8 | 30.07 | 763.6 | 65.8 | 18.8 | 92 | W | 3.1 | 1.4 | ..... | ..... | 3 | ..... | ..... | 0.118 | 3.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.23 | 742.5 | 30.24 | 768.2 | 67.1 | 19.5 | 61 | NW | 3.8 | 1.7 | ..... | ..... | 7 | NW | ..... | 0 | 0 | Solar halo... | Dr. A. M. R. dos Santos |
| Funchal, (Madeira) | 30.25 | 768.4 | 30.31 | 770.6 | 68.0 | 20.6 | 68 | SW | 6.3 | 2.8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.94 | 760.5 | 30.30 | 769.6 | 62.6 | 17.0 | 71 | SW | 9.8 | 4.4 | ..... | ..... | 8 | WNW | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.05 | 763.3 | 30.12 | 765.1 | 64.0 | 17.8 | 96 | SW | 29.8 | 13.3 | ..... | ..... | 10 | ..... | ..... | 0.244 | 6.2 | Raining | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.88 | 759.0 | 29.89 | 759.2 | 81.5 | 27.5 | ..... | S | ..... | ..... | 5 | ..... | 8 | ..... | S | 2 | ..... | D. clouds | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Rio Douro, S. 25° 58′, E. 32° 37′ | ..... | ..... | 30.21 | 767.3 | 75.2 | 24.0 | ..... | SE | ..... | ..... | 3 | ..... | 10 | ..... | SE | 1 | SE | Threatening | J. T. d'Oliveria, Com'd't. |
| Sado, Porto Praya, Cape Verde Islands. | 30.06* | 763.5* | 30.07* | 763.8* | 82.4 | 28.0 | ..... | E | ..... | ..... | 7 | ..... | 0 | ..... | ..... | 3 | E | Blue sky | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.76 | 755.9 | 29.77 | 756.1 | ..... | ..... | ..... | NW | ..... | ..... | 2 | ..... | 5 | ..... | NW | 1 | ..... | D. clouds | F. Texeira da Silva, Com'd't. |
| Tejo, N. 22° 10′ E. 113° 32′ | ..... | ..... | 29.95 | 760.8 | 78.8 | 26.0 | ..... | ENE | ..... | ..... | 3 | ..... | 2k | ..... | ENE | 1 | ENE | ..... | F. J. Ferreira, dos Anas, Com' |

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.31 | 744.5 | 29.72 | 754.9 | 65.5 | 18.6 | 62 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.33 | 744.9 | 29.74 | 755.4 | 55.6 | 13.1 | 63 | Calm | 0 | 0 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 29.48 | 748.8 | 29.73 | 755.1 | 40.3 | 4.6 | 82 | NW | 9 | 4 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.63 | 752.7 | 29.65 | 753.1 | 37.5 | 3.8 | 73 | N | 11 | 5 | ..... | ..... | 9n;ks | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.40 | 746.8 | 29.74 | 755.3 | 28.4 | — 2.0 | 100 | N | 13 | 6 | ..... | ..... | 10 [n | ..... | ..... | Blank | Blank | ..... | Ch. Forsten. |
| Kieff | 29.06 | 738.0 | 29.68 | 753.8 | 57.0 | 13.9 | 73 | N | 7 | 3 | ..... | ..... | 7k;ks;c | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.80 | 756.9 | 29.87 | 758.7 | 62.2 | 16.8 | 63 | SE | 9 | 4 | ..... | ..... | 2k | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.91 | 759.8 | 29.93 | 760.3 | 54.3 | 12.4 | 95 | S | 7 | 3 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.13 | 739.8 | 29.67 | 753.7 | 48.9 | 9.4 | 92 | SSE | 7 | 3 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | Raining | Meteorological Obs. |
| Lugan | 29.54 | 750.3 | 29.74 | 755.4 | 65.7 | 18.7 | 33 | S | 4 | 2 | ..... | ..... | 8n | ..... | ..... | Blank | Blank | ..... | Meteorological Obs. |
| Archangel | 29.64 | 752.8 | 29.66 | 753.3 | 21.9 | — 5.6 | 51 | NNW | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.38 | 720.8 | 29.80 | 757.0 | 49.1 | 9.5 | 60 | NNW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 29.96 | 761.0 | 29.88 | 758.9 | 57.0 | 13.9 | 32 | ESE | 11 | 5 | ..... | ..... | 10s;n | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Krotkowo* | 29.30 | 744.2 | 29.76 | 755.9 | 62.1 | 16.7 | 50 | SW | 9 | 4 | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.41 | 746.9 | 29.67 | 753.6 | 59.5 | 15.3 | 36 | SW | 7 | 3 | ..... | ..... | 4k | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.88 | 733.5 | 29.83 | 757.6 | 46.6 | 8.1 | 42 | SW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs |
| Nukuss | 29.55 | 750.6 | 29.79 | 756.6 | 54.3 | 12.4 | 41 | ENE | 13 | 6 | ..... | ..... | 10k | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.35 | 720.2 | 30.03 | 762.7 | 64.6 | 18.1 | 73 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.64 | 752.9 | 30.17 | 766.4 | 41.2 | 5.1 | 57 | NW | 0 | 0 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Yeniseisk | 29.54 | 750.3 | 29.87 | 758.7 | 36.5 | 2.5 | 89 | WNW | 16 | 7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Rain, snow and graupel | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 29.97 | 761.3 | 30.11 | 764.9 | 58.1 | 14.5 | 57 | Calm | 0 | 0 | ..... | ..... | 9n | ..... | ..... | ..... | ..... | Raining | Physical Observatory. |
| Nertchinsk | 27.65 | 702.4 | 29.71 | 754.5 | 45.1 | 7.3 | 46 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 30.09 | 764.2 | 30.18 | 766.6 | 42.6 | 5.9 | 57 | ENE | 7 | 3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 27.5 | — 2.5 | 54 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.95 | 760.6 | 30.05 | 763.2 | 63.1 | 17.3 | 63 | S | 3.7 | 1.67 | ..... | 1c | 2k | NW | ..... | 0.135 | 3.43 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.12 | 765.0 | 30.17 | 766.4 | 66.6 | 19.2 | 73 | NW | 1.6 | 0.71 | ..... | 2 | 7 | SE | ..... | 0.232 | 5.9 | Almost cov. | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.18 | 690.4 | ..... | ..... | 60.8 | 16.0 | 67 | W | 8.4 | 3.75 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.95 | 709.9 | 30.17 | 766.2 | 63.0 | 17 2 | 49 | W | 14.2 | 6.33 | ..... | 3 | 1 | NW | ..... | 0 | 0 | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 29.97 | 761.2 | 30.11 | 764.9 | 81.9 | 27.7 | 36 | NE | 3.1 | 1.39 | ..... | 3 | 5 | E | ..... | 0 | 0 | Cloudy | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.27 | 743.5 | 30.17 | 766.3 | 58.8 | 14.9 | 91 | SW | 13.2 | 5.91 | ..... | ..... | 10 | ..... | ..... | 0.063 | 1.6 | Rainy | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.82 | 757.3 | 29.88 | 759.0 | 80.0 | 26.7 | 80 | SE | 1.1 | 0.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 30.16 | 766.1 | 30.26 | 768.6 | 66.2 | 19.0 | 66 | WNW | 16.7 | 7.4 | ..... | 0 | 2 | ..... | NW | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.87 | 758.6 | 29.96 | 760.9 | 75.6 | 24.2 | 92 | SE | 0 | 0 | ..... | 6kn | 4kn | SE | SE | 0.098 | 2.50 | Cloudy | Leonardo de Tejeda, Chief of Engineers. |

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.



Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. | | Reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. Direction. | Wind. Velocity. | | Wind. Force. | Clouds. Amount. | | Clouds. Direction. | | Rain-fall or melted snow in the past 24 hours. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inches | Millimeters. | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0–10. | 0–10. | | Upper. From— | Lower. From— | Inches. | Millimeters. | | |
| Haparanda | 29.83 | 757.7 | 29.87 | 758.7 | 33.4 | 0.8 | ..... | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.84 | 757.8 | 29.89 | 759.1 | 33.4 | 0.8 | 68 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.81 | 757 2 | 29.86 | 758.5 | 39.2 | 4.0 | 73 | E | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0.059 | 1.5 | ..... | |
| Stockholm | 29.63 | 752.7 | 30.01 | 762.2 | 41.0 | 5.0 | 48 | NNE | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0.031 | 0.8 | ..... | |
| Wisby | 29.72 | 754.9 | 29.78 | 756.4 | 41.0 | 5.0 | 75 | ENE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.75 | 755.6 | 29.82 | 757.5 | 43.0 | 6.1 | 45 | NE | 6.9 | 3.1 | ..... | ..... | 5 | ..... | NNW | 0.001 | 0.02 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.55 | 725.1 | 29.98 | 761.5 | 51.3 | 10.7 | 78 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.055 | 1.4 | Raining | The Observatory. |
| Zurich | 28.28 | 718.4 | 29.91 | 759.8 | 56.5 | 13.6 | 62 | W | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.165 | 4.2 | Cloudy | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +0.8 mm.; Thermometer, —1.5 cent.; Relative Humidity, +21 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.96 | 761.0 | 63.9 | 17.7 | 43 | S | 7 | 3.0 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stéfanidès. |
| Valona | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. Bertrand. |
| Varna | ..... | ..... | 29.96 | 761.0 | 72.1 | 22.3 | ..... | W | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.79 | 756.7 | 29.90 | 759.5 | 71.1 | 21.7 | 68 | SW | ..... | ..... | 3 | ..... | 6ks | ..... | SW | 0.10 | 2.5 | D. clouds | Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.20 | 767.1 | 30.27 | 768.8 | 36.0 | 2.2 | 64 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | ..... | ..... | Clear | Hon. J. Ferguson. |
| Brockville, Ontario | 29.94 | 760.6 | 30.24 | 768.1 | 48 | 8.9 | ..... | N | 1 | 0.4 | ..... | 2c | 2ks | Calm | Calm | 0 | 0 | Fair | W. R. Bigg. |
| *Chatham, N B | 30.20 | 767.1 | 30.20 | 768.6 | 36 | 2.2 | 61 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | G. A. Blair. |
| Charlottetown, P. E. Island. | 30.19 | 766.8 | 30.22 | 767.6 | 37 | 2.8 | 83 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | H. J. Cundall, C. E. |
| Cornwall, Ontario | 30.06 | 762.9 | 30.19 | 766.8 | 48.0 | 8.9 | 92 | E | ..... | ..... | 1 | 2cs | 3k | NE | ..... | 0 | 0 | Clearing | James Smith, M. A. |
| Dalhousie, N. B | 30.27 | 768.8 | 30.30 | 769.6 | 35.0 | 1.7 | 84 | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | Clear | H. A. Johnson. |
| Esquimault, B. C | 29.87 | 758.7 | 29.92 | 760.0 | 35.1 | 1.7 | 100 | NE | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | W. H. Revis. |
| *Father Point, Quebec | 30.23 | 767.8 | 30.26 | 768.6 | 34 | 1.1 | 85 | Calm | 0 | 0 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear | J. McWilliams. |
| Fredericton, N. B | 30.19 | 766.8 | 30.25 | 768.3 | 42.1 | 5.6 | 67 | E | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. Harrison. |
| *Fort Garry Manitoba | 29.26 | 743.2 | 30.11 | 764.8 | 34 | 1.1 | 97 | SE | 6 | 2.7 | ..... | 5ck | 5n | S | S | 0.310 | 7.87 | Cloudy | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 29.10 | 739.1 | 30.21 | 767.3 | 47 | 8.3 | 77 | E | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | James Grant. |
| *Halifax, N. S | 30.05 | 763.3 | 30.19 | 766.8 | 40 | 4.4 | 77 | SE | 4 | 1.8 | ..... | 5ck | 0 | N | ..... | 0 | 0 | Fair | F. Allison, M. A. |
| Hamilton, Ontario | 29.90 | 759.4 | 30.28 | 769.1 | 44.7 | 7.1 | 83 | NE | ..... | ..... | 1 | 0 | ..... | ..... | ..... | 0 | 0 | Clear | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.72 | 754.9 | 29.75 | 755.6 | 34 | 1.1 | 100 | N | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Overcast | E. Weedon. |
| *Kingston, Ontario | 29.90 | 759.4 | 30.23 | 767.8 | 50 | 10.0 | 70 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.16 | 766.1 | 30.20 | 767.1 | 35.0 | 1.7 | ..... | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.06 | 1.5 | Fair | C. H. Rigby. |
| *Montreal, Quebec | 29.99 | 761.7 | 30.19 | 766.8 | 49 | 9.4 | 87 | N | 6 | 2.7 | ..... | 8cs | 2s | NE | ..... | 0 | 0 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.57 | 751.1 | 30.26 | 769.1 | 44 | 6.7 | 68 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Rev. R. Mosley. |
| Peterboro, Ontario | 29.48 | 748.8 | 30.23 | 767.8 | 51.7 | 10.9 | 72 | NE | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.53 | 750.0 | 30.23 | 767.8 | 45 | 7.2 | 94 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | H. Morgan. |
| Port Hastings, N. S | 30.18 | 766.6 | 30.23 | 767.8 | 32.6 | 0.3 | ..... | NW | 2 | 0.9 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear | Peter Grant. |
| Port Stanley, Ontario | 29.58 | 751.3 | 30.24 | 768.1 | 44 | 6.7 | 93 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine | M. Payne. |
| *Quebec, Quebec | 29.80 | 759.2 | 30.22 | 767.6 | 43 | 6.1 | 75 | Calm | 0 | 0 | ..... | Haze | Haze | ..... | ..... | 0 | 0 | Clear | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.82 | 757.4 | 30.29 | 769.4 | 42 | 5.6 | 79 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 30.12 | 765.0 | 30.17 | 766.3 | 46 | 7.8 | 72 | NW | 1 | 0.4 | ..... | 2k | 2s | ..... | ..... | 0 | 0 | Clear | Dr. Gove. |
| St. John, N. B | 30.04 | 763.0 | 30.21 | 767.3 | 38 | 3.3 | 90 | N | 1 | 0.4 | ..... | 4c | 0 | ..... | ..... | 0 | 0 | Fair | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.52 | 749.8 | 30.24 | 768.1 | 48 | 8.9 | 69 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine | K. Stewart. |
| Stayner, Ontario | 29.45 | 748.0 | 30.24 | 768.1 | 47 | 8.3 | 70 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | R. J. Cole. |
| Stratford, Ontario | 28.93 | 734.8 | 30.23 | 767.8 | 45.6 | 7.2 | 76 | E | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.18 | 766.6 | 30.21 | 767.3 | 37 | 2.8 | 68 | N | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | T. C. Hill. |
| *Toronto, Ontario | 29.87 | 758.7 | 30.26 | 768.6 | 48 | 8.9 | 75 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Magnetic Observatory |
| Windsor, N. S | 30.11 | 764.8 | 30.20 | 767.1 | 42.0 | 5.6 | 79 | NE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 33.0 | 0.6 | 100 | NE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.18 | 4.6 | Stormy | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.96 | 761.0 | 30.19 | 766.8 | 47 | 8.3 | 85 | S | 6 | 2.7 | ..... | ..... | 10n | ..... | N | 0.01 | 0.3 | Light rain... | |
| Alpena, Michigan | 29.59 | 751.6 | 30.25 | 768.3 | 46 | 7.8 | 69 | NE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Atlantic City, New Jersey | 30.18 | 766.6 | 30.20 | 767.1 | 44 | 6.7 | 92 | NE | 22 | 9.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Augusta, Georgia | 29.93 | 760.2 | 30.12 | 765.0 | 58 | 14.4 | 76 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Baltimore, Maryland | 30.17 | 766.3 | 30.22 | 767.6 | 47 | 8.3 | 85 | NE | 8 | 3.6 | ..... | 2k | 0 | NE | ..... | 0.02 | 0.5 | Fair ..... | |
| Barnegat, New Jersey | 30.19 | 766.8 | 30.21 | 767.3 | 43 | 6.1 | 91 | NE | 18 | 8.0 | ..... | ..... | 10s | ..... | NE | 0.07 | 1.8 | Cloudy..... | |
| Bismarck, Dakota | 27.88 | 708.1 | 29.74 | 755.4 | 47 | 8.3 | 100 | E | 32 | 14.3 | ..... | ..... | 10n | ..... | E | 0.22 | 5.6 | Light rain.... | |
| Boise City, Idaho | 26.97 | 685.0 | 29.85 | 758.2 | 29 | — 1.7 | 78 | SE | 4 | 1.8 | ..... | 5k | 0 | Calm | ..... ..... | 0 | 0 | Fair ..... | |
| Boston, Massachusetts | 30.06 | 763.5 | 30.23 | 767.8 | 36.5 | 2.5 | 100 | S | 4 | 1.8 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Dense fog..... | |
| Brackettville, Texas | 28.55 | 725.2 | 29.53 | 750.0 | 73 | 22.8 | 76 | E | 1 | 0.4 | ..... | 8k | 0 | W | ..... | 0 | 0 | Cloudy..... | |
| Breckenridge, Minnesota | 28.86 | 733.0 | 29.85 | 758.2 | 47 | 8.3 | 100 | E | 22 | 9.8 | ..... | ..... | 10n | ..... | Calm | 0.60 | 15.2 | Heavy rain.. | |
| Brownsville, Texas | 29.69 | 754.8 | 29.67 | 753.6 | 73 | 22.8 | 85 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Buffalo, New York | 29.50 | 749.3 | 30.21 | 767.3 | 48 | 8.9 | 78 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 45 | 7.2 | 68 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Burlington, Vermont | 29.94 | 760.5 | 30.20 | 767.1 | 50 | 10.0 | 86 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | N | 0.19 | 4.8 | Light rain... | |
| Cairo, Illinois | 29.55 | 750.6 | 29.93 | 760.2 | 68 | 20.0 | 60 | SE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Camp Grant, Arizona | 25.10 | 637.5 | 29.90 | 759.4 | 36 | 2.2 | 53 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.08 | 2.0 | Clear..... | |
| Camp Verde, Arizona | 26.74 | 679.2 | 30.23 | 767.8 | 32 | 0.0 | 89 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 1.08 | 27.4 | Clear..... | |
| Campo, California | 27.37 | 695.2 | 29.94 | 760.5 | 37 | 2.8 | 90 | SW | 4 | 1.8 | ..... | 0 | 5ks | ..... | Calm | 0.39 | 9.9 | Fair ..... | |
| Cape Hatteras, N. Carolina | 30.05 | 763.3 | 30.06 | 763.5 | 53 | 11.7 | 93 | NE | 24 | 10.7 | ..... | 5k | 5s | NE | NE | 0.67 | 17.0 | Cloudy..... | |
| Cape Henry, Virginia | 30.11 | 764.8 | 30.13 | 765.3 | 49 | 9.4 | 93 | NE | 26 | 11.6 | ..... | ..... | 10s | ..... | NE | 0.84 | 21.3 | Cloudy..... | |
| Cape Lookout, N. Carolina | 30.04 | 763.0 | 30.05 | 763.3 | 53 | 11.7 | 87 | NE | 25 | 11.2 | ..... | ..... | 10s | ..... | NE | 0.02 | 0.5 | Cloudy..... | |
| Cape May, New Jersey | 30.17 | 766.3 | 30.20 | 767.1 | 45 | 7.2 | 84 | NE | 14 | 6.3 | ..... | ..... | 10s | ..... | ..... | 0.01 | 0.3 | Cloudy..... | |
| Charleston, South Carolina | 30.01 | 762.2 | 30.08 | 764.0 | 59 | 15.0 | 76 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy..... | |
| Cheyenne, Wyoming | 23.46 | 595.9 | 29.40 | 746.7 | 27 | — 2.8 | 100 | NW | 24 | 10.7 | ..... | ..... | 10n | ..... | Calm | 0.05 | 1.3 | Heavy snow | |
| Chicago, Illinois | 29.40 | 746.7 | 30.09 | 764.3 | 51 | 10.6 | 72 | E | 6 | 2.7 | ..... | 5c | 0 | E | ..... | 0 | 0 | Fair ..... | |
| Cincinnati Ohio | 29.42 | 747.3 | 30.06 | 763.5 | 55 | 12.8 | 68 | NE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| Cleveland, Ohio | 29.45 | 748 0 | 30.18 | 766.6 | 50 | 10.0 | 65 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Concho, Texas | 27.76 | 705.1 | 29.35 | 745.5 | 66 | 18.9 | 68 | S | ..... | ..... | 2 | 4k | 0 | S | ..... | 0 | 0 | Fair ..... | |
| Corsicana, Texas | 29.25 | 742.9 | 29.69 | 754.1 | 69 | 20.6 | 85 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy..... | |
| Davenport, Iowa | 29.35 | 745.5 | 29.98 | 761.5 | 52 | 11.1 | 73 | E | 12 | 5.4 | ..... | 9cs | Haze | Calm | Calm | 0 | 0 | Cloudy..... | |
| Deadwood, Dakota | 24.83 | 630.7 | ..... | ..... | 37 | 2.8 | 100 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.80 | 20.3 | Heavy rain.. | |
| Denison, Texas | 28.93 | 734.8 | 29.70 | 754.4 | 67 | 19.4 | 79 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy..... | |
| Denver, Colorado | 24.16 | 613.6 | 29.38 | 746.2 | 41 | 5.0 | 33 | NW | 8 | 3.6 | ..... | 2cs | 8s | NW | NW | 0 | 0 | Threatening | |
| Detroit, Michigan | 29.49 | 749.0 | 30.16 | 766.1 | 48 | 8.9 | 78 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Dodge City, Kansas | 23.89 | 683.0 | 29.04 | 737.6 | 59 | 15.0 | 88 | S | 32 | 14.3 | ..... | 5ck | 8ks | S | S | 0.07 | 1.8 | Cloudy..... | |
| Dubuque, Iowa | 29.31 | 744.5 | 30.01 | 762.2 | 50 | 10.0 | 65 | E | 3 | 1.3 | ..... | 5cs | 5s | NE | Calm | 0.43 | 10.9 | Cloudy..... | |
| Duluth, Minnesota | 29.46 | 748.3 | 30.15 | 765.8 | 41 | 5.0 | 82 | NE | 2 | 0.9 | ..... | ..... | 10s | ..... | NE | 0.14 | 3.6 | Cloudy ..... | |
| Eagle Pass, Texas | 28.79 | 731.3 | 29.49 | 749.0 | 72 | 22 2 | 85 | E | 8 | 3.6 | ..... | 10k | 0 | SE | ..... | 0 | 0 | Cloudy..... | |
| Eastport, Maine | 30.10 | 764.5 | 30.16 | 766.1 | 47 | 8.3 | 62 | W | 2 | 0.9 | ..... | 10k | 0 | Calm | ..... | 0 | 0 | Cloudy..... | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 60 | 15.6 | 40 | W | ..... | ..... | 6 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Erie, Pennsylvania | 29.47 | 748.5 | 30.19 | 766.8 | 52 | 11.1 | 73 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Escanaba, Michigan | 29.54 | 750.3 | 30.21 | 767.3 | 46 | 7.8 | 69 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| Florence, Arizona | 28.31 | 719.1 | 29.91 | 759.7 | 50 | 10.0 | 72 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 1.10 | 27.9 | Clear. ..... | |
| Fort Bayard, New Mexico | 23.96 | 608.6 | 29.96 | 761.0 | 29 | — 1.7 | 59 | NW | 16 | 7.2 | ..... | ..... | 10s | ..... | NW | 0.01 | 0.3 | Cloudy..... | |
| Fort Craig, New Mexico | 25.28 | 642 1 | ..... | ..... | 38 | 3.3 | 41 | N | 12 | 5.4 | ..... | 2k | 0 | W | ..... | 0 | 0 | Fair..... | |
| Fort Davis, Texas | 24.02 | 633.0 | 29.88 | 758.9 | 63 | 17.2 | 10 | SW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| Fort Gibson, Indian Ter | 29.16 | 740.7 | 29.67 | 753.6 | 70 | 21.1 | 66 | SE | 8 | 3.6 | ..... | 2c | 0 | SW | ..... | 0 | 0 | Clear ..... | |
| Fort Griffin, Texas | 28.36 | 720.3 | 29.56 | 750.8 | 70 | 21.1 | 70 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy..... | |
| Fort St. Michael, Alaska | 29.29 | 744.0 | 29.32 | 744.7 | 23 | — 5.0 | 100 | NE | 35 | 15.6 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy..... | |
| Fort Sill, Indian Territory | 28.41 | 721.6 | 29.45 | 748.0 | 67 | 19.4 | 74 | SE | 24 | 10.7 | ..... | ..... | 10s | ..... | SW | 0.24 | 6.1 | Threatening | |
| Galveston, Texas | 29.68 | 753.9 | 29.73 | 755.1 | 72 | 22.2 | 95 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy..... | |
| Grand Haven, Michigan | 29.51 | 749.5 | 30.16 | 766.1 | 50 | 10.0 | 72 | E | 8 | 3.6 | ..... | 2c | 0 | SW | ..... | 0 | 0 | Clear. ..... | |
| Indianapolis, Indiana | 29.28 | 743 7 | 30.05 | 763.3 | 55 | 12.8 | 74 | NE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Indianola, Texas | 29.68 | 753.9 | 29.70 | 754.4 | 74 | 23.3 | 95 | SE | 11 | 4.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Jacksboro, Texas | 28.50 | 723.9 | 29.57 | 751.1 | 68 | 20.0 | 84 | SE | 14 | 6.3 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy..... | |
| Jacksonville, Florida | 29.99 | 761.7 | 30.02 | 762.5 | 67 | 19.4 | 69 | NE | 12 | 5.4 | ..... | ..... | 10ks | ..... | NE | 0 | 0 | Cloudy..... | |
| Keokuk, Iowa | 29.26 | 743.2 | 29.86 | 758.4 | 60 | 15.6 | 82 | SE | 20 | 8.9 | ..... | 0 | 4s | ..... | Calm | 0 | 0 | Fair ..... | |
| Key West, Florida | 29.84 | 757.9 | 29.88 | 758.9 | 79 | 26.1 | 78 | NE | 12 | 5.4 | ..... | 0 | 5s | ..... | N | 0 | 0 | Fair ..... | |
| Kittyhawk, North Carolina | 30.07 | 763.8 | 30.09 | 764.3 | 51 | 10.6 | 93 | NE | 32 | 14.3 | ..... | ..... | 10s | ..... | NE | 0.90 | 22.9 | Cloudy ..... | |
| Knoxville, Tennessee | 29.05 | 737.9 | 30.04 | 763.0 | 61 | 16.1 | 71 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| La Crosse, Wisconsin | 29.28 | 743.7 | 30.01 | 762.2 | 54 | 12.2 | 61 | SE | 3 | 1.3 | ..... | 10ck | 0 | SE | ..... | 0 | 0 | Cloudy..... | |
| La Mesilla, New Mexico | 25 93 | 658.6 | 30.08 | 764.0 | 40 | 4.4 | 56 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Laredo, Texas | 29 24 | 742.7 | 29.56 | 750.8 | 75 | 23.9 | 81 | E | 3 | 1.3 | ..... | 10k | 0 | S | ..... | 0 | 0 | Cloudy..... | |
| Leavenworth, Kansas | 28.85 | 732.8 | 29.66 | 753.4 | 62 | 16.7 | 83 | SE | 12 | 5.4 | ..... | 10cs | 0 | S | ..... | 0.11 | 2.8 | Cloudy..... | |
| Los Angeles, California | 29.64 | 752.8 | 29.99 | 761.7 | 44 | 6.7 | 76 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.13 | 3.3 | Clear..... | |
| Louisville, Kentucky | 29.46 | 748.3 | 30.02 | 762.5 | 58 | 14.4 | 70 | NE | 7 | 3.1 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear ..... | |
| Lynchburg, Virginia | 29.46 | 748.3 | 30.14 | 765.5 | 56 | 13.3 | 57 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 9 | Clear..... | |
| Marquette, Michigan | 29.47 | 748.5 | 30.19 | 766.8 | 40 | 4.4 | 73 | N | 4 | 1.8 | ..... | 5c | 0 | NE | ..... | 0 | 0 | Fair ..... | |
| Mason, Texas | 28.05 | 712.5 | 29.70 | 754.4 | 69 | 20.6 | 80 | S | 11 | 4.9 | ..... | ..... | 10s | ..... | S | 0 | 0 | Threatening | |
| Memphis, Tennessee | 29.56 | 750.8 | 29.87 | 758.7 | 67 | 19.4 | 64 | E | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Milwaukee, Wisconsin | 29.40 | 746.7 | 30.13 | 765.3 | 48 | 8.9 | 78 | SE | 10 | 4.5 | ..... | 8c | 0 | SW | ..... | 0 | 0 | Fair..... | |
| Mobile, Alabama | 29.89 | 759.2 | 29.93 | 760.2 | 69 | 20.6 | 90 | SE | 5 | 2.2 | ..... | 8c | 0 | NW | ..... | 0 | 0 | Fair ..... | |
| Montgomery, Alabama | 29.79 | 756.7 | 30.02 | 762.5 | 64 | 17.8 | 78 | E | 12 | 5.4 | ..... | 2c | 2ks | W | SE | 0 | 0 | Fair ..... | |
| Morgantown, West Virginia | 29.06 | 738.1 | 30.12 | 765.0 | 52 | 11.1 | 66 | E | 7 | 3.1 | ..... | 0 | 8s | ..... | E | 0 | 0 | Fair ..... | |
| Mt. Washington, N. H. | 23.87 | 606.3 | 30.23 | 767.8 | 31 | — 0.6 | 100 | E | 6 | 2.7 | ..... | ..... | 10n | ..... | E | 0.28 | 7.1 | Heavy snow | |
| Nashville, Tennessee | 29.45 | 748.0 | 29.97 | 761.2 | 66 | 18.9 | 64 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| New Haven, Connecticut | 30.12 | 765.0 | 30.24 | 768.1 | 44 | 6.7 | 88 | Calm | 0 | 0 | ..... | ..... | 10s;fg | ..... | Calm | 0 | 0 | Foggy ..... | |
| New London, Connecticut | 30.18 | 766.6 | 30.23 | 767.8 | 45 | 7.2 | 84 | Calm | 0 | 0 | ..... | 2cs | 2s | W | E | 0 | 0 | Fair ..... | |
| New Orleans, Louisiana | 29.78 | 756.4 | 29.84 | 757.9 | 71 | 21.7 | 85 | E | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Newport, Rhode Island | 30.18 | 766.6 | 30.24 | 768.1 | 43 | 6.1 | 83 | NE | 4 | 1.8 | ..... | ..... | 10ks | ..... | NE | 0 | 0 | Threatening | |
| New York, New York | 30.05 | 763.3 | 30.23 | 767.8 | 44 | 6.7 | 83 | E | 6 | 2.7 | ..... | ..... | Fog | ..... | Calm | Inap. | Inap. | Foggy ..... | |
| Norfolk, Virginia | 30.09 | 764.3 | 30.15 | 765.8 | 49 | 9.4 | 93 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.13 | 3.3 | Cloudy..... | |
| North Platte, Nebraska | 26.52 | 673.6 | 28.93 | 734.8 | 55 | 12.8 | 81 | SE | 44 | 19.7 | ..... | ..... | 10s | ..... | SE | 0.13 | 3.3 | Cloudy..... | |
| Olympia, Washington Ter. | 29.95 | 760.7 | 29.99 | 761.7 | 35 | 1.7 | 90 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 6 | 0 | Clear..... | |
| Omaha, Nebraska | 28.58 | 725.9 | 29.61 | 752.1 | 58 | 14.4 | 94 | E | 6 | 2.7 | ..... | ..... | 10s | ..... | SW | 0.64 | 16.3 | Cloudy..... | |
| Oswego, New York | 29.91 | 759.7 | 30.23 | 767.8 | 50 | 10.0 | 86 | N | 2 | 0.9 | ..... | 2c | 8s | NW | NW | 0 | 0 | Cloudy..... | |
| Pembina, Dakota | 29.17 | 740.9 | 30.01 | 762.2 | 38 | 2.3 | 81 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.25 | 6.3 | Cloudy..... | |
| Philadelphia, Pennsylvania | 30.19 | 766.8 | 30.24 | 768.1 | 44 | 6.7 | 84 | NE | 8 | 3.6 | ..... | ..... | 10s;sm' | ..... | Calm | 0.04 | 1.0 | Cloudy..... | |
| Phœnix, Arizona | 28.87 | 733.3 | 30.72 | 780.3 | 45 | 7.2 | 76 | E | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.75 | 19.1 | Clear..... | |
| Pike's Peak, Colorado | 17.09 | 434.1 | 29.39 | 744.2 | — 6 | —14.4 | 61 | NW | 54 | 24.1 | ..... | 5c | 0 | NW | ..... | 0.39 | 9.9 | Fair..... | |
| Pioche, Nevada | 23.82 | 605.0 | 29.58 | 751.3 | 21 | — 6.1 | 85 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear..... | |
| Pittsburg, Pennsylvania | 29.32 | 744.7 | 30.14 | 765.5 | 49 | 9.4 | 78 | E | 5 | 2.2 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair ..... | |
| Port Huron, Michigan | 29.51 | 749.5 | 30.18 | 766.6 | 50 | 10.0 | 72 | NE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Portland, Maine | 30.14 | 765.5 | 30.19 | 766.8 | 51 | 10.6 | 72 | S | 4 | 1.8 | ..... | 10k | Haze | NE | ..... | 0 | 0 | Cloudy..... | |
| Portland, Oregon | 29.98 | 761.5 | 30.09 | 764.3 | 42 | 5.6 | 91 | SE | 1 | 0.4 | ..... | ..... | 10ks | ..... | W | 0.01 | 0.3 | Cloudy..... | |
| Prescott, Arizona | 24.61 | 625.1 | 29.97 | 761.2 | 16 | — 8.9 | 66 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.53 | 13.5 | Clear. ..... | |
| Punta Rassa, Florida | 29.91 | 759.7 | 29.93 | 760.2 | 71 | 21.7 | 90 | NE | 10 | 4.5 | ..... | ..... | 10s | ..... | NE | 0.74 | 18.8 | Cloudy..... | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Red Bluff, California | 29.67 | 753.6 | 30.04 | 763.0 | 45 | 7.2 | 87 | N | 1 | 0.4 | ..... | 5k | 5s | Calm | Calm | Inap. | Inap. | Cloudy | |
| Rochester, New York | 29.60 | 751.8 | 30.22 | 767.6 | 51 | 10.6 | 72 | SE | 3 | 1.3 | ..... | 1ck | 0 | Calm | ..... | 0 | 0 | Clear. | |
| Roseburg, Oregon | 29.51 | 749.5 | 30.10 | 764.5 | 34.5 | 1.4 | 95 | Calm | 0 | 0 | ..... | 5cs | 0 | Calm | ..... | 0.05 | 1.3 | Fair | |
| Sacramento, California | 29.94 | 760.5 | 30.03 | 762.7 | 45 | 7.2 | 84 | SE | 4 | 1.8 | ..... | 1c | 0 | N | ..... | 0 | 0 | Clear. | |
| St. Louis, Missouri | 29.37 | 746.0 | 29.92 | 760.0 | 63 | 17.2 | 72 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| St. Marks, Florida | 29.98 | 761.5 | 29.99 | 761.7 | 68 | 20.0 | 79 | SE | 6 | 2.7 | ..... | 0 | 2s | ..... | SE | 0 | 0 | Fair. | |
| St. Paul, Minnesota | 29.09 | 738.9 | 29.91 | 759.7 | 51 | 10.6 | 64 | E | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Salt Lake City, Utah | 25.33 | 643.4 | 29.66 | 753.4 | 33 | 0.6 | 100 | SW | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.06 | 1.5 | Light snow. | |
| San Antonio, Texas | 29.01 | 736.8 | 29.56 | 750.8 | 71 | 21.7 | 90 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| San Diego, California | 29.98 | 761.5 | 30.05 | 763.3 | 49 | 9.4 | 78 | NW | 4 | 1.8 | ..... | 5k | 0 | NW | ..... | 0.26 | 6.6 | Fair | |
| Sandusky, Ohio | 29.49 | 749.0 | 30.17 | 766.3 | 52 | 11.1 | 73 | E | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandy Hook, New Jersey | 30.20 | 767.1 | 30.24 | 768.1 | 42 | 5.6 | 91 | E | 8 | 3.6 | ..... | ..... | 10ks | ..... | E | 0 | 0 | Cloudy | |
| San Francisco, California | 29.97 | 761.2 | 30.04 | 763.0 | 47 | 8.3 | 62 | NW | 2 | 0.9 | ..... | 5ck | 0 | NW | ..... | 0 | 0 | Fair | |
| Santa Fé, New Mexico | 22.91 | 581.9 | 29.45 | 748.0 | 24 | — 4.4 | 74 | SW | 4 | 1.8 | ..... | 0 | 5s | ..... | Calm | 0.02 | 0.5 | Fair | |
| Savannah, Georgia | 29.96 | 761.0 | 30.05 | 763.3 | 60 | 15.6 | 82 | NE | 9 | 4.0 | ..... | ..... | 10s | ..... | NE | 0.21 | 5.3 | Cloudy | |
| Shreveport, Louisiana | 29.59 | 751.6 | 29.80 | 756.9 | 69 | 20.6 | 85 | NE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Smithville, North Carolina | 30.04 | 763.0 | 30.08 | 764.0 | 54 | 12.2 | 87 | N | 11 | 4.9 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Springfield, Massachusetts | 30.03 | 762.7 | 30.17 | 766.3 | 43 | 6.1 | 92 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | S | 0.04 | 1.0 | Light rain | |
| Stockton, Texas | 26.68 | 677.7 | 29.68 | 753.9 | 55 | 12.8 | 50 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 30.18 | 766.6 | 30.24 | 768.1 | 45 | 7.2 | 76 | S | 8 | 3.6 | ..... | 2k | 8s | N | SW | 0 | 0 | Cloudy | |
| Toledo, Ohio, | 29.47 | 748.5 | 30.15 | 765.8 | 53 | 11.7 | 73 | E | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 40 | 4.4 | 83 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.49 | 12.4 | Clear | |
| Tybee Island, Georgia | 30.02 | 762.5 | 30.06 | 763.5 | 60 | 15.6 | 88 | N | 20 | 8.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Umatilla, Oregon | 29.64 | 752.8 | ..... | ..... | 35 | 1.7 | 80 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.62 | 752.3 | 29.87 | 758.7 | 66 | 18.9 | 89 | NE | 6 | 2.7 | ..... | 2c | 0 | NE | ..... | 0 | 0 | Fair. | |
| Virginia City, Montana | 23.98 | 609.1 | 29.46 | 748.3 | 20 | — 6.7 | 100 | NW | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.15 | 3.8 | Light snow. | |
| Visalia, California | 29.68 | 753.9 | 30.06 | 763.5 | 45 | 7.2 | 84 | N | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Washington, D. C | 30.11 | 764.8 | 30.23 | 767.8 | 45 | 7.2 | 92 | NE | 6 | 2.7 | ..... | ..... | 10ks | ..... | NE | 0.01 | 0.3 | Cloudy | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 32 | 0.0 | 59 | SE | ..... | ..... | 1 | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 29.99 | 761.7 | 30.07 | 763.8 | 52 | 11.1 | 93 | N | 10 | 4.5 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Winnemucca, Nevada | 25.48 | 647.2 | 29.84 | 757.9 | 33 | 0.6 | 70 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Wood's Holl, Mass | 30.17 | 766.3 | 30.23 | 767.8 | 44 | 6.7 | 84 | SE | 5 | 2.2 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Threatening | |
| Yankton, Dakota | 28.40 | 721.3 | 29.64 | 752.8 | 56 | 13.3 | 90 | SE | 24 | 10.7 | ..... | ..... | 10n | ..... | Calm | 0.08 | 2.0 | Light rain | |
| Yuma, Arizona | 29.84 | 757.9 | 30.01 | 762.2 | 49 | 9.4 | 63 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear. | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| York Factory, B. A | 29.97 | 761.2 | 30.02 | 762.5 | 16.0 | — 8.9 | 92 | SE | 4 | 1.8 | ..... | ..... | 8s | ..... | ..... | 0.01 | 0.3 | Cloudy | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I | 29.85 | 758.2 | 29.87 | 758.7 | 82 | 27.8 | 74 | SW | 2.4 | 1.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | 30.08 | 764.0 | 30.09 | 764.3 | 78 | 25.6 | 82 | Calm | 0 | 0 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I | 29.81 | 757.2 | 29.89 | 759.2 | 82 | 27.8 | ..... | SE | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | F. M. Everett. |
| Paramaribo, D. Guiana, S. A | 29.99 | 761.7 | 29.99 | 761.7 | 84 | 28.9 | 79 | E | ..... | ..... | 2 | 5k | 7ks | E | ..... | 0.020 | 0.51 | ½ Cloudy | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dr. H. Groot. |
| Medellin, Colombia, S. A | 25.22 | 640.6 | ..... | ..... | 68.5 | 20.3 | 80 | Calm | ..... | ..... | 0 | 2cs | 1ks | ..... | ..... | 0.86 | 21.8 | ..... | Thomas Herran. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m., Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,156.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,550 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.98 | 761.5 | 45 | 7.2 | 44 | 6.7 | 76 | W | 10 | 4.5 | ..... | ..... | 8 | ..... | W | 0 | 0 | ..... | ..... | Cloudy..... | |
| Navy Yard, Pensacola, Fla. | 30.04 | 763.0 | 75 | 23.9 | 75 | 23.9 | 90 | SE | 22 | 9.8 | ..... | ..... | 5 | ..... | SE | 0 | 0 | ..... | ..... | Cloudy..... | |
| Navy Yard, Portsmouth, N.H | 30.26 | 768.6 | 71 | 21.7 | 50 | 10.0 | 72 | SW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Naval Hospital, Yokohama, Japan | 30.22* | 767.6* | 55.8 | 13.2 | 51.2 | 10.7 | 65 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Adams, Panama | 29.94 | 760.5 | 84 | 28.9 | 84 | 28.9 | 87 | SSE | ..... | ..... | 0–1 | ..... | 2 | ..... | SE | ..... | ..... | Smooth | ..... | Fair..... | |
| Alliance, Villefranche, France | 29.86‡ | 758.4‡ | ..... | ..... | 62 | 16.7 | 66 | SE | ..... | ..... | 1 | ..... | 5 | ..... | E | ..... | ..... | None | ..... | Pleasant..... | |
| Ashuelot. Shanghai, China | 30.10 | 764.5 | 58 | 14.4 | 54 | 12.2 | 87 | SE | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Cloudy..... | |
| Canonicus, New Orleans, La | 29.87 | 758.7 | 54 | 12.2 | 69 | 20.6 | 95 | NE | ..... | ..... | 2 | ..... | 1 | ..... | W | ..... | ..... | ..... | ..... | Clear..... | |
| Colorado, New York, N. Y. | 30.20‡ | 767.1‡ | ..... | ..... | 44 | 6.7 | 92 | NNE | 1 | 0.4 | ..... | ..... | 10 | ..... | NE | 0 | 0 | ..... | ..... | Threatening | |
| Constellation, N. 46° 13′ W. 21° 16′ | 29.97‡ | 761.2‡ | ..... | ..... | 56 | 13.3 | 94 | SE | ..... | ..... | 5 | ..... | 10 | ..... | SE | ..... | ..... | Long smooth | SE | Sprinkling... | |
| Constitution, Havre, France | 29.83‡ | 757.7‡ | ..... | ..... | 53 | 11.7 | 86 | WSW | ..... | ..... | 3 | ..... | 9 | ..... | W | ..... | ..... | ..... | ..... | Showery..... | |
| Despatch, Constantinople, Turkey | 30.00‡ | 762.0‡ | ..... | ..... | 60 | 15.6 | 55 | SE | ..... | ..... | 0–1 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Clear..... | |
| Franklin, Norfolk, Va | 30.25 | 768.3 | 60 | 15.6 | 51 | 10.6 | 86 | NNE | 11 | 4.9 | ..... | ..... | 10 | ..... | NE | 0.51 | 13 .0 | ..... | ..... | Overcast..... | |
| Gettysburg Valetta, Malta | 30.02‡ | 762.5‡ | ..... | ..... | 64 | 17.8 | ?? | NNW | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Drizzling.... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.08 | 764.0 | 75 | 23.9 | 74 | 23.3 | 81 | NE | ..... | ..... | 5 | ..... | 2 | ..... | NE | ..... | ..... | Ground | NW | Clear..... | |
| Hartford, Montevideo, Uraguay | 29.98 | 761.5 | 63 | 17.2 | 64 | 17.8 | 58 | SSW | 9 | 4.0 | ..... | ..... | 0 | ..... | ..... | 0.17 | 4.3 | Smooth | ..... | Clear..... | |
| Marion, Smyrna, Turkey | 29.97 | 761 2 | 66 | 18.9 | 66 | 18.9 | 68 | WSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Michigan, Erie, Pa | 29.68 | 753.9 | 61 | 16.1 | 50 | 10.0 | 58 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Monocacy. Shanghai, China | 30.12‡ | 765.0‡ | ..... | ..... | 54 | 12.2 | 93 | SE | ..... | ..... | 3 | ..... | 10 | ..... | SE | ..... | ..... | ..... | ..... | Cloudy..... | |
| New Hampshire, Port Royal, S. C. | 30.20† | 767.1† | ..... | ..... | 62 | 16.7 | 77 | NE | 13 | 5.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Omaha, N. 34° 25′ W. 74° 30′ | 30.03* | 762.7* | 69 | 20.6 | 68 | 20.0 | 74 | NE | 5 | 2.2 | ..... | ..... | 4 | ..... | NE | 1.2 | 30.0 | Rough | NE | Bright..... | |
| Onward, Callao, Peru | 30.01† | 762.2† | ..... | ..... | 70 | 21.1 | 90 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, N. 29° 8′, W. 86° 23′ | 29.96‡ | 761.0‡ | ..... | ..... | 72 | 22.2 | 95 | E | ..... | ..... | 7 | ..... | 5 | ..... | SE | ..... | ..... | Rough | E | Threatening | |
| Palos, Shanghai, China | 30.03* | 762.7* | 60 | 15.6 | 55 | 12.8 | 74 | SE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Rainy..... | |
| Pensacola, N. 35° 53′, W. 153° 15′ | 30.45 | 773.4 | 60 | 15.6 | 56 | 13.3 | 81 | NW | 16 | 7.2 | ..... | ..... | 10 | ..... | ..... | 0.06 | 1.5 | Smooth | NW | Cloudy ..... | |
| Plymouth. Norfolk, Va | 30.15‡ | 765.8‡ | ..... | ..... | 50 | 10.0 | 93 | NE | ..... | ..... | 3 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Powhatan, Norfolk, Va | 30.14‡ | 765.5‡ | ..... | ..... | 51 | 10.6 | ?? | NE | 6.0 | 2.7 | ..... | ..... | 10 | ..... | ..... | 0.40 | 10.2 | ..... | ..... | Cloudy..... | |
| Ranger. Amoy, China | 30.22* | 767.6* | ..... | ..... | 66 | 18.9 | 89 | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Smooth | ..... | D. clouds..... | |
| Rio Bravo. Brownsville, Texas | 29.65 | 753.1 | 72 | 22.2 | 71 | 21.7 | 100 | SE | ..... | ..... | 1 | ..... | 8 | ..... | NW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Santee, Annapolis, Md | 30.16‡ | 766.1‡ | ..... | ..... | 44 | 6.7 | 84 | NE | ..... | ..... | 2 | ..... | 10 | ..... | NE | 0 | 0 | ..... | ..... | Cloudy..... | |
| Saratoga, Washington, D. C. | 30.13 | 765.3 | 56 | 13.3 | 49 | 9.4 | 93 | NE | ..... | ..... | 7 | ..... | 2 | ..... | S&W | 0 | 0 | ..... | ..... | Cloudy..... | |
| St. Louis, League Island, Pa | 30.12 | 765.0 | 60 | 15.6 | 49 | 9.4 | 78 | ENE | 8 | 3.6 | ..... | ..... | 10 | ..... | ENE | 0.02 | 0.5 | ..... | ..... | Threatening | |
| Supply, Havre, France | 29.91 | 759.7 | 55 | 12.8 | 52 | 11.1 | 74 | WSW | ..... | ..... | 3–4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Raining..... | |
| Swatara, N. 17° 51′, W. 82° 17′ | 29.87‡ | 758.7‡ | ..... | ..... | 82 | 27.8 | 83 | ESE | ..... | ..... | 3–4 | ..... | 2 | ..... | S&E | ..... | ..... | Smooth | ..... | Clear..... | |
| Tennessee, N. 15° 38′, E. 41° | 29.81* | 757.9* | 87 | 30.6 | 86 | 30.0 | 72 | NNW | 2 | 0.9 | ... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | D. clouds..... | |
| Trenton, Villefranche, France | 29.86‡ | 758.4‡ | ..... | ..... | 68 | 20.0 | 79 | E | ..... | ..... | 1–2 | ..... | 8 | ..... | W | 0 | 0 | ..... | ..... | Fair..... | |
| Tuscarora, N. 16° 42′, W. 99° 39′ | 29.66 | 753.4 | 75 | 23.9 | 77 | 25.0 | 86 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | Calm | 0 | 0 | Smooth | ..... | Cloudy..... | |
| Vandalia, Villefranche, France | 29.91‡ | 759.7‡ | ..... | ..... | 62 | 16.7 | 72 | ESE | ..... | ..... | 2 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Clear ..... | |
| Wabash, Boston, Mass | 30.21‡ | 767.3‡ | ..... | ..... | 48 | 8.9 | 79 | SSE | 5 | 2.2 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Foggy ..... | |
| Wyoming, N. 46° 38′, W. 29° 41′ | 29.69*‡ | 751.8*‡ | ..... | ..... | 58 | 14.4 | 94 | SSW | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | Mod'ate | SW | Squally..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Panama, Gulf of Georgia, B. C. | | | 30.02* | 762.5* | | | | WNW | | | 2 | | 2 | | NW | | | | Capt. Cobb. |
| S. S. City of Peking, N. 37° 54′, E. 165° 22′ | | | 29.94† | 760.5† | 45 | 7.2 | 92 | NNW | 39.0 | 17.4 | | | 9 | | NNW | Mod'ate | SW | Misty | Capt. Seabury. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Tokio, N. 34° 40′, W. 162° 46′ | | | | | 56 | 13.3 | | N | | | 5 | | 10 | | NNE | Long | NW | Overcast | Capt. Dearborn. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. Costa Rica | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, N. 44° 03′, W. 46° 09′ | | | 29.69† | 754.1† | 45 | 7.2 | ?? | W | | | 7 | | 10k | | W | High | W | Squally | Capt. W. H. Thompson. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Aneroid.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic | | | | | | | | | | | | | | | | | | | Capt. John Metcalf. |
| S. S. Gaelic, N. 30° 20′, E. 131° 25′ | | | 30.04† | 763.0† | 70 | 21.1 | ?? | NE | | | 4 | | km | | Var. | Smooth | | Squally | Capt. W. H. Kidley |
| S. S. Oceanic, N. 29° 49′, E. 127° 34′ | | | 29.83 | 757.7 | 68 | 20.0 | 79 | ESE | | | 6 | | 8 | | SE | Mod'ate | ESE | D. clouds | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | Character | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, Philadelphia, Pa | | | 30.19* | 766.8* | 47 | 8.3 | 92 | NNE | | | 2 | | 7 | | NE | | | Cloudy | Captain Sargent. |
| S. S. Ohio, Philadelphia, Pa | | | 30.22 | 767.6 | 49 | 9.4 | 85 | NE | | | 1 | | 10 | | Calm | | | Dull | Captain Morrison. |
| S. S. Pennsylvania, Liverpool | | | 29.66† | 753.4† | 63 | 17.2 | 94 | S | | | 2 | | 9 | | SW | | | Cloudy | Captain Harris. |

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for elevation; instrumental error not known. †Corrected for temperature and elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |

**ALLAN LINE MARINE SERIES.**

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Scandinavian | | | | | | | | | | | | | | | | | | | |

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES.** (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Tenants Harbor | | | 30.12 | 765.0 | 46 | 7.8 | 77 | WSW | 7 | 3.1 | | | 8k | | W | | | Cloudy | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 30.22 | 767.6 | 7 | —13.9 | 93 | W | 30.8 | 13.8 | | 0 | 0 | | | | | Clear | O. T. Sherman. |

Note.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Ass't.) Chief Signal Officer, U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 18, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.15 | 765.7 | 64.9 | 18.3 | 85 | NE | ..... | ..... | 5 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair..... | Dr. Ollive. |
| Nemours | ..... | ..... | 30.11 | 764.7 | 74.1 | 23.4 | 43 | N | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair..... | Michel. |
| Algiers | ..... | ..... | 30.05 | 763.2 | 74.5 | 23.6 | 36 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Clear..... | Towiliere. |
| La Calle | ..... | ..... | 30.05 | 763.3 | 67.3 | 19.6 | 67 | NNW | ..... | ..... | 5 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy..... | Boulangeot. |
| Tunis | ..... | ..... | 30.10 | 764.4 | 73.8 | 23.2 | 44 | NNW | ..... | ..... | 5 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy..... | Jacques. |
| Sfax | ..... | ..... | 30.02 | 762.5 | 69.8 | 21.0 | ..... | E | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy..... | Gau. |
| Saida | ..... | ..... | 30.17 | 766.2 | 77.2 | 25.1 | ..... | WSW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy..... | Herbin. |
| Tebessa | ..... | ..... | 30.08 | 764.0 | ..... | ..... | ..... | Calm | ..... | ..... | 0 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair..... | Watrin. |
| Geriville | ..... | ..... | 30.24 | 768.1 | 66.6 | 19.2 | 79 | ENE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | Fair..... | Lemaillot. |
| Laghouat | ..... | ..... | 30.22 | 767.6 | 76.3 | 24.6 | 24 | Calm | ..... | ..... | 0 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair.... | Bertrand. |
| Biskra | ..... | ..... | 30.11 | 764.8 | 77.0 | 25.0 | 38 | SE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair..... | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.23 | 742.4 | 29.78 | 756.3 | 55.6 | 13.1 | 81 | NE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | Inap. | Inap. | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 28.97 | 735.7 | 29.72 | 754.9 | 57.9 | 14.4 | 81 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.012 | 0.3 | ..... | Dr. Wierzbiski. |
| Eperies | 28.82 | 732.1 | 29.68 | 753.8 | 61.7 | 16.5 | 61 | S | ..... | ..... | 3 | ..... | 10k;s | ..... | ..... | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.54 | 724.8 | 29.76 | 756.0 | 59.0 | 15.0 | 61 | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.051 | 1.30 | ..... | Andreas Rospini. |
| Hermannstadt | 28.27 | 718.0 | 29.64 | 752.9 | 66.9 | 19.4 | 40 | E | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0.079 | 2.00 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.44 | 722.3 | 29.73 | 755.2 | 51.1 | 10.6 | 85 | WSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.413 | 10.5 | ..... | Prof. C. Wagner |
| Lemberg | 28.72 | 729.4 | 29.67 | 753.7 | 63.7 | 17.6 | 67 | SW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0.031 | 0.8 | ..... | Dr. T. Stanecki. |
| Pola | 29.69 | 754 1 | 29.80 | 756.9 | 59.9 | 15.5 | 75 | W | ..... | ..... | 1 | ..... | 9ck;n | ..... | ..... | 0.012 | 0.3 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.30 | 744.1 | 29.75 | 755.6 | 64.8 | 18.2 | 57 | SE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.44 | 747.8 | 29.71 | 754.7 | 63.7 | 17.6 | 65 | S | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Karl Stancel. |
| Trieste | 29.72 | 755.0 | 29.83 | 757.6 | 59.0 | 15.0 | 87 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.654 | 16.6 | Raining..... | P. Busin. |
| Vienna | 29.00 | 736.7 | 29.71 | 754.7 | 52.9 | 11.6 | 85 | NW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.283 | 7.2 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.35 | 720.0 | 29.85 | 758.2 | 52.3 | 11.3 | 67 | SW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Raining ..... | Prof. M. Passau. |
| Brussels | 29.61 | 752.0 | 29.80 | 757.0 | 56.8 | 13.8 | 64 | WSW | ..... | ..... | 1 | ..... | 10 | ..... | WSW;SW | 0 | 0 | ..... | Royal Observatory. |
| Furnes | 29.81 | 757.2 | 29.84 | 757.8 | 57.6 | 14.2 | 68 | W | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | M. E. de Cae. |
| Maeseyck | 29.69 | 754.1 | 29.82 | 757.3 | 56.3 | 13.5 | 83 | W | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0.035 | 0.9 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4? set. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.67 | 753.6 | 29.77 | 756.1 | 45.4 | 7.4 | ..... | SE | 13 | 5.8 | ..... | ..... | 9 | ..... | ..... | 0.020 | 0.51 | Misty | W. B swell. |
| Ardrossan | 29.67 | 753.6 | 29.69 | 754.1 | 47 | 8.3 | ..... | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.66 | 753.4 | 57.4 | 14.1 | ..... | SE | 14 | 6.3 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | S.Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.72 | 754.9 | 57.3 | 14.1 | ..... | ESE | 13 | 5.8 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 29.62 | 752.3 | 53.8 | 12.1 | ..... | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | J. L. E. Dreyer. |
| Bradford, Yorkshire | 29.36 | 745.7 | 29.75 | 755.6 | 50.8 | 10 4 | ..... | Calm | ..... | ..... | 0 | ..... | 6 | ..... | ..... | 0 | 0 | D. clouds | J. McLandsborough. |
| Bridgetown, (Barbados) | ..... | ..... | 29.93 | 760.2 | 84.0 | 28.9 | ..... | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.77 | 756.1 | 62.5 | 16.9 | ..... | SW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | Hazy | H.Todd. [H.C. |
| Cardington | ..... | ..... | 29.78 | 756.4 | 57.0 | 13.9 | ..... | W | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | John McLaren. |
| Chatham, School M. E. | 29.64 | 752.8 | 29.77 | 756.1 | 56.2 | 13.4 | ..... | W | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Q. M. Serg., Geo. Stuart, R. E. |
| Dartmoor | 28.30 | 718.8 | 29.76 | 755.9 | 50.0 | 10.0 | ..... | SE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | Fine | Alexander Watt. |
| Donaghadee | 29.65 | 753.1 | 29.68 | 753.9 | 56 | 13.3 | ..... | SSE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | J. Mac Gowan. |
| Dover | 29.77 | 756.1 | 29.80 | 756.9 | 52 | 11.1 | ..... | W | ..... | ..... | 3 | ..... | 1 | ..... | ..... | ..... | ..... | ¼ clouded | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.73 | 755.1 | 60.8 | 16.0 | ..... | SW | 1.8 | 0.8 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Blue sky | Thomas Mackereth. |
| Falmouth, Observatory | 29.52 | 749.8 | 29.74 | 755.4 | 50.2 | 10.1 | ..... | ESE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Rain and fog | The Staff. |
| Fort Napier, (Natal) | 27.71 | 703.8 | 29.91 | 759.7 | 78.0 | 25.6 | ..... | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Pvt. G.Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.67 | 753.6 | 29.90 | 759.4 | 87.0 | 30.6 | ..... | W | ..... | ..... | 0 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's College | ..... | ..... | 29.54 | 750.3 | 55.5 | 13.1 | ..... | SSW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.02 | 762.5 | 30.08 | 764.0 | 71.4 | 21.9 | ..... | W | ..... | ..... | 5 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky | Corpl. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.50 | 749.3 | 29.71 | 754.6 | 53.9 | 12.2 | ..... | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | D. G. Maclean. |
| Great Yarmouth | 29.79 | 756.7 | 29.79 | 756.7 | 49 | 9.4 | ..... | E | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | Misty | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.61 | 752.1 | 29.78 | 756.4 | 58.1 | 14.5 | ..... | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | Misty | The Staff, for G. B. Airy. |
| Guernsey | 29.57 | 751.1 | 29.79 | 756.7 | 54 | 12.2 | ..... | ESE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 29.77 | 756.1 | 55 | 12.8 | ..... | E | ..... | ..... | 7 | ..... | 2n | ..... | ..... | 0.21 | 5.3 | Raining | M. P. Moyle. |
| Holyhead | 29.67 | 753.6 | 29.72 | 754.9 | 56 | 13.3 | ..... | SSW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | John Tilston. |
| Jersey | 29.56 | 750.8 | 29.85 | 758.2 | 53.6 | 12.0 | ..... | SE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | J. Fisher. |
| Kew, Observatory | ..... | ..... | 29.78 | 756.4 | 57.9 | 14.4 | ..... | W | 3 | 1.3 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Hazy | The Staff. |
| Kingstown | 29.66 | 753.4 | 29.69 | 754.1 | 53 | 11.7 | ..... | SE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.76 | 755.9 | 55.0 | 12.8 | ..... | SW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | Hazy | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.94 | 760.5 | 30.02 | 762.5 | 65.8 | 18.8 | ..... | NW | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | Sgt. Fred. Travis, A. H. |
| Nairn | 29.59 | 751.6 | 29.68 | 753.9 | 51 | 10.6 | ..... | E | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | Hazy | W. D. Penny. [O. |
| Nassau, (Bahamas) | ..... | ..... | 30.00 | 762.0 | 75.2 | 24 0 | ..... | N | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.57 | 751.1 | 29.76 | 755.9 | 60.0 | 15.6 | ..... | SSE | ..... | ..... | 1 | ..... | 1ck | ..... | SSW | 0.002 | 0.05 | Blue sky | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.23 | 742.4 | 29.74 | 755.4 | 58.1 | 14.5 | ..... | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.77 | 756.1 | 59 | 15.0 | ..... | Calm | ..... | ..... | 0 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky | Mr. Lucas. |
| Plymouth | 29.70 | 754.4 | 29.78 | 756.4 | 52.5 | 11.4 | ..... | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Merrifield. |
| Roche's Point | 29.58 | 751.3 | 29.63 | 752.6 | 52 | 11.1 | ..... | SSE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | ..... | Foggy | W. Kennedy. |
| Saint Ann's Head | 29.56 | 750.8 | 29.72 | 754.9 | 50 | 10.0 | ..... | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Misty | John C. Walker. |
| Sandwick Manse, (Orkneys. | ..... | ..... | 29.72 | 754.9 | 49.2 | 9.6 | ..... | S | 4 | 1.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Foggy | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 29.80 | 756.9 | 67.2 | 19.6 | ..... | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | Blank | Blank | D. clouds | Sergt. W. H. Lyne. |
| Sheffield | 29.49 | 749.0 | 29.77 | 756.1 | 54.1 | 12.3 | ..... | SSE | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0 | 0 | D. clouds | W. F. Cooper. |
| Silloth Rectory | 29.71 | 754.6 | 29.74 | 755.4 | 52.6 | 11.4 | 85 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.040 | 1.02 | Overcast | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.34 | 745.2 | 29.74 | 755.4 | 56.5 | 13.6 | ..... | SW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | Misty | Rev. S. J. Perry. |
| Stornoway, Lewis C., (Hebr.) | ..... | ..... | 29.64 | 752.8 | 50 | 10.0 | ..... | SSE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Clear | John Sutherland. |
| Stratfield Turgiss | 29.55 | 750.6 | 29.76 | 755.9 | 60.3 | 15.7 | ..... | SW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Rev. C. H. Griffith, F. M |
| Thurso | ..... | ..... | 29.68 | 753.9 | 48 | 8.9 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 29.75 | 755.6 | 53 | 11.7 | ..... | SE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 29.52 | 749.8 | 55.9 | 13.3 | ..... | SE | 29 | 13.0 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | Misty | The Staff. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E.J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 30.02 | 762.5 | 68.0 | 20.0 | 64 | S | ..... | ..... | 1 | ..... | 10k | ..... | ..... | 0 | 0 | Cloudy | FrancisAbbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.68 | 753.9 | 29.86 | 758.5 | 81.3 | 27.4 | 67 | SSE | 14.0 | 6.3 | ..... | 0 | 4 | ..... | S | 0.06 | 1.5 | Fine | C. Meldrum. |
| Melbourne, Observatory | 29.92 | 759.9 | 30.01 | 762.2 | 59.2 | 15.1 | 87 | E | 3 | 1.3 | ..... | ..... | 10 | ..... | ..... | 0.66 | 16.8 | Threatening | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m.

| MARINE SERIES. VESSELS. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather | Observer. |
|---|---|---|---|---|
| S. S. Algeria, N. 40° 30', W. 69° 15' | smooth | ..... | Blue sky | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | Capt. C. C. Prehn. |
| S. S. Naid, N. 42° 35' W. 49° 10' | 4 | sw;sw | Overcast | Capt. J. Smith. [R. |
| S. S. Peruvian | ..... | ..... | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | Capt. Alex Simpson. |
| S. S. Yorkshire | ..... | ..... | ..... | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. | | BAROMETER. Reduced to sea-level. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. Direction. | WIND. Velocity. | | WIND. Force. | CLOUDS. Amount. | | CLOUDS. Direction. | | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inches. | Millimeters. | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | Up'er 0—10. | Low'r 0—10. | Upper. From— | Lower. From— | Inches. | Millimeters. | | |
| San José | 26.19 | 665.2 | ..... | ..... | 71.6 | 22 0 | 87 | E | ..... | ..... | 1 | 1clr | 2ks;hz. | ..... | ..... | Inap. | Inap. | ..... | Federico Maison. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.81 | 757.1 | 29.85 | 758.3 | 45.3 | 7.4 | 83 | ESE | .... .. | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Fanöe | 29.77 | 756.2 | 29.79 | 756.7 | 44.4 | 6.9 | 94 | ENE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Godthaab, (Greenland) | 29.78 | 756.5 | 29.83 | 757.6 | 20.1 | — 6.6 | 76 | NNE | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | |
| Stykkisholm, (Iceland) | 29.47 | 748.6 | 29.52 | 749.7 | 33.6 | 0.9 | 85 | E | ..... | ..... | 7 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Thorshavn, (Faröe) | 29.59 | 751.6 | 29.63 | 752.5 | 52.2 | 11.2 | 81 | Calm | ..... | ..... | 0 | ..... | 4 | ..... | ..... | ..... | ..... | ..... | |
| Vestervig | 29.67 | 753.6 | 29.84 | 757.9 | 46.8 | 8.2 | 83 | E | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
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| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.39 | 746.6 | 29.95 | 760.6 | 57.2 | 14 | 80 | SW | ..... | ..... | 1 | ..... | 2 | ..... | SW | 0.071 | 1.8 | Slightly cl'dy | Collignon, Director. |
| Amiens, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bonvarne, Director. |
| Avignon, Normal School | 29.83 | 757.7 | 29.91 | 759.7 | 61.3 | 16.3 | 62 | NNW | ..... | ..... | 1 | ..... | 8 | ..... | WNW | 0 | 0 | Very cloudy | Mr. Giraud, Director |
| Bar-sur-Seine | 29.32 | 744.7 | 29.87 | 758.7 | 54.9 | 12.7 | 61 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.402 | 10.2 | Covered | C. Saillard. |
| Beaumette Obs'y (Angers) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Albert Cheux. |
| Beauvais | ..... | ..... | ..... | ..... | 60.6 | 15.9 | 57 | WNW | ..... | ..... | 1 | ..... | 8 | ..... | WNW | 0.187 | 4.75 | Very cloudy | Normal School. |
| Besançon | 29.02 | 737.2 | 29.91 | 759.6 | 57.6 | 14.2 | 71 | SSW | ..... | ..... | 2 | ..... | 8 | ..... | SW | 0.75 | 19. | Very cloudy | Normal School. |
| Bourg-en-Bresse | 29.09 | 738.8 | 30.00 | 762.1 | 56.7 | 13.7 | 60 | W | ..... | ..... | 2 | ..... | 5n | ..... | NW | 0.142 | 3.6 | Cloudy | Normal School. |
| Bourges, Normal School | 29.34 | 745.2 | 29.88 | 759.0 | 59.0 | 15 | 89 | SW | ..... | ..... | 2 | ..... | 8 | ..... | SW | 0.161 | 4.1 | Very cloudy | A. Wagner, Director. |
| Brest, Naval Observatory | 29.50 | 749.3 | 29.72 | 754.9 | 56.7 | 13.7 | 90 | SW | ..... | ..... | 2 | ..... | 10 | ..... | SW | 0.207 | 5.25 | Raining | The Staff. |
| Carcassonne, Normal School | 29.58 | 751.4 | 30.00 | 761.9 | 61.5 | 16.4 | 77 | W | ..... | ..... | 4 | ..... | 10 | ..... | W | 0.083 | 2.1 | Covered | Vateau, Director. |
| Caen | * | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| Chartres, Normal School | 29.46 | 748.2 | 29.95 | 760.7 | 50.4 | 10.2 | 97 | W | ..... | ..... | 3 | ..... | 2 | ..... | NW | 0 | 0 | ..... | Lequin, Director. |
| Châlons-sur-Marne, N. Sch' | 29.53 | 750.1 | 29.85 | 758.1 | 56.8 | 13.8 | 71 | SW | ..... | ..... | 3 | ..... | 8k | ..... | W | 0 | 0 | Very cloudy | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.57 | 725.6 | 29.93 | 760.1 | 51.3 | 10.7 | 75 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.114 | 2.9 | Covered | Alluard, Director. |
| Commercy, Normal School | 28.99 | 736.3 | 29.87 | 758.6 | 53.6 | 12 | 76 | W | ..... | ..... | 2 | ..... | 5 | ..... | W | 0 | 0 | Cloudy | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.82 | 731.9 | 29.96 | 760.9 | 62.4 | 16.9 | 68 | W | ..... | ..... | 4 | ..... | 10 | ..... | W | 0 | 0 | Covered | M. Kina. |
| Grenoble | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| La Roche-sur-Yon, N. School | 29.70 | 754.4 | 29.92 | 759.9 | 56.8 | 13.8 | 95 | W | ..... | ..... | 2 | ..... | 8 | ..... | W | 0.322 | 8.2 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.56 | 750.8 | 29.86 | 758.5 | 58.3 | 14.6 | 70 | SW | ..... | ..... | 2 | ..... | 2 | ..... | SW | 0.04 | 1. | Slightly cl'dy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.96 | 735.6 | 29.86 | 758.5 | 50.9 | 10.5 | 86 | E | ..... | ..... | 2 | ..... | 8 | ..... | ENE | 0.55 | 14. | Very cloudy | Voudez, Director. |
| Lorient, Naval Observatory | 29.75 | 755.7 | 29 85 | 758.2 | 57.2 | 14.0 | 95 | SW | ..... | ..... | 3 | ..... | 10 | ..... | SW | 0.366 | 9.3 | Covered | T. Carré, Director. |
| Mâcon, Normal School | 29.22 | 742.3 | 29.87 | 758.7 | 54.9 | 12.7 | 74 | NE | ..... | ..... | 2 | ..... | 5 | ..... | SW | 0.016 | 0.4 | Cloudy | M. Marchal, Director. |
| Metz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. A. Schuster, Dir. |
| Mirecourt | 28.84 | 732.5 | 29.88 | 758.9 | 55.0 | 12.8 | 68 | W | ..... | ..... | 2 | ..... | 8 | ..... | W | 0.16 | 4. | Very cloudy | Normal School. |
| Nismes, Normal School | 29.68 | 753.9 | 29.88 | 758.9 | 68.0 | 20 | 72 | S | ..... | ..... | 2 | ..... | 2 | ..... | E | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Orleans, Normal School | 29.46 | 748.2 | 29.83 | 757.7 | 70.7 | 21.5 | 70 | W | ..... | ..... | 2 | ..... | 8 | ..... | W | 0 | 0 | Very cloudy | Bernard, Director. |
| Paris, Observatory | 29.61 | 752.2 | 29.85 | 758.2 | 57.2 | 14.0 | 53 | W | ..... | ..... | 1 | ..... | 10 | ..... | W | 0.088 | 2.24 | Almost cov'd | National Observatory. |
| Privas | 28.89 | 733.7 | 29.94 | 760.5 | 59.0 | 15 | 72 | N | ..... | ..... | 4 | ..... | 5 | ..... | N | 0 | 0 | Cloudy | Normal School |
| Puy de Dome (Summit) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.91 | 759.8 | 29.95 | 760.6 | 57.6 | 14.2 | 69 | W | ..... | ..... | 5 | ..... | 10 | ..... | W | 0.24 | 6. | Raining | Lt. Decante, Director. |
| Rouen, Normal School | 29.76 | 755.8 | 29.84 | 758.0 | 62.6 | 17.0 | 48 | WSW | ..... | ..... | 2 | ..... | 5 | ..... | W | 0.126 | 3.2 | Cloudy | F. Lucard, Director |
| Saint Malo (Port) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. H. Hercouet |
| Tarbes, Normal School | 29.06 | 738.2 | 30.14 | 765.5 | 59.0 | 15 | 72 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | T. Hugues, Director |
| Villefranche | 29.21 | 742.0 | 29.92 | 760.0 | 58.8 | 14.9 | 71 | SE | ..... | ..... | 2 | ..... | 8 | ..... | NW | 0.12 | 3. | Very cloudy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.80 | 757.0 | 29.83 | 757.7 | 82.4 | 28 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchési. |
| Lyons | ..... | ..... | 29.97 | 761.1 | 59.5 | 15.3 | 60 | ..... | ..... | ..... | ..... | ..... | 8 | ..... | ..... | 0.24 | 6. | Rainy | M. Jeys. |
| Marseilles, Observatory | ..... | ..... | 29.92 | 760.0 | 61.3 | 16.3 | 59 | WSW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | The Staff. |
| Mont-Louis | 24.84 | 630 8 | 30.15 | 765.8 | 49.6 | 9.8 | 58 | ESE | 7.4 | 3.33 | ..... | ..... | 5 | ..... | W | 0 | 0 | ..... | Mr. Falguère. |
| Nice | ..... | ..... | 29.80 | 757.0 | 59.2 | 15.1 | 89 | ESE | ..... | ..... | 6 | ..... | 2 | ..... | ..... | 0 | 0 | Clear | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.57 | 751.0 | 29.84 | 758.0 | 57.0 | 13.9 | 55 | W | ..... | ..... | 2 | ..... | 10 | ..... | W | 0.035 | 0.9 | ..... | Marié Davy, Director |
| Perpignan | ..... | ..... | 29.96 | 761.0 | 66.9 | 19.4 | 59 | NW | 18.6 | 8.33 | ..... | ..... | 8 | ..... | W | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.51 | 571.7 | ..... | ..... | 33.8 | 1.0 | ..... | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.445 | 11.3 | Snowy | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.69 | 754.1 | 29.85 | 758.3 | 56.7 | 13.7 | 62 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | E. Renou. |
| Toulouse, Observatory | 29.32 | 744.6 | 30.01 | 763.0 | 59.4 | 15 2 | 78 | W | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0.071 | 1.80 | Raining | The Staff. |
| Tours | 29.68 | 753.9 | 29.88 | 758.9 | 59.0 | 15.0 | 72 | SW | ..... | ..... | 1 | ..... | 10 | ..... | W | 0.402 | 10.2 | ..... | C. Marquet. |
| Versailles, (near Paris) | ..... | ..... | 29.86 | 758.4 | 58.6 | 14.8 | 53 | WNW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.061 | 1.56 | Cloudy | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 29.99 | 761.8 | 30.02 | 762.4 | 57.0 | 13.9 | 81 | NW | 5.8 | 2.6 | ..... | ..... | 10 | ..... | ..... | 1.705 | 43.3 | Covered | Marc Dechevrens, S. J |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7: no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.94 | 735.1 | 29.78 | 756.3 | 58.1 | 14.5 | 64 | SE | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0.028 | 0.7 | Raining..... | Prof. Dr. Hoh. |
| Berlin | 29.63 | 752.6 | 29.80 | 756.9 | 59.9 | 15.5 | 59 | NW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.091 | 2.3 | ..... | Prof. Arndt. |
| Breslau | 29.24 | 742.7 | 29.77 | 756.1 | 52.7 | 11.5 | 100 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.054 | 1.38 | Raining..... | Royal University Obs'y |
| Carlsruhe | 29.41 | 746.9 | 29.83 | 757.6 | 54.3 | 12.4 | 77 | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.079 | 2.0 | Raining..... | Albert Senz. |
| Cassel | 29.24 | 742.8 | 29.85 | 758.1 | 53.4 | 11.9 | 84 | W | ..... | ..... | 5 | ..... | 8 | WNW | ..... | 0 | 0 | ..... | Dr. H. Möhl. |
| Crefeld | 29.63 | 752.5 | 29.79 | 756.6 | 59.5 | 15.3 | 52 | W | ..... | ..... | 3 | ..... | 7k | ..... | ..... | 0 | 0 | ..... | Director Lose. |
| Emden | 29.79 | 756.6 | 29.82 | 757.5 | 53.4 | 11.9 | 85 | NW | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0.055 | 1.4 | ..... | Prof. Prestel. |
| Frankfort on the Main | 29.49 | 749.0 | 29.85 | 758.2 | 58.1 | 14.5 | 52 | WNW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0.165 | 4.2 | ..... | Physical Society. |
| Friedrichshafen | 28.46 | 722.9 | 29.90 | 759.5 | 52.0 | 11.1 | 77 | SSW | ..... | ..... | 2 | ..... | 10 | W | ..... | 0 | 0 | ..... | M. Wilhelm. |
| Hamburg | 29.72 | 754.8 | 29.79 | 756.6 | 56.1 | 13.4 | 75 | W | ..... | ..... | 2 | ..... | 10kS | ..... | ..... | 0.004 | 0.1 | Pleasant.... | Captain F. Hegemann. |
| Kiel | 29.76 | 755.8 | 29.77 | 756.2 | 49.6 | 9.8 | 90 | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.044 | 1.12 | ..... | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.76 | 756.0 | 29.85 | 758.1 | 46.2 | 7.9 | 91 | E | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0.106 | 2.7 | ..... | Prof. E Luther. |
| Köslin | ..... | ..... | 29.76 | 755.9 | 52.3 | 11.3 | ..... | NE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0.287 | 7.3 | ..... | H. Müller. |
| Leipsic, Observatory | 29.39 | 746.5 | 29.80 | 757.0 | 60.1 | 15.6 | 55 | N | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0.004 | 0.1 | ..... | Prof. Bruhns. |
| Memel, Naval School | 29.87 | 758.6 | 29.91 | 759.8 | 51.1 | 10.6 | 55 | ESE | ..... | ..... | 6 | ..... | 1cs | ..... | ..... | ..... | ..... | Squally..... | Reinbrecht von Skalweit. |
| Neufahrwasser | 29.80 | 757.0 | 29.82 | 757.4 | 47.8 | 8.8 | 92 | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.386 | 9.8 | ..... | A. Lothes. |
| Posen | 29.50 | 749.4 | 29.83 | 757.7 | 61.7 | 16.5 | 62 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.598 | 15.2 | ..... | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.32 | 744.7 | 29.86 | 758.5 | 58.1 | 14.5 | 64 | SW | ..... | ..... | 2 | ..... | 9 | W | ..... | 0.165 | 4.20 | Thunder storm. | Dr. Schur. |
| Stuttgart | 28.89 | 733.7 | 29.83 | 757.6 | 51.8 | 11.0 | 81 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.134 | 3.4 | Raining..... | Prof. Schoder. |
| Treves, (Trier) | 29.21 | 741.9 | 29.72 | 755.0 | 60.8 | 16.0 | 50 | SW | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0.018 | 0.45 | Dense fog.... | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.32 | 719.3 | 29.80 | 756.9 | 54.0 | 12.2 | 71 | W | 1 | 0.5 | ..... | ..... | 9ckn | ..... | W | 0.315 | 8.0 | ..... | Dr. Von Bebber. |
| Wustrow, Naval School | 29.83 | 757.6 | 29.87 | 758.6 | 46.2 | 7.9 | 91 | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.134 | 3.4 | ..... | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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| ..... | | | | | | | | | | | | | | | | | | | |
| ..... | | | | | | | | | | | | | | | | | | | |

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.51 | 749.5 | 29.90 | 759.4 | 66.2 | 19.0 | ..... | SW | ..... | ..... | 3.5 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | Dr. J. F. J. Schmidt. |
| ..... | | | | | | | | | | | | | | | | | | | |
| ..... | | | | | | | | | | | | | | | | | | | |
| ..... | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.86 | 758.4 | 29.91 | 759.7 | 85.1 | 29.5 | 65 | SW | 20? | 8.9? | ..... | ..... | 6 | ..... | ..... | 0 | 0 | D. clouds..... | |
| Deesa | 29.42 | 747.2 | 29.87 | 758.8 | 102.5 | 39.2 | 18 | Calm | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | D. clouds..... | |
| Bombay | 29.85 | 758.1 | 29.88 | 759.0 | 84.3 | 29.1 | 80 | WNW | 11 | 4.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | |
| Poona | 27.85 | 707.4 | 29.80 | 756.8 | 93.3 | 34.1 | 40 | W | ..... | ..... | ..... | ..... | 5 | ..... | WSW | 0 | 0 | Dust-whirl.. | |
| Lahore | 29.14 | 740.0 | 29.87 | 758.6 | 90.1 | 32.3 | 35 | W | 2.0 | 0.9 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | Gloomy..... | |
| Belgaum | 27.36 | 695.0 | 29.85 | 758.3 | 85.9 | 29.9 | 64 | W | 15 | 6.7 | ..... | ..... | 5 | W | E | 0 | 0 | D. clouds..... | |
| Bangalore | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Roorkee | 28.98 | 736.1 | 29.87 | 758.8 | 85.4 | 29.7 | 41 | NW | 0.9 | 0.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Agra | 29.32 | 744.7 | 29.87 | 758.7 | 94.6 | 34.8 | 24 | W | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Trichinopoly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nagpur | 28.77 | 730.8 | 29.79 | 756.6 | 95 | 35.0 | 22 | E | 3.9 | 1.7 | ..... | ..... | 4 | ..... | E | 0 | 0 | D. clouds..... | |
| Madras | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Lucknow | 29.47 | 748.6 | 29.84 | 757.8 | 92.7 | 33.7 | 41 | WSW | 2.5 | 1.1 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Blue sky..... | |
| Allahabad | 29.52 | 749.8 | 29.83 | 757.6 | 91.7 | 33.2 | 32 | Calm | 1.1 | 0.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | |
| Patna | 29.68 | 753.8 | 29.86 | 758.4 | 90.1 | 32.3 | 30 | W | 1.6 | 0.7 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Blue sky..... | |
| Hazaribagh | 27.86 | 707.6 | 29.84 | 758.0 | 85.8 | 29.9 | 21 | N | 3.6 | 1.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | |
| Cuttack | 29.78 | 756.4 | 29.86 | 758.4 | 91.1 | 32.8 | 33 | SE | 3.5 | 1.6 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | D. clouds..... | |
| Calcutta (Alipore) | 29.86 | 758.5 | 29.88 | 759.0 | 85.7 | 29.8 | 58 | WNW | 2 | 0.9 | ..... | ..... | 1 | ..... | SW | 0 | 0 | D. clouds..... | |
| Goalpara | 29.50 | 749.3 | 29.89 | 759.1 | 82.8 | 28.2 | 43 | Calm | 2.8 | 1.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | |
| Chittagong | 29.79 | 756.6 | 29.88 | 758.9 | 83.3 | 28.5 | 56 | W | 4.4 | 2.0 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | Misty..... | |
| Sibsagar | 29.58 | 751.2 | 29.91 | 759.8 | 80 | 26.7 | 61 | ENE | 2.5 | 1.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | |
| Rangoon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Jubbulpore | 28.47 | 723.2 | 29.80 | 757.0 | 93.5 | 34.2 | 19 | N | 4.2 | 1.9 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Blue sky..... | |
| ..... | | | | | | | | | | | | | | | | | | | |
| ..... | | | | | | | | | | | | | | | | | | | |
| ..... | | | | | | | | | | | | | | | | | | | |

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.38 | 746.3 | 29.79 | 756.6 | 61.0 | 16.1 | 65 | SW | 1.8 | 0.8 | ..... | ..... | 10 | ..... | ..... | 0.083 | 2.1 | ..... | Prof. Giovanni Codig. |
| Padua | 29.65 | 753.2 | 29.76 | 755.9 | 62.6 | 17.0 | 55 | ENE | 4.3 | 1.9 | ..... | ..... | 6 | WSW | ..... | 0.169 | 4.3 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.58 | 751.3 | 29.77 | 756.1 | 63.1 | 17.3 | 54 | NE | 3.1 | 1.4 | ..... | ..... | 5 | S | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.49 | 723.7 | 29.79 | 756.7 | 64.4 | 18.0 | 44 | SW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0.118 | 3.0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.25 | 743.0 | 29.76 | 755.9 | 65.5 | 18.6 | ..... | WSW | ..... | ..... | 1 | ..... | 9 | W | ..... | 0.020 | 0.5 | ..... | Prof. Schiaparelli. |
| Moncalieri | 28.86 | 733.1 | 29.76 | 756.0 | 65.8 | 18.8 | 42 | ESE | 4.9 | 2.2 | ..... | ..... | 5 | NW | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 27.85 | 707.4 | 29.75 | 755.6 | 64.0 | 17.8 | 40 | ESE | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.61 | 752.1 | 29.85 | 758.1 | 60.8 | 16.0 | 72 | SE | ..... | ..... | 2 | ..... | 4 | WNW | ..... | 0.028 | 0.7 | ..... | Prof. L. Vassallo. |
| Genoa | 29.66 | 753.4 | 29.83 | 757.7 | 63.1 | 17.3 | 63 | S | 5.6 | 2.5 | ..... | ..... | 4 | S | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.47 | 748.4 | 29.78 | 756.3 | 64.6 | 18.1 | 55 | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.031 | 0.8 | ..... | Prof. P. Pigorini. |
| Florence | 29.59 | 751.5 | 29.84 | 758.0 | 67.1 | 19.5 | 48 | W | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Cav. F. Meucci. |
| Leghorn | 29.77 | 756.2 | 29.85 | 758.3 | 63.0 | 17.2 | 63 | WSW | 6.3 | 2.8 | ..... | ..... | 5 | WSW | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 29.78 | 756.3 | 29.82 | 757.5 | 59.4 | 15.2 | 78 | W | 6.3 | 2.8 | ..... | ..... | 9 | W | ..... | 0.055 | 1.4 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.30 | 718.7 | 29.85 | 758.1 | 59.0 | 15.0 | 60 | SW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0.051 | 1.3 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.76 | 756.0 | 29.87 | 758.8 | 67.6 | 19.8 | 57 | WSW | ..... | ..... | 2 | ..... | 3 | NW | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.70 | 754.3 | 29.87 | 758.7 | 69.3 | 20.7 | 47 | WSW | 0.7 | 0.3 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrar |
| Naples, O. U. | 29.71 | 754.5 | 29.91 | 759.6 | 68.0 | 20.0 | 57 | WSW | ..... | ..... | 4 | ..... | 6 | NW | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 57.2 | 14.0 | 55 | WSW | 7.4 | 3.3 | ..... | ..... | 9 | W | ..... | 0.031 | 0.8 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.79 | 756.7 | 29.98 | 761.5 | 69.8 | 21.0 | 54 | NW | ..... | ..... | 4 | ..... | 3 | NW | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.08 | 738.6 | 29.96 | 761.0 | 55.4 | 13.0 | 73 | NE | 11.9 | 5.3 | ..... | ..... | 10 | ..... | ..... | 0.839 | 21.3 | ..... | Prof. F. D. Conti. |
| Palermo | 29.70 | 754.3 | 29.95 | 760.7 | 62.8 | 17.1 | 50 | W | 15.4 | 6.9 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.84 | 757.8 | 29.91 | 759.7 | 70.3 | 21.3 | 64 | E | ..... | ..... | 2 | ..... | 5 | WSW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.36 | 745.8 | 29.92 | 759.9 | 62.6 | 17.0 | 66 | ESE | 5.6 | 2.5 | ..... | ..... | 4 | SE | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nagasaki | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Tokei (Yeddo) | 30.20 | 767.1 | 30.27 | 768.8 | 55.9 | 13.3 | 80 | S | 5.4 | 2.4 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy..... | The Observatory. |
| Tokei (Yeddo) University | 30.14 | 765.5 | 30.26 | 768.5 | 56 | 13.3 | 84 | S | 4 | 1.8 | ..... | 4cs | ..... | ..... | ..... | 0 | 0 | Fair..... | Prof. P. V. Veeder. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 67.3 | 19.6 | 23 | N | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy... | L. Castillo, A. E. |
| Guadalajara | 24.95 | 633.7 | 29.96 | 761.2 | 49.1 | 9.5 | 56 | SW | 0.9 | 0.4 | ..... | 0 | 1 | ..... | SW | 0 | 0 | Clear..... | Prof. L. Perez. |
| Guanajuato | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 64.4 | 18.0 | 33 | N | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy..... | Prof. M. Leal. |
| Mexico | 23.03 | 584.9 | 30.05 | 763.3 | 54.9 | 12.7 | 40 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy..... | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 57.7 | 14.3 | 42 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear... | M. V. de Leon, M. E. |
| Puebla | 23.28 | 591.2 | 29.97 | 761.3 | 49.8 | 9.9 | 57 | N | 2.2 | 1.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy... | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 29.78 | 756.5 | 29.79 | 756 8 | 75.2 | 24.0 | 77 | S | 5.1 | 2.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy... | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 29.73 | 755.1 | 29.76 | 755.8 | 74.3 | 23.5 | 78 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 59.0 | 15.0 | 33 | S | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.29 | 591.7 | 30.04 | 762.9 | 49.6 | 9.8 | 44 | E | 0.2 | 0.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy... | P. Spina. [M.M. D. D |
| Morelia | 23.96 | 608.5 | ..... | ..... | 55.4 | 13.0 | 71 | SW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy... | M. Tena, F. L. Param. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft. San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.82 | 757.4 | 29.82 | 757.4 | 55.0 | 12.8 | ..... | W | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0.020 | 0.5 | ..... | |
| Groningen | 29.76 | 755.8 | 29.81 | 757.2 | 52.7 | 11.5 | ..... | NNE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.161 | 4.1 | ..... | |
| Helder | 29.80 | 756 8 | 29.80 | 756.8 | 50.4 | 10.2 | ..... | SW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 29.78 | 756.5 | 29.78 | 756 5 | 59.9 | 15.5 | 68 | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.76 | 756.0 | 29.81 | 757.2 | 57.9 | 14.4 | 61 | WSW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy..... | H. v d Brink. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.80 | 756.8 | 29.85 | 758.2 | 55.8 | 13.2 | 60 | S | 12 1 | 5.4 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... |
| Brönö | 29.69 | 754.1 | 29.73 | 755.1 | 35.2 | 1.8 | 85 | S | 9 | 4 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... |
| Christiania | 29.75 | 755.6 | 29.89 | 759.3 | 55.9 | 13.3 | 39 | SSW | 11 | 5 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... |
| Tromsö | 29.58 | 751.4 | 29.63 | 752.5 | 34.2 | 1.2 | 78 | SE | 11 | 5 | ..... | ..... | 8 | ..... | ..... | 0.157 | 4.0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.78 | 756.3 | 29.97 | 761.2 | 63.0 | 17.2 | 88 | W | 11.9 | 5.3 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.10 | 739.2 | 30.13 | 765.4 | 59.0 | 15.0 | 84 | NW | 12.5 | 5.6 | ..... | ..... | 10 | WNW | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.16 | 766.1 | 30.25 | 768.3 | 67.8 | 19.9 | 60 | WSW | 3.8 | 1.7 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.80 | 756.9 | 30.16 | 766.0 | 60.6 | 15.9 | 86 | WSW | 15.0 | 6.7 | ..... | ..... | 10 | ..... | ..... | 0.028 | 0.7 | Light rain | The Staff. |
| Ponta Delgada, (Azores) | 30.00 | 761.9 | 30.07 | 763.7 | 64.4 | 18.0 | 86 | SW | 23.0 | 10.3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.92 | 760.0 | 29.93 | 760.2 | 81.5 | 27.5 | ..... | SW | ..... | ..... | 2 | ..... | 9 | ..... | SW | 1 | ..... | D. clouds | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | | A. J. de Mattos, Com'd't. |
| Rio Douro, S. 25° 05′, E. 32° 37′ | ..... | ..... | 30.14 | 765.5 | 76.1 | 24.5 | ..... | ESE | ..... | ..... | 5 | ..... | 3 | ..... | ESE | 5 | ESE | D. clouds | J. T. d'Oliveria, Com'd't. |
| Sado, Porto Praya, Cape Verde Islands | 30.04* | 763.0* | 30.05* | 763.3* | 78.4 | 25.8 | ..... | NNE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 3 | N | Blue sky | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.74 | 755.4 | 29.75 | 755.6 | ..... | ..... | ..... | WNW | ..... | ..... | 2 | ..... | 6 | ..... | WNW | 1 | ..... | Raining | F. Texeira da Silva, Com'd't. |
| Tejo, N. 22° 10′ E. 113° 32′ | ..... | ..... | 29.95 | 760.8 | 77.9 | 25.5 | ..... | ESE | ..... | ..... | 2 | ..... | 9n;kn | ..... | ESE | 1 | ESE | ..... | F. J. Ferreina,dos Amas,Com' |

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.28 | 743.7 | 29.69 | 754.0 | 66.7 | 19.3 | 61 | E | 7 | 3 | ..... | ..... | 9ks;k | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.52 | 749.7 | 29.94 | 760.4 | 47.3 | 8.5 | 77 | E | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy clouds | Astronomical Obs. |
| Dorpat | 29.87 | 758.7 | 30.12 | 765.1 | 37.9 | 3.3 | 46 | ENE | 7 | 3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.10 | 764.4 | 30.11 | 764.8 | 35.8 | 2.1 | 48 | WNW | 7 | 3 | ..... | ..... | 2k | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.68 | 753.8 | 30.01 | 762.3 | 33.6 | 0.9 | 96 | SE | 7 | 3 | ..... | ..... | 8 [n | ..... | ..... | ..... | ..... | ..... | Ch. Forsten. |
| Kieff | 29.13 | 740.0 | 29.75 | 755.6 | 65.3 | 18.5 | 52 | SE | 7 | 3 | ..... | ..... | 8k;ks;c | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.80 | 756.9 | 29.87 | 758.7 | 67.3 | 19.6 | 47 | SSW | 4 | 2 | ..... | ..... | 2k | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.93 | 760.3 | 29.95 | 760.8 | 54.7 | 12.6 | 81 | SSE | 9 | 4 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.47 | 748.4 | 30.03 | 762.7 | 37.4 | 3.0 | 41 | NNW | 13 | 6 | ..... | ..... | 4ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.55 | 750.6 | 29.76 | 755.8 | 54.3 | 12.4 | 89 | WNW | 9 | 4 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Meteorological Obs. |
| Archangel | 29.94 | 760.5 | 29.96 | 761.0 | 20.8 | — 6.2 | 76 | N | 13 | 6 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.53 | 724.6 | 29.95 | 760.6 | 53.6 | 12.0 | 44 | NW | 45 | 20 | ..... | ..... | 5k | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 29.91 | 759.7 | 29.83 | 757.6 | 57.7 | 14.3 | 33 | NNW | 7 | 3 | ..... | ..... | 10s;n | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Krotkowo* | 29.18 | 741.2 | 29.63 | 752.7 | 62.8 | 17.1 | 37 | SW | 16 | 7 | ..... | ..... | 2k | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.38 | 746.3 | 29.66 | 753.3 | 38.7 | 3.7 | 97 | NW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.71 | 729.3 | 29.63 | 752.7 | 57.2 | 14.0 | 35 | SW | 22 | 10 | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.47 | 748.6 | 29.71 | 754.5 | 54.7 | 12.6 | 74 | WSW | 22 | 10 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.24 | 717.2 | 29.90 | 759.4 | 65.8 | 18.8 | 68 | NNW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy clouds | Michelson. |
| Barnaul | 29.69 | 754.0 | 30.21 | 767.4 | 46.8 | 8.2 | 38 | E | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.91 | 759.6 | 30.24 | 768.2 | 34.3 | 1.3 | 64 | SSW | 4 | 2 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 29.75 | 755.6 | 29.89 | 759.2 | 51.1 | 10.6 | 85 | Calm | 0 | 0 | ..... | ..... | 8n | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.74 | 704.5 | 29.82 | 757.5 | 37.6 | 3.1 | 52 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.92 | 759.9 | 30.01 | 762.3 | 40.8 | 4.9 | 98 | SSE | 7 | 3 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Foggy | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 31.1 | — 0.5 | 71 | E | 2 | 1 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 469 meters, or 1,541.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 302 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.87 | 758.6 | 29.97 | 761.2 | 62.6 | 17 | 55 | SSW | 2.8 | 1.25 | ..... | 2ck | 1k | WSW | ..... | 0 | 0 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.97 | 761.3 | 30.03 | 762.7 | 70.9 | 21.6 | 66 | NW | 2.0 | 0.89 | ..... | 9 | ..... | ..... | ..... | 0.047 | 1.2 | Almost cov. | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.08 | 687.9 | ..... | ..... | 64.4 | 18.0 | 71 | SW | 11.5 | 5.26 | ..... | 8 | ..... | ..... | ..... | 0 | 0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.83 | 706.9 | 29.99 | 761.8 | 71.2 | 21.8 | 42 | W | 8.9 | 4.00 | ..... | 2 | 6 | W | ..... | 0 | 0 | ..... | The Staff. |
| Murcia, Met. Obs'y | 29.88 | 759.0 | 30.02 | 762.6 | 84.2 | 29.0 | 38 | NNE | 2.7 | 1.19 | ..... | ..... | 4 | ..... | ..... | Inap. | Inap. | Misty | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.10 | 739.2 | 30.00 | 761.9 | 57.2 | 14.0 | 92 | SW | 15.8 | 7.08 | ..... | ..... | 10 | ..... | ..... | 0.232 | 5.9 | Rainy | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.92 | 759.8 | 29.98 | 761.5 | 78.2 | 25.7 | 74 | E | 7.6 | 3.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J. |
| San Fernando, Naval Obs'y | 30.05 | 763.3 | 30.15 | 765.8 | 70.2 | 21.2 | 55 | WNW | 14.8 | 6.6 | ..... | 3 | 4 | W | W | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.86 | 758.4 | 29.95 | 760.7 | 82.4 | 28.0 | 72 | SE | 5.1 | 2.27 | ..... | 6k | 2k | SE | SE | 0 | 0 | Cloudy | Leonardo de Tejeda, Chief of Engineers. |

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.



Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATION. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.91 | 759.8 | 29.95 | 760.8 | 32.4 | 0.2 | ..... | SW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.83 | 757.7 | 29.88 | 759.0 | 36.2 | 1.8 | 85 | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.020 | 0.5 | ..... | |
| Hernosand | 29.81 | 757.1 | 29.86 | 758.4 | 43.2 | 6 2 | 62 | S | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.83 | 757.6 | 30.00 | 762.1 | 42.8 | 6.0 | 47 | SE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.89 | 759.3 | 29.95 | 760.8 | 44.2 | 6.8 | 71 | SE | ..... | ..... | 7 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.91 | 759.8 | 29.99 | 761.7 | 46.8 | 8.2 | 41 | S | 14.8 | 6.6 | ..... | ..... | 1 | WNW | S | 0 | 0 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.50 | 723.9 | 29.03 | 760.2 | 53.2 | 11.8 | 64 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.094 | 2.4 | Raining | The Observatory. |
| Zurich | 28.28 | 718.2 | 29.05 | 760.6 | 45.1 | 7.3 | 94 | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.331 | 8.4 | Covered | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —0.4 mm.; Thermometer, —0.5 cent.; Relative Humidity, +7 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.86 | 758.4 | 69.3 | 20.7 | 34 | S | 2 | 1.0 | ..... | ..... | 8 | ..... | ..... | 0.472 | 12.0 | Raining | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stéfanidès. |
| Valona | ..... | ..... | 29.92 | 760.0 | 66.6 | 19.2 | ..... | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.94 | 24. | Thunder-storm. | A. Bertrand. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.97 | 761.2 | 30.08 | 764.1 | 71.1 | 21.7 | 65 | SW | ..... | ..... | 3 | ..... | 2c;k | ..... | SW | 0 | 0 | D. clouds | Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.22 | 767.6 | 30.28 | 769.1 | 33.2 | 0.7 | 86 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | ..... | ..... | Clear | Hon. J. Ferguson. |
| Brockville, Ontario | 29.92 | 760.0 | 30.23 | 767.8 | 55 | 12.8 | ..... | Calm | 0 | 0 | ..... | 2c | 2s | W | Calm | 0 | 0 | Fair | W. R. Bigg. |
| *Chatham, N B | 30.26 | 768.6 | 30.33 | 770.4 | 32 | 0.0 | 84 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | G. A. Blair. |
| Charlottetown, P. E. Island | 30.29 | 769.4 | 30.34 | 770.6 | 33 | 0.6 | 79 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | H. J. Cundall, C. E. |
| Cornwall, Ontario | 30.02 | 762.5 | 30.21 | 767.3 | 48.8 | 9.3 | 86 | E | ..... | ..... | 1 | 5cs | 0 | ..... | ..... | 0 | 0 | Fair | James Smith, M. A. |
| Dalhousie, N. B | 30.27 | 768.8 | 30.30 | 769.6 | 33.3 | 0.7 | 86 | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | Clear | H. A. Johnson. |
| Esquimault, B. C | 29.68 | 753.9 | 29.73 | 755.1 | 50.3 | 10.2 | 72 | SE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Overcast | W. H. Bevis. |
| *Father Point, Quebec | 30.20 | 767.1 | 30.23 | 767.8 | 37 | 2.8 | 76 | SW | 9 | 4.0 | ..... | 5k | 8s | Calm | NW | 0 | 0 | Cloudy | J. McWilliams. |
| Fredericton, N. B | 30.28 | 769.1 | 30.35 | 770.9 | 38.1 | 3 4 | 69 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. Harrison. |
| *Fort Garry Manitoba | 28.93 | 734.8 | 29.74 | 755.4 | 48 | 8.9 | 92 | E | 16 | 7.2 | ..... | 6k | 6ks | E | E | 0 | 0 | Cloudy | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 29.00 | 736.6 | 30.10 | 764.5 | 53 | 11.7 | 67 | E | ..... | ..... | 1 | 2cs | 0 | W | ..... | 0 | 0 | Clear | James Grant. |
| *Halifax, N. S | 30.17 | 766.3 | 30.31 | 769.9 | 36 | 2.2 | 86 | SE | 2 | 0.9 | ..... | ..... | 6ks | ..... | SE | 0 | 0 | Fair | F. Allison, M. A. |
| Hamilton, Ontario | 29.84 | 757.9 | 30.21 | 767.3 | 40 7 | 8.2 | 80 | NE | ..... | ..... | 1 | 0 | ..... | ..... | ..... | 0 | 0 | Clear | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.22 | 742.2 | 29.24 | 742.7 | 33 | 0.6 | 70 | NW | ..... | ..... | ..... | 0 | 2ks | ..... | ..... | 0 | 0 | Fine | E. Weedon. |
| *Kingston, Ontario | 29.90 | 759.4 | 30.24 | 768.1 | 48 | 8.9 | 70 | N | 1 | 0.4 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.34 | 770.6 | 30.38 | 771.6 | 34.2 | 1.2 | ..... | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | C. H. Rigby. |
| *Montreal, Quebec | 30.03 | 762.7 | 30.23 | 767.8 | 49 | 9.4 | 87 | S | 4 | 1.8 | ..... | 8c | 2s | ..... | ..... | Inap. | Inap. | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.47 | 748.5 | 30.17 | 766.3 | 50 | 10.0 | 65 | E | 18 | 5.8 | ..... | 2c | 0 | W | ..... | 0 | 0 | Clear | Rev. R. Mosley. |
| Peterboro, Ontario | 29.46 | 748.0 | 30.20 | 767.1 | 50.9 | 10.5 | 78 | Calm | ..... | ..... | ..... | 0 | 2s | ..... | ..... | 0 | 0 | Fair | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.46 | 748.3 | 30.16 | 766.1 | 50 | 10.0 | 79 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | H. Morgan. |
| Port Hastings, N. S | 30.19 | 766.8 | 30.24 | 768.1 | 24.9 | 3.9 | ..... | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.47 | 748.5 | 30.11 | 764.8 | 52 | 11.1 | 67 | E | 21 | 9.4 | ..... | 2k | 0 | W | ..... | 0 | 0 | Clear | M. Payne. |
| *Quebec, Quebec | 29.93 | 760.2 | 30.26 | 768.6 | 40 | 4.4 | 82 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.73 | 755.1 | 30.20 | 767.1 | 42 | 5.6 | 78 | Calm | 0 | 0 | ..... | 2k | 0 | NW | ..... | 0 | 0 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 30.25 | 768.3 | 30.30 | 769.6 | 40 | 4.4 | 68 | S | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Dr. Gove. |
| St. John, N. B | 30.17 | 766.3 | 30.34 | 770.6 | 33 | 0.6 | 80 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Fine | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.40 | 746.7 | 30.11 | 764.8 | 54 | 12.2 | 63 | SE | 9 | 4.0 | ..... | 2cs | 0 | ..... | ..... | 0 | 0 | Fair | K. Stewart. |
| Stayner, Ontario | 29.34 | 745.2 | 30.12 | 765.0 | 54 | 12.2 | 61 | SE | 10 | 4.5 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | R. J. Cole. |
| Stratford, Ontario | 28.84 | 732.5 | 30.13 | 765.3 | 48.6 | 9.2 | 73 | SE | 7 | 3.1 | ..... | 1cs | 0 | ..... | ..... | 0 | 0 | Clear | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.33 | 770.4 | 30.36 | 771.1 | 39 | 3.9 | 61 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | T. C. Hill. |
| *Toronto, Ontario | 29.82 | 757.4 | 30.20 | 767.1 | 48 | 8.9 | 67 | E | 1 | 0.4 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Fair | Magnetic Observatory |
| Windsor, N. S | 30.19 | 766.8 | 30.28 | 769.1 | 34.5 | 1.4 | 84 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 34.5 | 1.4 | 84 | N | ..... | ..... | ..... | 5k | 6s | ..... | ..... | 0.03 | 0.8 | Cloudy | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,017 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0–10. | CLOUDS. Amount. Up'er 0–10 | CLOUDS. Amount. Low'r 0–10 | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 30.05 | 763.3 | 30.28 | 769.1 | 52 | 11.1 | 73 | S | 6 | 2.7 | ..... | 1c | 5s | Calm | S | 0.01 | 0.3 | Fair | |
| Alpena, Michigan | 29.41 | 747.0 | 30.06 | 763.5 | 46 | 7.8 | 76 | E | 6 | 2.7 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| Atlantic City, New Jersey | 30.27 | 768.8 | 30.29 | 769.4 | 49 | 9.4 | 77 | NE | 12 | 5.4 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Augusta, Georgia | 29.99 | 761.7 | 30.17 | 766.3 | 63 | 17.2 | 78 | E | 3 | 1.3 | ..... | ..... | 10s | ..... | E | 0 | 0 | Threatening | |
| Baltimore, Maryland | 30.24 | 768.1 | 30.29 | 769.4 | 47 | 8.3 | 92 | NE | 7 | 3.1 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Threatening | |
| Barnegat, New Jersey | 30.26 | 768.6 | 30.28 | 769.1 | 48 | 8.9 | 77 | NE | 12 | 5.4 | ..... | 2c | 0 | W | ..... | 0 | 0 | Clear | |
| Bismarck, Dakota | 27.45 | 697.2 | 29.31 | 744.5 | 43 | 6.1 | 75 | E | 44 | 19.7 | ..... | 0 | 8s | ..... | E | 2.32 | 58.9 | Clearing | |
| Boise City, Idaho | 27.03 | 686.6 | 29.91 | 759.7 | 30 | — 1.1 | 68 | Calm | 0 | 0 | ..... | c | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boston, Massachusetts | 30.12 | 765.0 | 30.28 | 769.1 | 47 | 8.3 | 77 | NW | 4 | 1.8 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Fair | |
| Brackettville, Texas | 28.64 | 727.4 | 29.63 | 752.6 | 72 | 22.2 | 34 | NE | 1 | 0.4 | ..... | 8ck | 0 | Calm | ..... | 0.64 | 16.3 | Clear | |
| Breckenridge, Minnesota | 28.50 | 723.9 | 29.45 | 748.3 | 49 | 9.4 | 93 | SE | 27 | 12.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Cloudy | |
| Brownsville, Texas | 29.70 | 754.4 | 29.77 | 756.1 | 73 | 22.8 | 95 | E | 2 | 0.9 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Clear | |
| Buffalo, New York | 29.45 | 748.0 | 30.15 | 765.8 | 55 | 12.8 | 56 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 45 | 7.2 | 46 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 30.01 | 762.2 | 30.27 | 768.8 | 48 | 8.9 | 77 | S | 3 | 1.3 | ..... | 5c | 0 | NW | ..... | 0.02 | 0.5 | Fair | |
| Cairo, Illinois | 29.48 | 748.8 | 29.86 | 758.4 | 68 | 20.0 | 84 | S | 8 | 3.6 | ..... | ..... | 10n | ..... | S | 0.18 | 4.6 | Light rain | |
| Camp Grant, Arizona | 25.07 | 636.8 | 29.87 | 758.7 | 36 | 2.2 | 71 | E | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | 26.74 | 679.2 | 30.22 | 767.6 | 36 | 2.2 | 71 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.38 | 695.4 | *29.87 | 758.7 | 33 | 0.6 | 79 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | |
| Cape Hatteras, N. Carolina | 30.15 | 765.8 | 30.16 | 766.1 | 50 | 10.0 | 86 | NE | 28 | 12.5 | ..... | 8k | 0 | NE | ..... | 0 | 0 | Fair | |
| Cape Henry, Virginia | 30.21 | 767.3 | 30.24 | 768.1 | 47 | 8.3 | 85 | NE | 24 | 10.7 | ..... | ..... | 10s | ..... | NE | 0.02 | 0.5 | Cloudy | |
| Cape Lookout, N. Carolina | 30.17 | 766.3 | 30.18 | 766.6 | 49 | 9.4 | 93 | NE | 21 | 9.4 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Cape May, New Jersey | 30.26 | 768.6 | 30.29 | 769.4 | 46 | 7.8 | 84 | NE | 8 | 3.6 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| Charleston, South Carolina | 30.12 | 765.0 | 30.18 | 766.6 | 61 | 16.1 | 77 | NE | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 23.45 | 595.6 | 29.39 | 746.5 | 31 | — 0.6 | 79 | W | 24 | 10.7 | ..... | 0 | 8s | ..... | W | Inap. | Inap. | Cloudy | |
| Chicago, Illinois | 29.13 | 739.9 | 29.81 | 757.2 | 55 | 12.8 | 74 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Cincinnati Ohio | 29.30 | 744.2 | 29.93 | 760.2 | 63 | 17.2 | 62 | SE | 5 | 2.2 | ..... | 8c | 0 | W | ..... | 0 | 0 | Fair | |
| Cleveland, Ohio | 29.32 | 744.7 | 30.04 | 763.0 | 53 | 11.7 | 61 | SE | 13 | 5.8 | ..... | 2c | 0 | W | ..... | 0 | 0 | Clear | |
| Concho, Texas | 27.96 | 710.2 | 29.63 | 752.6 | 50 | 10.0 | 37 | NW | ..... | ..... | 1 | 8c | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Corsicana, Texas | 29.38 | 746.2 | 29.83 | 757.7 | 60 | 15.6 | 82 | N | 4 | 1.8 | ..... | 2cs | 0 | Calm | ..... | 0.15 | 3.8 | Clear | |
| Davenport, Iowa | 29.07 | 738.4 | 29.69 | 754.1 | 59 | 15.0 | 88 | SE | 1 | 0.4 | ..... | 5cs | 0 | SE | ..... | 0.19 | 4.8 | Fair | |
| Deadwood, Dakota | 24.52 | 622.8 | ..... | ..... | 32 | 0.0 | 89 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 2.70 | 68.6 | Heavy snow | |
| Denison, Texas | 29.04 | 737.6 | 29.82 | 757.4 | 60 | 15.6 | 49 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.06 | 1.5 | Clear | |
| Denver, Colorado | 24.18 | 614.2 | 29.40 | 746.7 | 40 | 4.4 | 82 | W | 50 | 22.4 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Detroit, Michigan | 29.34 | 745.2 | 30.00 | 762.0 | 52 | 11.1 | 60 | SE | 8 | 3.6 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Dodge City, Kansas | 26.99 | 685.5 | 29.21 | 741.9 | 47 | 8.3 | 70 | SW | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 29.09 | 738.9 | 29.67 | 753.6 | 58 | 14.4 | 88 | S | 8 | 3.6 | ..... | ..... | ..... | Fog | ..... | Calm | 0.35 | 8.9 | Foggy |
| Duluth, Minnesota | 29.08 | 738.6 | 29.76 | 755.9 | 45 | 7.2 | 92 | NE | 24 | 10.7 | ..... | ..... | 10n | ..... | NE | 0.25 | 6.3 | Heavy rain | |
| Eagle Pass, Texas | 29.06 | 738.1 | 29.77 | 756.1 | 68 | 20.0 | 51 | E | 8 | 3.6 | ..... | 5c | 0 | E | ..... | 0 | 0 | Fair | |
| Eastport, Maine | 30.22 | 767.6 | 30.28 | 769.1 | 39 | 3.9 | 73 | E | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 61 | 16.1 | 36 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.39 | 746.5 | 30.10 | 764.5 | 56 | 13.3 | 57 | SE | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Escanaba, Michigan | 29.32 | 744.7 | 29.96 | 761.0 | 48 | 8.9 | 63 | E | 10 | 4.5 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Florence, Arizona | 28.31 | 719.1 | 29.91 | 759.7 | 50 | 10.0 | 65 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | 24.01 | 609.8 | 30.01 | 762.2 | 30 | — 1.1 | 55 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.37 | 644.4 | ..... | ..... | 29 | — 1.7 | 56 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.08 | 637.0 | 30.04 | 763.0 | 52 | 11.1 | 27 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Fort Gibson, Indian Ter | 29.23 | 742.4 | 29.76 | 755.9 | 54 | 12.2 | 67 | E | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | |
| Fort Griffin, Texas | 28.60 | 726.4 | 29.87 | 758.7 | 49 | 9.4 | 44 | Calm | 0 | 0 | ..... | 5ck | 2s | W | Calm | Inap. | Inap. | Cloudy | |
| Fort St. Michael, Alaska | 29.44 | 747.8 | 29.48 | 748.8 | 36 | 2.2 | 100 | E | 8 | 3.6 | ..... | ..... | 10s | ..... | SW | 0.10 | 2.5 | Clear | |
| Fort Sill, Indian Territory | 28.58 | 725.9 | 29.68 | 753.9 | 50 | 10.0 | 64 | SW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | |
| Galveston, Texas | 29.77 | 756.1 | 29.81 | *757.2 | 71 | 21.7 | 100 | SE | 6 | 2.7 | ..... | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Cloudy |
| Grand Haven, Michigan | 29.25 | 742.9 | 29.89 | 759.2 | 51 | 10.6 | 79 | NE | 14 | 6.3 | ..... | ..... | 10ks | ..... | NE | 0 | 0 | Cloudy | |
| Indianapolis, Indiana | 29.11 | 739.4 | 29.86 | 758.4 | 62 | 16.7 | 67 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Indianola, Texas | 29.77 | 756.1 | 29.80 | 756.9 | 74 | 23.3 | 86 | SE | 4 | 1.8 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Jacksboro, Texas | 28.71 | 729.2 | 29.83 | 757.7 | 51 | 10.6 | 40 | S | 4 | 1.8 | ..... | 8ck | 0 | W | ..... | 0 | 0 | Fair | |
| Jacksonville, Florida | 30.07 | 763.8 | 30.09 | 764.3 | 68 | 20.0 | 84 | NE | 4 | 1.8 | ..... | ..... | 10n | ..... | NE | 0.01 | 0.3 | Light rain | |
| Keokuk, Iowa | 29.06 | 738.1 | 29.64 | 753.1 | 63 | 17.2 | 78 | S | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0.23 | 5.8 | Clear | |
| Key West, Florida | 29.96 | 761.0 | 29.99 | 761.7 | 78 | 25.6 | 69 | E | 11 | 4.9 | ..... | 2k | 0 | E | ..... | 0 | 0 | Clear | |
| Kittyhawk, North Carolina | 30.19 | 766.8 | 30.21 | 767.3 | 48 | 8.9 | 85 | NE | 28 | 12.5 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Knoxville, Tennessee | 29.08 | 738.6 | 30.07 | 763.8 | 62 | 16.7 | 72 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Crosse, Wisconsin | 28.92 | 734.6 | 29.62 | 752.3 | 58 | 14.4 | 76 | SE | 12 | 5.4 | ..... | ..... | 10ks | ..... | SE | 0.24 | 6.1 | Cloudy | |
| La Mesilla, New Mexico | 25.98 | 659.9 | 30.03 | 765.3 | 32 | 0.0 | 61 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.33 | 745.0 | 29.66 | 753.4 | 69 | 20.6 | 90 | E | 2 | 0.9 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Leavenworth, Kansas | 28.77 | 730.7 | 29.69 | 754.8 | 49 | 9.4 | 78 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.93 | 23.6 | Clear | |
| Los Angeles, California | 29.60 | 751.8 | 29.95 | 760.7 | 42 | 5.6 | 78 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.37 | 746.0 | 29.92 | 760.0 | 65 | 18.3 | 63 | S | 9 | 4.0 | ..... | 5c | 2s | SW | S | 0 | 0 | Fair | |
| Lynchburg, Virginia | 29.54 | 750.3 | 30.23 | 767.8 | 55 | 12.8 | 61 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.28 | 743.7 | 29.98 | 761.5 | 48 | 8.9 | 63 | SE | 4 | 1.8 | ..... | 5c | 5s | S | Calm | 0 | 0 | Cloudy | |
| Mason, Texas | 28.23 | 717.0 | 29.96 | 761.0 | 53 | 11.7 | 48 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | N | 0 | 0 | Cloudy | |
| Memphis, Tennessee | 29.55 | 750.6 | 29.86 | 758.4 | 68 | 20.0 | 90 | S | 10 | 4.5 | ..... | ..... | 10s | ..... | S | 0.14 | 3.6 | Cloudy | |
| Milwaukee, Wisconsin | 29.11 | 739.4 | 29.83 | 757.7 | 49 | 9.4 | 85 | SE | 11 | 4.9 | ..... | 10cs | 0 | ..... | ..... | 0 | 0 | Cloudy | |
| Mobile, Alabama | 29.94 | 760.5 | 29.98 | 761.5 | 70 | 21.1 | 85 | SE | 11 | 4.9 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Threatening | |
| Montgomery, Alabama | 29.82 | 757.4 | 30.05 | 763.3 | 61 | 16.1 | 85 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Morgantown, West Virginia | 29.03 | 737.3 | 30.07 | 763.8 | 60 | 15.6 | 65 | SE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mt. Washington, N. H. | 23.95 | 608.3 | 30.31 | 769.9 | 28 | — 2.2 | 77 | NE | 15 | 6.7 | ..... | 5c | 2s | Calm | NE | 0.32 | 8.1 | Fair | |
| Nashville, Tennessee | 29.46 | 748.3 | 29.99 | 761.7 | 64 | 17.8 | 68 | SE | 11 | 4.9 | ..... | ..... | 10s | ..... | S | 0 | 0 | Threatening | |
| New Haven, Connecticut | 30.18 | 766.6 | 30.30 | 769.6 | 48 | 8.9 | 78 | N | 5 | 2.2 | ..... | 5c | 0 | Calm | ..... | 0.01 | 0.3 | Fair | |
| New London, Connecticut | 30.25 | 768.3 | 30.30 | 769.6 | 51 | 10.6 | 65 | N | 5 | 2.2 | ..... | 1cs | Haze | N | Calm | Inap. | Inap. | Clear | |
| New Orleans, Louisiana | 29.81 | 757.9 | 29.90 | 759.4 | 75 | 23.9 | 86 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0.12 | 3.0 | Cloudy | |
| Newport, Rhode Island | 30.22 | 767.6 | 30.27 | 768.8 | 47 | 8.3 | 70 | N | 5 | 2.2 | ..... | 1c | 0 | ..... | ..... | 0 | 0 | Clear | |
| New York, New York | 30.12 | 765.0 | 30.30 | 769.6 | 50 | 10.0 | 64 | NW | 2 | 0.9 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Norfolk, Virginia | 30.20 | 767.1 | 30.26 | 768.6 | 47 | 8.3 | 85 | NE | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| North Platte, Nebraska | 26.52 | 673.6 | 29.01 | 736.8 | 39 | 3.9 | 60 | SW | 10 | 4.5 | ..... | 5k | 0 | W | ..... | 0.03 | 0.8 | Fair | |
| Olympia, Washington Ter. | 29.70 | 754.4 | 29.74 | 755.4 | 46 | 7.8 | 85 | S | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Omaha, Nebraska | 28.39 | 721.1 | 29.42 | 747.3 | 53 | 11.7 | 73 | SE | 12 | 5.4 | ..... | 0 | Haze | ..... | Calm | 0.97 | 24.6 | Clear | |
| Oswego, New York | 29.89 | 759.2 | 30.22 | 767.6 | 53 | 11.7 | 73 | S | 8 | 3.6 | ..... | 10c | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Pembina, Dakota | 28.84 | 732.5 | 29.65 | 753.1 | 48 | 8.9 | 100 | E | 22 | 9.8 | ..... | ..... | 10n | ..... | E | 0.44 | 11.2 | Light rain | |
| Philadelphia, Pennsylvania | 30.27 | 768.8 | 30.33 | 770.4 | 45 | 7.2 | 84 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Phœnix, Arizona | 28.76 | 730.5 | 30.02 | 777.7 | 41 | 5.0 | 65 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.16 | 435.8 | 29.37 | 746.0 | — 8 | —22.2 | 100 | NW | 36 | 16.1 | ..... | ..... | 10n | ..... | Calm | 0.39 | 9.9 | Light snow | |
| Pioche, Nevada | 23.91 | 607.3 | 29.68 | 753.9 | 26 | — 3.3 | 100 | SW | 1 | 0.4 | ..... | ..... | Fog | ..... | Calm | 0.15 | 3.8 | Foggy | |
| Pittsburg, Pennsylvania | 29.29 | 744.0 | 30.10 | 764.5 | 53 | 11.7 | 61 | SE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Port Huron, Michigan | 29.38 | 746.2 | 30.04 | 763.0 | 54 | 12.2 | 55 | SE | 4 | 1.8 | ..... | 10cs | 0 | W | ..... | 0.02 | 0.5 | Cloudy | |
| Portland, Maine | 30.22 | 767.6 | 30.27 | 768.8 | 45 | 7.2 | 84 | E | 5 | 2.2 | ..... | ..... | Fog | ..... | Calm | 6 | 0 | Foggy | |
| Portland, Oregon | 29.74 | 755.4 | 29.84 | 757.9 | 48 | 8.9 | 77 | SE | 2 | 0.9 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light rain | |
| Prescott, Arizona | 24.79 | 629.6 | 30.15 | 765.8 | 27 | — 2.8 | 42 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Punta Rassa, Florida | 30.02 | 762.5 | 30.04 | 763.0 | 71 | 21.7 | 85 | E | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Red Bluff, California | 29.58 | 751.3 | 29.94 | 760.5 | 49 | 9.4 | 78 | S | 6 | 2.7 | ..... | Haze | 5s | Calm | Calm | 0 | 0 | Fair | |
| Rochester, New York | 29.57 | 751.1 | 30.18 | 766.6 | 53 | 11.7 | 61 | S S | 2 | 0.9 | ..... | 2c | Sm'e | Calm | Calm | 0 | 0 | Fair | |
| Roseburg, Oregon | 29.23 | 742.4 | 29.79 | 756.7 | 50 | 10.0 | 68 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Sacramento, California | 29.88 | 758.9 | 29.97 | 761.2 | 48 | 8.9 | 85 | SE | 7 | 3.1 | ..... | 8ck | 0 | SW | ..... | 0 | 0 | Cloudy | |
| St. Louis, Missouri | 29.21 | 741.9 | 29.76 | 755.9 | 63 | 17.2 | 83 | SE | 4 | 1.8 | ..... | 0 | 5s | ..... | Calm | 0.37 | 9.4 | Fair | |
| St. Marks, Florida | 30.07 | 763.8 | 30.09 | 764.3 | 63 | 17.2 | 88 | SE | 5 | 2.2 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| St. Paul, Minnesota | 28.78 | 731.0 | 29.58 | 751.3 | 52 | 11.1 | 86 | E | 12 | 5.4 | ..... | ..... | 10ks | ..... | SE | 0.61 | 15.5 | Cloudy | |
| Salt Lake City, Utah | 25.45 | 646.4 | 29.78 | 756.4 | 36 | 2.2 | 61 | N | 2 | 0.9 | ..... | 2c | 2s | NW | NE | 0.34 | 8.6 | Fair | |
| San Antonio, Texas | 29.03 | 737.3 | 29.59 | 751.6 | 68 | 20.0 | 70 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Diego, California | 29.92 | 760.0 | 29.99 | 761.7 | 44 | 6.7 | 92 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandusky, Ohio | 29.36 | 745.7 | 30.02 | 762.5 | 54 | 12.2 | 67 | SE | 14 | 6.3 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Sandy Hook, New Jersey | 30.27 | 768.8 | 30.31 | 769.9 | 47 | 8.3 | 92 | E | 7 | 3.1 | ..... | 1c | 0 | NW | ..... | 0 | 0 | Clear | |
| San Francisco, California | 29.92 | 760.0 | 29.99 | 761.7 | 50 | 10.0 | 79 | SW | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Santa Fé, New Mexico | 23.07 | 586.0 | 29.61 | 752.1 | 24 | — 4.4 | 61 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 30.06 | 763.5 | 30.15 | 765.8 | 65 | 18.3 | 78 | E | 12 | 5.4 | ..... | 8c;k | 0 | W;E | ..... | 0 | 0 | Fair | |
| Shreveport, Louisiana | 29.63 | 752.6 | 29.81 | 757.9 | 71 | 21.7 | 95 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Smithville, North Carolina | 30.17 | 766.3 | 30.21 | 767.3 | 49 | 9.4 | 93 | N | 10 | 4.5 | ..... | ..... | 10ks | ..... | N | 0 | 0 | Cloudy | |
| Springfield, Massachusetts | 30.10 | 764.5 | 30.23 | 767.8 | 47 | 8.3 | 77 | NE | 1 | 0.4 | ..... | ..... | 10s | ..... | NE | 0.14 | 3.6 | Cloudy | |
| Stockton, Texas | 26.84 | 681.7 | 29.84 | 757.9 | 42 | 5.6 | 42 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 30.22 | 767.6 | 30.27 | 768.8 | 47 | 8.3 | 77 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Toledo, Ohio | 29.32 | 744.7 | 29.99 | 761.7 | 56 | 13.3 | 63 | Calm | 0 | 0 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Hazy | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 44 | 6.7 | 75 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Fair | |
| Tybee Island, Georgia | 30.10 | 764.5 | 30.14 | 765.5 | 64 | 17.8 | 83 | NE | 24 | 10.7 | ..... | 5k | 0 | NE | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.55 | 750.6 | ..... | ..... | 34 | 1.1 | 70 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | |
| Vicksburg, Mississippi | 29.64 | 752.8 | 29.89 | 759.2 | 69 | 20.6 | 100 | SE | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0.41 | 10.4 | Clear | |
| Virginia City, Montana | 24.02 | 610.1 | 29.50 | 749.3 | 25 | — 3.9 | 87 | W | 2 | 0.9 | ..... | ..... | 10n | ..... | Calm | 0.07 | 1.8 | Cloudy | |
| Visalia, California | 29.63 | 752.6 | 30.01 | 762.2 | 41 | 5.0 | 91 | Calm | 0 | 0 | ..... | 5ck | 0 | NW | ..... | 0 | 0 | Light snow. | |
| Washington, D. C. | 30.18 | 766.6 | 30.30 | 769.6 | 45 | 7.2 | 92 | NE | 7 | 3.1 | ..... | ..... | 10ks | ..... | NE | 0 | 0 | Fair | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 36 | 2.2 | 29 | E | ..... | ..... | 1 | 2c | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Wilmington, N. Carolina | 30.12 | 765.0 | 30.20 | 767.1 | 46 | 7.8 | 94 | NE | 12 | 5.4 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Fair | |
| Winnemucca, Nevada | 25.52 | 648.2 | 29.88 | 758.9 | 31 | — 0.6 | 69 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Cloudy | |
| Wood's Holl, Mass | 30.22 | 767.6 | 30.27 | 768.8 | 56 | 13.3 | 62 | S | 8 | 3.6 | ..... | Haze | 0 | Calm | ..... | 0.01 | 0.3 | Clear | |
| Yankton, Dakota | 28.19 | 716.0 | 29.44 | 747.8 | 43 | 6.1 | 75 | S | 16 | 7.2 | ..... | 2c | 0 | S | ..... | 0.85 | 21.6 | Fair | |
| Yuma, Arizona | 29.79 | 756.7 | 29.96 | 761.0 | 47 | 8.3 | 77 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| York Factory, B. A. | 30.06 | 763.5 | 30.11 | 764.8 | 18.0 | — 7.8 | 92 | SE | 2 | 0.9 | ..... | 1c | 0 | NE | ..... | 0 | 0 | Fair | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 29.92 | 760.0 | 29.94 | 760.5 | 80 | 26.7 | 70 | E | 4.8 | 2.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.08 | 764.0 | 30.09 | 764.3 | 79 | 26.1 | 86 | Calm | 0 | 0 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.85 | 758.2 | 29.93 | 760.2 | 82 | 27.8 | ..... | SE | 2 | 0.9 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | 29.97 | 761.2 | 29.97 | 761.2 | 82 | 27.8 | 87 | SW | ..... | ..... | 2 | ..... | 10n | ..... | ..... | 0.710 | 18.03 | Rainy | C. J. Hering. |
| Batavia, Dutch Guiana, S. A. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.23 | 640.8 | ..... | ..... | 69.0 | 20.6 | 83 | Calm | ..... | ..... | 0 | ..... | 10s;n | ..... | ..... | 0.13 | 3.3 | ..... | Thomas Herran. |

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medillin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m., Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,862.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | BAROMETER. As read off. Inches. | BAROMETER. As read off. Millimeters. | BAROMETER. Attached Thermometer. Fahrenheit. | BAROMETER. Attached Thermometer. Centigrade. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Up'er From— | CLOUDS. Direction. Low'r From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | SEA-SWELL. Character. | SEA-SWELL. Direction from— | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.94 | 760.5 | 50 | 10.0 | 48 | 8.9 | 85 | S | 7 | 3.1 | ..... | ..... | 10 | ..... | S | 0 | 0 | ..... | ..... | Overcast..... | |
| Navy Yard, Pensacola, Fla. | 30.14 | 765.5 | 70 | 21.1 | 70 | 21.1 | 95 | E | 27 | 12.1 | ..... | ..... | 8 | ..... | E | 0 | 0 | ..... | ..... | Cloudy..... | |
| Navy Yard, Portsmouth, N.H | 30.31 | 769.9 | 68 | 20.0 | 51 | 10.6 | 79 | NW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan | 30.23* | 767.8* | 60.8 | 16.0 | 58 | 14.4 | 69 | SW | ..... | ..... | 3 | ..... | 10s | ..... | WSW | 0 | 0 | ..... | ..... | Overcast..... | |
| Adams, Panama | 30.00 | 762.0 | 83 | 28.3 | 83 | 28.3 | 87 | E | ..... | ..... | 1 | ..... | 8 | ..... | E | ..... | ..... | Smooth | ..... | Fair..... | |
| Alliance, Villefranche, France | 29.81‡ | 757.2‡ | ..... | ..... | 61 | 16.1 | 71 | E | ..... | ..... | 0–1 | ..... | 5 | ..... | E | ..... | ..... | Light | S | Pleasant..... | |
| Ashuelot, Shanghai, China | 30.02 | 762 5 | 62 | 16.7 | 57 | 13.9 | 87 | NW | ..... | ..... | 2 | ..... | 10 | ..... | NW | ..... | ..... | ..... | ..... | Fair..... | |
| Canonicus, New Orleans, La | 29.93 | 760.2 | 54 | 12.2 | 74 | 23.3 | 95 | ESE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Colorado, New York, N. Y. | 30.27‡ | 768.8‡ | ..... | ..... | 51 | 10 6 | 64 | E | 1 | 0.4 | ..... | ..... | 2 | ..... | ENE | 0 | 0 | ..... | ..... | Hazy..... | |
| Constellation, N. 47° 14′ W. 16° 35′ | 29.84‡ | 757.9‡ | ..... | ..... | 57 | 13.9 | 87 | SW | ..... | ..... | 4 | ..... | 2 | ..... | SW | ..... | ..... | Smooth | SW | Fair..... | |
| Constitution, Havre, France | 29.81‡ | 757.2‡ | ..... | ..... | 54 | 12.2 | 74 | W | ..... | ..... | 2 | ..... | 2 | ..... | W | ..... | ..... | ..... | ..... | Clear..... | |
| Despatch, Constantinople, Turkey | 29.87‡ | 758.7‡ | ..... | ..... | 66 | 18.9 | 54 | S | ..... | ..... | 1 | ..... | 8 | ..... | S | ..... | ..... | ..... | ..... | Cloudy..... | |
| Franklin, Norfolk, Va | 30.36 | 771.1 | 65 | 18.3 | 47 | 8.3 | 77 | NNE | 7.2 | 3.2 | ..... | ..... | 10 | ..... | NNE | 0 | 0 | ..... | ..... | D. clouds..... | |
| Gettysburg Valetta, Malta | 30.00‡ | 762.0‡ | ..... | ..... | 66 | 18.9 | 94 | WNW | ..... | ..... | 5 | ..... | 2 | ..... | NW | Blank | Blank | ..... | ..... | Fair..... | |
| Guard, Porto Grande, Cape Verde Islands | 30.08 | 764.0 | 74 | 23.3 | 73 | 22.8 | 67 | NE | ..... | ..... | 5 | ..... | 2 | ..... | NE | ..... | ..... | Ground | NW | Clear..... | |
| Hartford, Montevideo, Uraguay | 29.99 | 761.7 | 59 | 15.0 | 60 | 15.6 | 71 | N | 18 | 8.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Marion, Smyrna, Turkey | 29.90 | 759.4 | 69 | 20.6 | 70 | 21.1 | 52 | SSW | ..... | ..... | 3 | ..... | 2 | ..... | SW | 0 | 0 | Smooth | ..... | Clear..... | |
| Michigan, Erie, Pa | 29.60 | 751.8 | 60 | 15.6 | 56 | 13.3 | 63 | S | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Monocacy, Shanghai, China | 29.99‡ | 761.7‡ | ..... | ..... | 60 | 15.6 | 94 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | NW | ..... | ..... | ..... | ..... | Cloudy..... | |
| New Hampshire, Port Royal, S. C. | 30.36† | 771.1† | ..... | ..... | 64 | 17.8 | 83 | ENE | 15 | 6.7 | ..... | ..... | 2 | ..... | E | ..... | ..... | ..... | ..... | Fair..... | |
| Omaha, N. 35° 40′ W. 74° 20′ | 30.15* | 765.8* | 65 | 18.3 | 63 | 17.2 | 72 | NE | 9 | 4.0 | ..... | ..... | 4 | ..... | NW | 0 | 0 | High | NE | Bright..... | |
| Onward, Callao, Peru | 29.98† | 761.5† | ..... | ..... | 69 | 20.6 | 90 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, N. 27° 24′, W. 85° 04′ | 30.06‡ | 763.5‡ | ..... | ..... | 75 | 23.9 | 95 | ESE | ..... | ..... | 6 | ..... | 8 | ..... | S | ..... | ..... | Rough | SE | Cloudy..... | |
| Palos, Shanghai, China | 30.05* | 763.3* | 62 | 16.7 | 57 | 13.9 | 87 | WNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Overcast..... | |
| Pensacola, N. 36° 24′, W. 149° 45′ | 30.40 | 772.1 | 63 | 17.2 | 55 | 12.8 | 74 | NW | 16 | 7.2 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | Smooth | NW | Cloudy..... | |
| Plymouth, Norfolk, Va | 30.21‡ | 767.3‡ | ..... | ..... | 48 | 8.9 | 85 | NE | ..... | ..... | 3 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Powhatan, Norfolk, Va | 30.26‡ | 768.6‡ | ..... | ..... | 47 | 8.3 | ?? | NE | 6.0 | 2.7 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Ranger, Amoy, China | 30.09* | 764.3* | ..... | ..... | 74 | 23.3 | 86 | W | ..... | ..... | 0–1 | ..... | 9 | ..... | Calm | ..... | ..... | Smooth | ..... | D. clouds..... | |
| Rio Bravo, Brownsville, Texas | 29.73 | 755.1 | 74 | 23.3 | 73 | 22.8 | 100 | E | ..... | ..... | 1 | ..... | 10 | ..... | NW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Santee, Annapolis, Md | 30.30‡ | 769.6‡ | ..... | ..... | 47 | 8.3 | 85 | E | ..... | ..... | 4 | ..... | 8 | ..... | E | 0 | 0 | ..... | ..... | Cloudy..... | |
| Saratoga, Washington, D. C. | 30.21 | 767.3 | 59 | 15.0 | 50 | 10.0 | 100 | E | ..... | ..... | 3 | ..... | 10 | ..... | N&W | 0 | 0 | ..... | ..... | Overcast..... | |
| St. Louis, League Island, Pa | 30.24 | 768.1 | 60 | 15.6 | 48 | 8.9 | 85 | NNW | 3 | 1.3 | ..... | ..... | 8 | ..... | NE | 0 | 0 | ..... | ..... | Cloudy..... | |
| Supply, Havre, France | 29.90 | 759.4 | 53 | 11.7 | 54 | 12.2 | 74 | WNW | ..... | ..... | 1 | ..... | 5 | ..... | W | ..... | ..... | ..... | ..... | Clear..... | |
| Swatara, N. 19° 18′, W. 83° 14′ | 29.91‡ | 759.7‡ | ..... | ..... | 81 | 27.2 | 83 | ENE | ..... | ..... | 3–4 | ..... | 5 | ..... | E | ..... | ..... | Smooth | ..... | Fair..... | |
| Tennessee, N. 18° 22′, E. 40° 06′ | 29.88* | 758.9* | 84 | 28.9 | 82 | 27.8 | 63 | NNW | 6 | 2.7 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Rough | NNW | Blue sky..... | |
| Trenton, Villefranche, France | 29.81‡ | 757.2‡ | ..... | ..... | 73 | 22.8 | 43 | ESE | ..... | ..... | 0–1 | ..... | 5 | ..... | W | 0 | 0 | ..... | ..... | Fair..... | |
| Tuscarora, N. 16° 40′, W. 99° 12′ | 29.66 | 753.4 | 76 | 24.4 | 77 | 25.0 | 86 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | Calm | 0 | 0 | Smooth | ..... | Cloudy..... | |
| Vandalia, Villefranche, France | 29.88‡ | 758.9‡ | ..... | ..... | 61 | 16.1 | 77 | E | ..... | ..... | 2 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Clear..... | |
| Wabash, Boston, Mass | 30.26‡ | 768.6‡ | ..... | ..... | 47 | 8.3 | 85 | NW | 5 | 2.2 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Fair..... | |
| Wyoming, N. 47° 40′, W. 23° 48′ | 29.52†* | 749.8†* | ..... | ..... | 67 | 19.4 | 69 | WSW | ..... | ..... | 3–4 | ..... | 8 | ..... | ..... | ..... | ..... | Mod'ate | SW | Squally..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The position given for the Plymouth is that at noon, local time, instead of that at 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the air. | | Relative humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | |
| S. S. City of Panama, Nanaimo, B. C. | | | 29.81* | 757.2* | | | | ENE | | | 2 | | 5? | | NE | | | Clear? | Capt. Seabury. |
| S. S. City of Peking, N. 37° 06′, E. 160° 28′ | | | 30.27† | 768.8† | 48 | 8.9 | 92 | WSW | 21.0 | 9.4 | | | 1 | | WSW | Small | WSW | D. clouds | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, N. 35° 23′, W. 157° 22′ | | | | | 56 | 13.3 | | NNW | | | 6 | | 5 | | N | Smooth | NNW | D. clouds | Capt. Maury. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, N. 42° 35′, W. 54° 13′ | | | 30.30† | 769.6† | 48 | 8.9 | 83 | N | | | 4 | | 8ck | | NNW | Mod'ate | NNE | Fair | Capt. W. H. Thompson. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Aneroid.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic | | | | | | | | | | | | | | | | | | | |
| S. S. Gaelic, N. 33° 22′, E. 135° 30′ | | | 29.94† | 760.5† | 70 | 21.1 | ?? | NNE | | | 6 | | Haze | | | Head sea. | NE | Raining | Capt. John Metcalf. |
| S. S. Oceanic, N. 27° 30′, E. 123° 0′ | | | 29.84 | 757.9 | 58 | 14.4 | 100 | N | | | 3 | | 10 | | | Smooth | | D. clouds | Capt. W. H. Kidley |
| | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Obser |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | Character | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, Philadelphia, Pa | | | 30.30* | 769.6* | 49 | 9.4 | 100 | NNE | | | 2 | | 5 | | NNE | | | Cloudy | Captain Sargent. |
| S. S. Ohio, Philadelphia, Pa | | | 30.28 | 769.1 | 48 | 8.9 | 85 | NE | | | 1 | | 9 | | ENE | | | Hazy | Captain Morrison. |
| S. S. Pennsylvania, Liverpool | | | 29.63† | 752.6† | 61 | 16.1 | 94 | SE | | | 3 | | 2 | | SE | | | Clear | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for elevation; instrumental error not known. †Corrected for temperature and elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
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**ALLAN LINE MARINE SERIES.**

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Scandinavian | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES.** (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Mt. Desert Island, Maine | | | 30.20? | 767.1? | 50 | 10.0 | 65 | E | 6 | 2.7 | | | Fog | | | Smooth | | Foggy | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 30.02 | 762.5 | 13 | —10.6 | 98 | W | 3.3 | 1.5 | | 8c | 2ks | NW | NW | | | Clearing | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assd.) Chief Signal Officer. U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 19, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.15 | 765.7 | 65.1 | 18.4 | 83 | N | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Dr. Ollive. |
| Nemours | ..... | ..... | 30.12 | 765.1 | 77.0 | 25.0 | 36 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Michel. |
| Algiers | ..... | ..... | 29.97 | 761.2 | 73.0 | 22.8 | 53 | W | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Towilliere. |
| La Calle | ..... | ..... | 29.96 | 760.9 | 68.4 | 20.2 | 68 | ENE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Boulangeot. |
| Tunis | ..... | ..... | 30.08 | 764.0 | 74.5 | 23.6 | 58 | W | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Jacques. |
| Sfax | ..... | ..... | 30.08 | 764.0 | 73.4 | 23.0 | ..... | NNW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Gau. |
| Saida | ..... | ..... | 30.17 | 766.2 | 76.3 | 24.6 | ..... | WNW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair | Herbin. |
| Tebessa | ..... | ..... | 30.02 | 762.6 | ..... | ..... | ..... | WNW | ..... | ..... | 7 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Watrin. |
| Geriville | ..... | ..... | 30.21 | 767.4 | 63.7 | 17.6 | 78 | N | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Lemaillot. |
| Laghouat | ..... | ..... | 30.14 | 765.5 | 81.7 | 27.6 | 20 | E | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Bertrand. |
| Biskra | ..... | ..... | 30.07 | 763.6 | 83.3 | 28.5 | 39 | SE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.32 | 744.7 | 29.86 | 758.4 | 63.3 | 17.4 | 50 | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.559 | 14.2 | Raining | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.06 | 738.2 | 29.82 | 757.4 | 59.4 | 15.2 | 68 | WSW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0.004 | 0.1 | ..... | Dr. Wierzbiski. |
| Eperies | 28.87 | 733.2 | 29.71 | 754.7 | 67.5 | 19.7 | 54 | S | ..... | ..... | 1 | ..... | 9k;s | ..... | ..... | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.62 | 727.0 | 29.85 | 758.1 | 60.6 | 15.9 | 51 | SSW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0.006 | 0.15 | ..... | Andreas Rospini. |
| Hermannstadt | 28.34 | 719.7 | 29.73 | 755.1 | 59.0 | 15.0 | 72 | SSW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0.057 | 1.45 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.55 | 725.2 | 29.88 | 759.0 | 54.7 | 12.6 | 50 | WSW | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 0.110 | 2.8 | ..... | Prof. C. Wagner |
| Lemberg | 28.74 | 730.0 | 29.70 | 754.3 | 65.1 | 18.4 | 69 | SW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0.886 | 22.5 | ..... | Dr. T. Stanecki. |
| Pola | 29.81 | 757.2 | 29.92 | 760.0 | 62.1 | 16.7 | 72 | WSW | ..... | ..... | 2 | ..... | 8ks | ..... | ..... | 0.189 | 4.8 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.30 | 744.3 | 29.76 | 755.8 | 65.8 | 18.8 | 47 | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.783 | 19.9 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.52 | 749.9 | 29.80 | 756.9 | 59.4 | 15.2 | 81 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0.203 | 5.15 | ..... | Karl Stancel. |
| Trieste | 29.83 | 757.7 | 29.93 | 760.3 | 62.2 | 16.8 | 80 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Cloudy | P. Busin. |
| Vienna | 29.16 | 740.7 | 29.87 | 758.6 | 59.0 | 15.0 | 56 | WNW | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 0.087 | 2.2 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.35 | 720.0 | 29.87 | 758.7 | 57.0 | 13.9 | 68 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. M. Passau. |
| Brussels | 29.62 | 752.3 | 29.82 | 757.3 | 56.3 | 13.5 | 83 | SSW | ..... | ..... | 1 | ..... | 10 | ..... | SSW | 0.047 | 1.2 | Raining | Royal Observatory. |
| Furnes | 29.78 | 756.4 | 29.80 | 757.0 | 55.4 | 13.0 | 91 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.138 | 3.5 | ..... | M. E. de Cae. |
| Maeseyck | 29.71 | 754.7 | 29.84 | 757.9 | 64.2 | 17.9 | 52 | SSW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0.004 | 0.1 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4? set. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

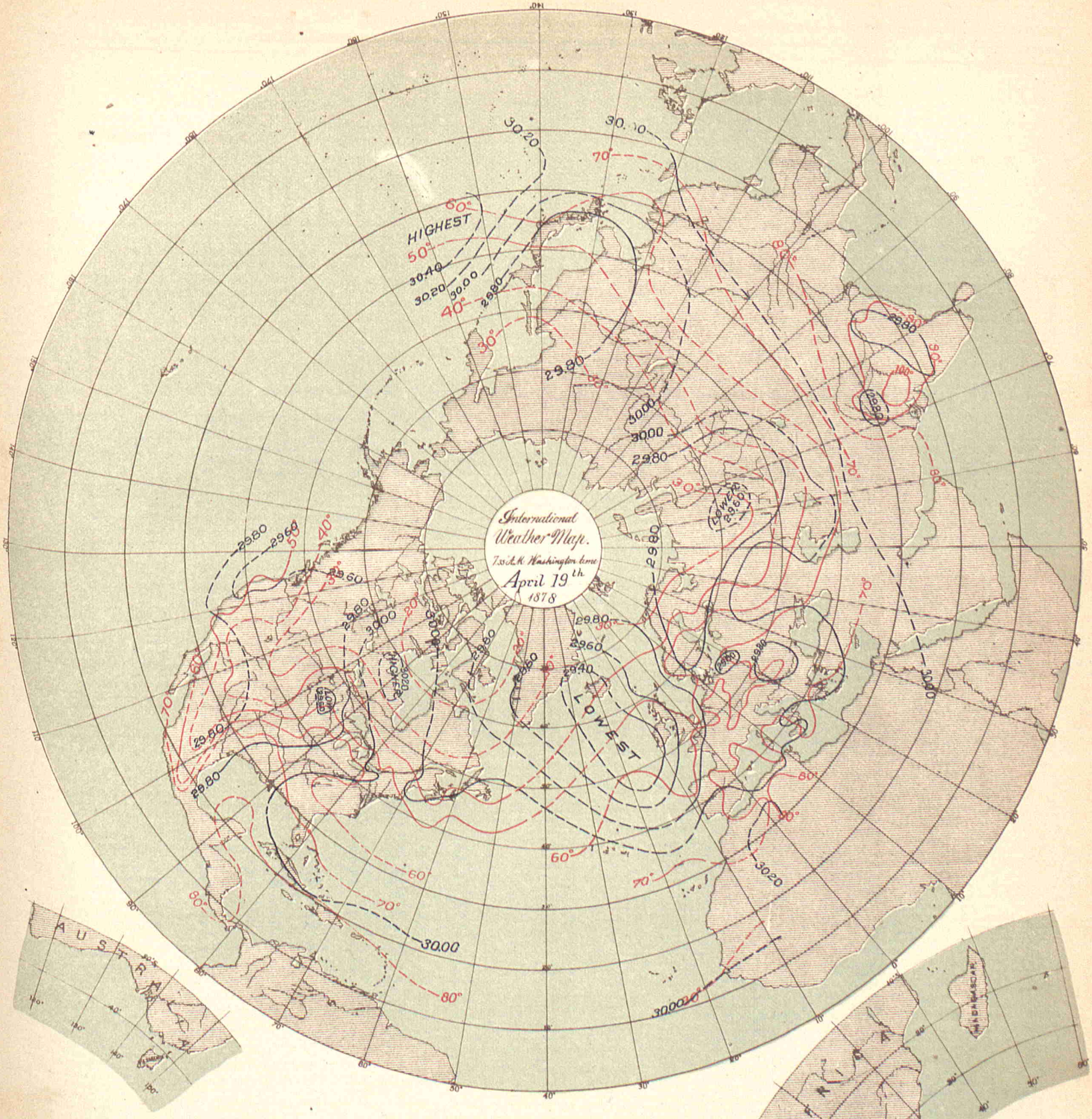
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.58 | 751.3 | 29.68 | 753.9 | 42.9 | 6.1 | ..... | SSE | 16 | 7.2 | ..... | ..... | ..... | ..... | ..... | 0.050 | 1.27 | Dense fog.... | W. B. swell. |
| Ardrossan | 29.53 | 750 0 | 29.55 | 750.6 | 53 | 11.7 | ..... | S | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.50 | 749.3 | 58.9 | 14.9 | ..... | SE | 17 | 7.6 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.60 | 751.8 | 60.0 | 15.6 | ..... | ESE | 17 | 7.6 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 29.45 | 748.0 | 60.0 | 15.6 | ..... | SSE | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds.... | J. L. E. Dreyer. |
| Bradford, Yorkshire | 29.23 | 742 4 | 29.63 | 752.6 | 50.6 | 10.3 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0.01 | 0.3 | Overcast..... | J. McLandsborough. |
| Bridgetown, (Barbados) | ..... | ..... | 29.92 | 760.0 | 83.0 | 28.3 | ..... | NE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.68 | 753.9 | 54.0 | 12.2 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | H. Todd. [H.C. |
| Cardington | ..... | ..... | 29.69 | 754.1 | 53.0 | 11.7 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy..... | John McLaren. |
| Chatham, School M. E | 29.55 | 750.6 | 29.68 | 753.9 | 55.2 | 12.9 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Q. M. Serg., Geo. Stuart, R. E. |
| Dartmoor | 28.15 | 715.0 | 29.61 | 752.1 | 50.0 | 10.0 | ..... | SE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | Gloomy..... | Alexander Watt. |
| Donaghadee | 29.49 | 749.0 | 29.52 | 749.8 | 55 | 12.8 | ..... | S | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | J. Mac Gowan. |
| Dover | 29.71 | 754.6 | 29.74 | 755.4 | 49 | 9.4 | ..... | WSW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.63 | 752.6 | 55.7 | 13.2 | ..... | SE | 0.2 | 0.1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | Thomas Mackereth. |
| Falmouth, Observatory | 29.43 | 747.5 | 29.65 | 753.1 | 54.0 | 12.2 | ..... | SSE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy ..... | The Staff. |
| Fort Napier, (Natal) | 27.66 | 702.6 | 29.85 | 758.2 | 78.4 | 25.8 | ..... | E | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.70 | 754.4 | 29.93 | 760.2 | 86.0 | 30.0 | ..... | W | ..... | ..... | 0 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | |
| Galway, Queen's College | ..... | ..... | 29.30 | 744.2 | 55 | 12.8 | ..... | SE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.97 | 761.2 | 30.02 | 762.5 | 71.5 | 21.9 | ..... | W | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | Corpl. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.37 | 746.0 | 29.57 | 751.1 | 53.1 | 11.7 | ..... | SSE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy ..... | D. G. Maclean. |
| Great Yarmouth | 29.72 | 754.9 | 29.73 | 755.1 | 49 | 9.4 | ..... | SE | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | Misty..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.52 | 749.8 | 29.68 | 753.9 | 58.6 | 14.8 | ..... | WSW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Cloudy..... | The Staff, for G. B. Airy. |
| Guernsey | 29.47 | 748.5 | 29.68 | 753.9 | 59.5 | 15 3 | ..... | SSW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 29.65 | 753.1 | 59 | 15.0 | ..... | SE | ..... | ..... | 4 | ..... | 3c | ..... | ..... | 0 | 0 | Fine..... | M. P. Moyle. |
| Holyhead | 29.54 | 750.3 | 29.59 | 751.6 | 56 | 13.3 | ..... | S | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | John Tilston. |
| Jersey | 29.46 | 748.3 | 29.75 | 755.6 | 54.9 | 12.7 | ..... | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | Blank | Blank | Foggy ..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 29.68 | 753.9 | 59.7 | 15.4 | ..... | SSW | 16 | 7.2 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | Threatening | The Staff. |
| Kingstown | 29.52 | 749.8 | 29.55 | 750.6 | 56 | 13.3 | ..... | SE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.67 | 753.6 | 52.2 | 11.2 | ..... | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.97 | 761.2 | 30.05 | 763.3 | 68.8 | 20.4 | ..... | SW | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | Sgt. Fred. Travis, A. H. |
| Nairn | 29.47 | 748.5 | 29.56 | 750.8 | 59 | 15.0 | ..... | Calm | ..... | ..... | 0 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded... | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 30.14 | 765.5 | 74.2 | 23.4 | ..... | NE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | C. S. Duncombe. |
| Nottingham, Observatory | 29.48 | 748.8 | 29.67 | 753.6 | 54.3 | 12.4 | ..... | SSE | ..... | ..... | 1 | ..... | 10cs | ..... | Calm | 0.057 | 1.45 | Overcast..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.13 | 739.9 | 29.65 | 753.1 | 55.1 | 12.8 | ..... | S | ..... | ..... | 1–2 | ..... | 10 | ..... | ..... | Blank | Blank | Foggy ..... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.67 | 753.6 | 59 | 15.0 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | Mr. Lucas. |
| Plymouth | 29.60 | 751.8 | 29.67 | 753.6 | 53.0 | 11.7 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Misty ..... | John Merrifield. |
| Roche's Point | 29.43 | 747.5 | 29.47 | 748.5 | 53 | 11.7 | ..... | S | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | W. Kennedy. |
| Saint Ann's Head | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 29.64 | 752.8 | 47.9 | 8.8 | ..... | SE | 30 | 13.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Foggy ..... | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.83 | 757.7 | 65.4 | 18.6 | ..... | S | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | Sergt. W. H. Lyne. |
| Sheffield | 29.40 | 746.7 | 29.68 | 753.9 | 56.1 | 13.4 | ..... | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.01 | 0.3 | Overcast..... | W. F. Cooper. |
| Silloth Rectory | 29.56 | 750.8 | 29.59 | 751.6 | 61.8 | 16.6 | 65 | SW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0.050 | 1.27 | D. clouds.... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.24 | 742.7 | 29.64 | 752.8 | 57.0 | 13.9 | ..... | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Rev. S. J. Perry. |
| Stornoway, Lewis C., (Hebr.) | ..... | ..... | 29.48 | 748.8 | 54 | 12.2 | ..... | SSE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Hazy..... | John Sutherland. |
| Stratfield Turgiss | 29.48 | 748.8 | 29.70 | 754.4 | 59.5 | 15.3 | ..... | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. C. H. Griffith, F. M |
| Thurso | ..... | ..... | 29.60 | 751.8 | 48 | 8.9 | ..... | SSE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 29.66 | 753.4 | 58 | 14.4 | ..... | S | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 29.32 | 744.7 | 55.2 | 12.9 | ..... | SSE | 33 | 14.8 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | Misty..... | The Staff. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.94 | 760.5 | 69.5 | 20.8 | 89 | SE | ..... | ..... | 2 | ..... | 10kn | ..... | ..... | 0.11 | 2.8 | Hazy..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.77 | 756.1 | 29.96 | 760.9 | 78.8 | 26.0 | 62 | SSE | 22.0 | 9.8 | ..... | 1 | 2 | ..... | ..... | 0 | 0 | Squally..... | C. Meldrum. |
| Melbourne, Observatory | 29.92 | 759.9 | 30.01 | 762.2 | 61.2 | 16.2 | 92 | WSW | 5 | 2.2 | ..... | ..... | 8 | ..... | ..... | 0.52 | 13.2 | Fine..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m.

| MARINE SERIES. VESSELS. | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather | Observer. |
|---|---|---|---|---|
| S. S. Algeria, N. 40° 35′, W. 64° 15′ | 15* | SE | Blue sky..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | Capt. C. C. Prehn. |
| S. S. Naid, N. 43° 5′ W. 46° 20′ | 3 | Confused | Overcast..... | Capt. J. Smith. [R. |
| S. S. Peruvian | ..... | ..... | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | Capt. Alex Simpson. |
| S. S. Yorkshire | ..... | ..... | ..... | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instru-m'tal error and temperature. Inches. | Barometer. Corrected for instru-m'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.22 | 666.0 | ..... | ..... | 71.6 | 22.0 | 89 | NE | ..... | ..... | 1 | ..... | 10s | ..... | NE | 0 | 0 | ..... | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.82 | 757.3 | 29.86 | 758.5 | 52.3 | 11.3 | 68 | W | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | |
| Fanöe | 29.83 | 757.6 | 29.85 | 758.1 | 50.4 | 10.2 | 90 | W | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | |
| Godthaab, (Greenland) | 29.55 | 750.5 | 29.59 | 751.6 | 26.2 | — 3.2 | 82 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | |
| Stykkisholm, (Iceland) | 29.30 | 744.3 | 29.35 | 745.4 | 37.6 | 3.1 | 90 | SE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Raining | |
| Thorshavn, (Farõe) | 29.62 | 752.3 | 29.65 | 753.2 | 45.1 | 7.3 | 94 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy | |
| Vestervig | 29.70 | 754.3 | 29.87 | 758.6 | 47.1 | 8.4 | 94 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.37 | 745.9 | 29.92 | 759.9 | 59.0 | 15 | 78 | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.169 | 4.3 | Covered | Collignon, Director. |
| Amiens, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bonvarne, Director. |
| Avignon, Normal School | 29.84 | 758.0 | 29.92 | 760.0 | 74.3 | 23.5 | 42 | NNE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Very clear | Mr. Giraud, Director |
| Bar-sur-Seine | 29.32 | 744.6 | 29.86 | 758.5 | 60.8 | 16.0 | 62 | W | ..... | ..... | 2 | ..... | 8kn | ..... | W | 0.028 | 0.7 | Very cloudy | C. Saillard. |
| Beaumette Obs'y (Angers) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Albert Cheux. |
| Beauvais | ..... | ..... | ..... | ..... | 62.1 | 16.7 | 66 | S | ..... | ..... | 2 | ..... | 8 | ..... | W | 0.167 | 4.25 | Very cloudy | Normal School. |
| Besançon | 29.04 | 737.6 | 29.93 | 760.3 | 54.1 | 12.3 | 88 | SSE | ..... | ..... | 2 | ..... | 5 | ..... | SW | 0.256 | 6.5 | Cloudy | Normal School. |
| Bourg-en-Bresse | 29.10 | 739.1 | 30.02 | 762.5 | 60.8 | 16 | 79 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0.087 | 2.2 | Clear | Normal School. |
| Bourges, Normal School | 29.33 | 745.0 | 29.87 | 758.8 | 62.4 | 16.9 | 75 | SW | ..... | ..... | 2 | ..... | 8 | ..... | SW | 0.020 | 0.5 | Very cloudy | A. Wagner, Director. |
| Brest, Naval Observatory | 29.41 | 747.1 | 29.63 | 752.7 | 55.2 | 12.9 | 93 | SW | ..... | ..... | 3 | ..... | 10 | ..... | SW | 0.256 | 6.50 | Foggy | The Staff. |
| Carcassonne, Normal School | 29.54 | 750.2 | 29.93 | 760.3 | 72.3 | 22.4 | 50 | W | ..... | ..... | 2 | ..... | 2 | ..... | W | 0.059 | 1.5 | Slightly cl'dy | Vateau, Director. |
| Caen | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| Chartres, Normal School | 29.23 | 742.4 | 29.80 | 756.8 | 52.7 | 11.5 | 95 | W | ..... | ..... | 2 | ..... | 10 | ..... | W | 0 | 0 | Covered | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.54 | 750.2 | 29.85 | 758.2 | 57.6 | 14.2 | 74 | S | ..... | ..... | 3 | ..... | 10kn | ..... | S | 0 | 0 | Covered | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.56 | 725.3 | 29.87 | 758.8 | 66.0 | 18.9 | 46 | W | ..... | ..... | 3 | ..... | 8 | ..... | W | 0.252 | 6.4 | Very cloudy | Alluard, Director. |
| Commercy, Normal School | 29.02 | 737.0 | 29.90 | 759.5 | 54.7 | 12.6 | 81 | SW | ..... | ..... | 2 | ..... | 5 | ..... | SW | 0.35 | 9. | Cloudy | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.82 | 732.1 | 29.97 | 761.1 | 68.4 | 20.2 | 47 | NW | ..... | ..... | 2 | ..... | 5 | ..... | NW | 0 | 0 | ⅛ Cloudy | M. Kina. |
| Grenoble | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| La Roche-sur-Yon, N. School | 29.65 | 753.2 | 29.87 | 758.6 | 61.9 | 16.6 | 85 | SW | ..... | ..... | 2 | ..... | 8 | ..... | SW | 0.201 | 5.1 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.52 | 749.8 | 29.82 | 757.5 | 60.4 | 15.8 | 77 | SW | ..... | ..... | 2 | ..... | 8 | ..... | SW | 0.167 | 4.25 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 29.00 | 736.7 | 29.95 | 760.7 | 60.8 | 16 | 81 | SE | ..... | ..... | 2 | ..... | 8 | ..... | ENE | 0.220 | 5 6 | Very cloudy | Voudez, Director. |
| Lorient, Naval Observatory | 29.69 | 754.0 | 29.78 | 756.5 | 58.3 | 14.6 | 91 | SSW | ..... | ..... | 5 | ..... | 10 | ..... | S | 0.433 | 11.0 | Covered | T. Carré, Director. |
| Mâcon, Normal School | 29.24 | 742.6 | 29.91 | 759.8 | 60.6 | 15.9 | 87 | NE | ..... | ..... | 2 | ..... | 5 | ..... | SW | 0.181 | 4.6 | Cloudy | M. Marchal, Director. |
| Metz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. A. Schuster, Dir. |
| Mirecourt | 28.84 | 732.4 | 29.88 | 758.9 | 54.1 | 12.3 | 80 | SW | ..... | ..... | 4 | ..... | 10 | ..... | SW | 0.08 | 2. | Covered | Normal School. |
| Nismes, Normal School | 29.70 | 754.4 | 29.90 | 759.4 | 72.3 | 22 4 | 56 | N | ..... | ..... | 4 | ..... | 10 | ..... | NE | 0 | 0 | Covered | Boyer, Director. |
| Orleans, Normal School | 29.35 | 745.6 | 29.73 | 755.2 | 75.2 | 24 | 81 | W | ..... | ..... | 1 | ..... | 8 | ..... | W | 0.31 | 8. | Very cloudy | Bernard, Director. |
| Paris, Observatory | 29.60 | 751.7 | 29.83 | 757.7 | 61.0 | 16.1 | 61 | WSW | ..... | ..... | 1 | ..... | 10 | ..... | SW | 0.122 | 3.09 | Covered | National Observatory. |
| Privas | 28.90 | 734.1 | 29.95 | 760.8 | 61.7 | 16.5 | 41 | N | ..... | ..... | 2 | ..... | 10 | ..... | N | 0.08 | 2. | Covered | Normal School |
| Puy de Dome (Summit) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.87 | 758.7 | 29.90 | 759.5 | 66.7 | 19 3 | 51 | SW | ..... | ..... | 3 | ..... | 5 | ..... | SW | 0.12 | 3. | ⅓ Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.72 | 754.8 | 29.80 | 757.0 | 62.6 | 17.0 | 62 | SSE | ..... | ..... | 2 | ..... | 10 | ..... | SW | 0.189 | 4.8 | Covered | F. Lucard, Director |
| Saint Malo (Port) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. H. Hercouet |
| Tarbes, Normal School | 29.02 | 737.2 | 30.09 | 764.2 | 64.4 | 18 | 62 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | T. Hugues, Director |
| Villefranche | 29.25 | 742.9 | 29.95 | 760.6 | 64.9 | 18.3 | 68 | SE | ..... | ..... | 1 | ..... | 10 | ..... | W | 0.181 | 4.6 | Covered | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.76 | 756.0 | 29.79 | 756.7 | 82.8 | 28.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchési. |
| Lyons | ..... | ..... | 29.98 | 761.4 | 61.7 | 16.5 | 62 | ..... | ..... | ..... | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Fair | M. Jeys. |
| Marseilles, Observatory | ..... | ..... | 29.91 | 759.8 | 67.1 | 19.5 | 56 | WNW | ..... | ..... | 1-2 | ..... | 1 | ..... | ..... | Inap | Inap. | ..... | The Staff. |
| Mont-Louis | 24.84 | 630.8 | 30.15 | 765.8 | 50.7 | 10.4 | 56 | ESE | 7.4 | 3.33 | ..... | ..... | 5 | ..... | SSW | 0.098 | 2.5 | ..... | Mr. Falguère. |
| Nice | ..... | ..... | 30.20 | 767.0 | 60.4 | 15.8 | 87 | ESE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | Clear | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.56 | 750.7 | 29.83 | 757.7 | 61.2 | 16.2 | 68 | SW | ..... | ..... | 2 | ..... | 10 | ..... | SW | 0.142 | 3.6 | ..... | Marié Davy, Director |
| Perpignan | ..... | ..... | 29.95 | 760.6 | 70.0 | 21.1 | 57 | SE | 11.2 | 5.00 | ..... | ..... | 2 | ..... | NW | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.47 | 570.8 | ..... | ..... | 42 8 | 6.0 | ..... | SW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0 | 0 | Fair | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.68 | 753.8 | 29.84 | 758.0 | 60.8 | 16.0 | 67 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.370 | 9.4 | ..... | E. Renou. |
| Toulouse, Observatory | 29.25 | 743.0 | 29.97 | 761.3 | 64.8 | 18.2 | 64 | NE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0.049 | 1.25 | ..... | The Staff. |
| Tours | 29.65 | 753.2 | 29.85 | 758.2 | 63.9 | 17.7 | 71 | W | ..... | ..... | 1 | ..... | 7 | ..... | W | 0.157 | 4.0 | ..... | C. Marquet. |
| Versailles, (near Paris) | ..... | ..... | 29.84 | 758.0 | 59.0 | 15.0 | 75 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.142 | 3.60 | Covered | Dr. A. Bériguy. |
| Zi-Ka-Wei, (near Shanghai) | 29.99 | 761.7 | 30.01 | 762.3 | 54.0 | 12.2 | 93 | SSE | 5.4 | 2.4 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Clear | Marc Dechevrens, S. J |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,58 6.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.04 | 737.6 | 29.88 | 758.9 | 62.8 | 17.1 | 69 | SW | | | 5 | | 6 | SW | | 0.028 | 0.7 | | Prof. Dr. Hoh. |
| Berlin | 29.70 | 754.4 | 29.87 | 758.7 | 60.8 | 16.0 | 43 | NW | | | 1 | | 5 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.35 | 745.4 | 29.87 | 758.8 | 52.3 | 11.3 | 85 | WNW | | | 3 | | 10 | | | 0.819 | 20.80 | Raining | Royal University Obs'y |
| Carlsruhe | 29.45 | 748.1 | 29.87 | 758.8 | 61.3 | 16.3 | 57 | SW | | | 1 | | 9 | | | 0 | 0 | | Albert Senz. |
| Cassel | 29.36 | 745.8 | 29.97 | 761.2 | 62.6 | 17.0 | 47 | SE | | | 4 | | 2 | SW | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.67 | 753.7 | 29.84 | 757.8 | 66.2 | 19.0 | 45 | S | | | 2 | | 6k | | | 0 | 0 | | Director Lose. |
| Emden | 29.83 | 757.7 | 29.87 | 758.6 | 60.6 | 15.9 | 75 | NE | | | 0 | | 4 | SW | | 0 | 0 | | Prof. Prestel. |
| Frankfort on the Main | 29.55 | 750.5 | 29.91 | 759.6 | 63.0 | 17.2 | 31 | SW | | | 1 | | 3 | | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 28.50 | 724.0 | 29.93 | 760.3 | 56.1 | 13.4 | 65 | WSW | | | 1 | | 3 | WSW | | 0.043 | 1.1 | Light rain | M. Wilhelm. |
| Hamburg | 29.81 | 757.1 | 29.88 | 758.9 | 55.2 | 12.9 | 77 | N | | | 2 | | 4k | | | 0.008 | 0.2 | Fine | Captain F. Hegemann. |
| Kiel | 29.85 | 758.2 | 29.87 | 758.6 | 52.0 | 11.1 | 76 | Calm | | | 0 | | 10 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.69 | 754.2 | 29.77 | 756.2 | 64.2 | 17.9 | 60 | E | | | 2 | | 6 | | | 0.012 | 0.3 | Thunder-storm | Prof. E Luther |
| Köslin | | | 29.78 | 756.3 | 43.5 | 6.4 | | N | | | 2 | | 8 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.49 | 749.1 | 29.91 | 759.8 | 52 2 | 11.2 | 85 | N | | | 1 | | 9 | WNW | | 0.016 | 0.4 | Heavy shower | Prof. Bruhns. |
| Memel, Naval School | 29.78 | 756.5 | 29.83 | 757.7 | 55.2 | 12.9 | 76 | W | | | 1 | | 1ck | SW | | | | | Reinbrecht von Skalweit. |
| Neufahrwasser | 29.76 | 756.0 | 29.78 | 756.4 | 53.2 | 11 8 | 86 | NNE | | | 2 | | 7 | | | 0.043 | 1.1 | | A. Lothes. |
| Posen | 29.65 | 753.0 | 29.94 | 760 4 | 50.0 | 10.0 | 97 | WNW | | | 6 | | 10 | | | 0.185 | 4.7 | | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.35 | 745.6 | 29.89 | 759.2 | 64.6 | 18.1 | 54 | SW | | | 3 | | 9 | W | | 0.085 | 2.17 | | Dr. Schur. |
| Stuttgart | 28.97 | 735.7 | 29.89 | 759.2 | 61.7 | 16.5 | 38 | SW | | | 1 | | 5 | W | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | 29.26 | 743.1 | 29.78 | 756.3 | 62.4 | 16.9 | 47 | SW | | | 4 | | 10 | | | 0.002 | 0.06 | Foggy | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.43 | 722.0 | 29.90 | 759.4 | 57.6 | 14.2 | 50 | WSW | 1 | 0.5 | | | 8k | | W | 0.299 | 7.6 | | Dr. Von Bebber. |
| Wustrow, Naval School | 29.91 | 759.8 | 29.95 | 760.8 | 47.5 | 8.6 | 83 | NE | | | 3 | | 10 | | | 0 | 0 | | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.55 | 750.5 | 29.93 | 760.2 | 71.4 | 21.9 | | SW | | | 4.0 | | | | | | | Clear | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.85 | 758.1 | 29.85 | 758.2 | 79.4 | 26.3 | 68 | WSW | 33? | 14.8? | | | 9 | | | 0 | 0 | D. clouds | |
| Deesa | 29.40 | 746.8 | 29.86 | 758.4 | 102.0 | 38.9 | 24 | Calm | | | | | 0 | | | 0 | 0 | Hazy | |
| Bombay | 29.81 | 757.2 | 29.85 | 758.1 | 86.5 | 30.3 | 55 | W | 10 | 4.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.84 | 707.2 | 29.79 | 756.6 | 93.4 | 34.1 | 39 | SW | | | | | 1 | | W | 0 | 0 | Dust-whirl | |
| Lahore | 29.07 | 738.4 | 29.80 | 756.8 | 94.1 | 34.5 | 27 | Calm | 1.5 | 0.7 | | | 4 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.36 | 694.9 | 29.86 | 758.5 | 83.8 | 28.8 | 52 | W | 17 | 7.6 | | | 1 | | | 0 | 0 | D. clouds | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.95 | 735.4 | 29.85 | 758.1 | 83.6 | 28.7 | 60 | Calm | 2.1 | 0.9 | | | 7 | | | 0 | 0 | | |
| Agra | 29.29 | 743.9 | 29.84 | 757.8 | 96.6 | 35.9 | 30 | NW | | | | | | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.76 | 730.5 | 29.77 | 756.2 | 96.5 | 35.8 | 22 | N | 3.7 | 1.7 | | | | | | 0 | 0 | Blue sky | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.46 | 748.3 | 29.82 | 757.5 | 94.1 | 34.5 | 39 | Calm | 1.7 | 0.8 | | | 10 | | | 0 | 0 | Overcast | |
| Allahabad | 29.50 | 749.3 | 29.80 | 757.0 | 91.9 | 33.3 | 30 | Calm | 1.2 | 0.5 | | | 5 | NW | | 0 | 0 | Blue sky | |
| Patna | 29.62 | 752.2 | 29.79 | 756.7 | 92.3 | 33.5 | 29 | W | 1.7 | 0.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.82 | 706.5 | 29.79 | 756.6 | 88.6 | 31.4 | 21 | N | 3.3 | 1.5 | | | | | | 0 | 0 | Blue sky | |
| Cuttack | 29.73 | 755.2 | 29.81 | 757.2 | 90.4 | 32.4 | 27 | S | 6.3 | 2.8 | | | 7 | | | 0 | 0 | | |
| Calcutta (Alipore) | 29.80 | 757.0 | 29.82 | 757.5 | 86.7 | 30.4 | 37 | S | 5 | 2.2 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.46 | 748.2 | 29.84 | 758.0 | 83.9 | 28.8 | 45 | Calm | 1 | 0.4 | | | 1 | | | 0 | 0 | D. clouds | |
| Chittagong | 29.76 | 755.9 | 29.85 | 758.3 | 86.4 | 30.2 | 50 | W | 5.2 | 2 3 | | | | | | 0 | 0 | Misty | |
| Sibsagar | 29.54 | 750.3 | 29.88 | 758.8 | 80.7 | 27.1 | 59 | NNE | 1.6 | 0.7 | | | 0 | | | 0 | 0 | Blue sky | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.47 | 723.2 | 29.80 | 757.0 | 93.8 | 34.3 | 19 | N | 3.7 | 1.7 | | | | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.50 | 749.2 | 29.90 | 759.5 | 61.5 | 16.4 | 49 | E | 1.3 | 0.6 | ..... | ..... | 5 | ..... | ..... | 0.571 | 14.5 | ..... | Prof. Giovanni Codig. |
| Padua | 29.80 | 756.8 | 29.90 | 759.5 | 62.8 | 17.1 | 50 | S | 6.3 | 2.8 | ..... | ..... | 5 | W | ..... | 0.008 | 0.2 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.70 | 754.4 | 29.89 | 759.2 | 62.8 | 17.1 | 54 | SE | 4.9 | 2.2 | ..... | ..... | 5 | W | ..... | 0.201 | 5.1 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.58 | 726.0 | 29.88 | 759.0 | 63.3 | 17.4 | 45 | SW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.41 | 746.9 | 29.92 | 759.9 | 64.4 | 18.0 | ..... | E | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.01 | 736.9 | 29.91 | 759.8 | 64.0 | 17.8 | 48 | SSE | 3.8 | 1.7 | ..... | ..... | 4 | N | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 28.01 | 711.4 | 29.91 | 759.6 | 60.6 | 15.9 | 54 | NW | ..... | ..... | 2 | ..... | 5 | WNW | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.71 | 754.5 | 29.93 | 760.1 | 59.4 | 15.2 | 80 | E | ..... | ..... | 4 | ..... | 7 | W | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.76 | 755.8 | 29.93 | 760.1 | 63.3 | 17.1 | 64 | SW | 4.3 | 1.9 | ..... | ..... | 6 | S | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.66 | 753.3 | 29.97 | 761.3 | 65.3 | 18.5 | 49 | NE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0.217 | 5.5 | ..... | Prof. P. Pigorini. |
| Florence | 29.67 | 753.5 | 29.92 | 760.0 | 69.8 | 21.0 | 51 | SW | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 0.217 | 5.5 | ..... | Cav. F. Meucci. |
| Leghorn | 29.85 | 758.2 | 29.93 | 760.3 | 64.0 | 17.8 | 60 | N | 2.5 | 1.1 | ..... | ..... | 10 | W | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 29.89 | 759.2 | 29.94 | 760.4 | 57.9 | 14.4 | 80 | N | 6.3 | 2.8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.38 | 720.8 | 29.93 | 760.2 | 57.2 | 14.0 | 76 | NE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0.098 | 2.5 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.84 | 757.8 | 29.95 | 760.6 | 69.8 | 21.0 | 63 | SSE | ..... | ..... | 2 | ..... | 6 | S | ..... | 0.055 | 1.4 | ..... | Avv. P. Ponticelli. |
| Rome | 29.80 | 756.8 | 29.97 | 761.2 | 68.5 | 20.3 | 60 | S | 8.1 | 3.6 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrar |
| Naples, O. U. | 29.81 | 757.2 | 30.01 | 762.3 | 71.1 | 21.7 | 51 | S | ..... | ..... | 2 | ..... | 5 | WNW | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 66.2 | 19.0 | 55 | W | 7.4 | 3.3 | ..... | ..... | 4 | ..... | ..... | 0.240 | 6.1 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.76 | 756.0 | 29.95 | 760.8 | 72.0 | 22 2 | 42 | NW | ..... | ..... | 4 | ..... | 7 | W | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.14 | 740.2 | 30.02 | 762.6 | 65.1 | 18.4 | 71 | SW | 3.1 | 1.4 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.70 | 754.4 | 29.95 | 760.8 | 74.5 | 23.6 | 29 | WSW | 8.7 | 3.9 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.87 | 758.6 | 29.94 | 760 5 | 69.8 | 21.0 | 49 | SW | ..... | ..... | 4 | ..... | 7 | WSW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.45 | 748.1 | 30.01 | 762.2 | 64.9 | 18.3 | 61 | NW | 1.8 | 0.8 | ..... | ..... | 3 | W | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nagasaki | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Tokei (Yeddo) | 29.79 | 756.6 | 29.86 | 758 4 | 59.7 | 15.4 | 95 | SSE | 17.1 | 7.6 | ..... | ..... | 10s | ..... | ..... | 0.250 | 6.35 | Cloudy ..... | The Observatory. |
| Tokei (Yeddo) University | 29.75 | 755.6 | 29.85 | 758.2 | 60 | 15 6 | 94 | S | 11 | 4.9 | ..... | ..... | 10n | ..... | ..... | 0.17 | 4.3 | Wet..... | Prof. P. V. Veeder. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 67.5 | 19.7 | 32 | N | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | ..... | ..... | ..... | L. Castillo, A. E. |
| Guadalajara | 24.87 | 631.6 | 29.81 | 757.2 | 60.4 | 15.8 | 58 | Calm | 0 | 0 | ..... | 0 | 9 | ..... | SW | 0 | 0 | Very hazy... | Prof. J. Rossell. |
| Guanajuato | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Very cloudy | Prof. L. Perez. |
| Leon | ..... | ..... | ..... | ..... | 65.1 | 18.4 | 36 | Calm | 0 | 0 | ..... | 8cs | 0 | SW | ..... | 0 | 0 | Cloudy..... | Prof. V. Fernandez |
| Mexico | 23.08 | 586.2 | 30.07 | 763.7 | 51.8 | 11.0 | 41 | Calm | 0 | 0 | ..... | 1c | 0 | W | ..... | 0 | 0 | Slightly hazy | Prof. M. Leal. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 61.3 | 16.3 | 51 | Calm | 0 | 0 | ..... | 0 | 9k | ..... | S | 0 | 0 | Cloudy.. ..... | I. Orozco, M. D. |
| Puebla | 23.29 | 591.6 | 29.99 | 761.8 | 49.8 | 9.9 | 60 | N | 3.8 | 1.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy... | M. V. de Leon, M. E. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. R. Gonzalez. |
| Tlacotalpam | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| San Luis Potosi | 29.81 | 757.3 | 29.83 | 757.6 | 73.4 | 23.0 | 79 | S | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy... | Prof. F. R. Bayly. |
| Vera-Cruz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Zacatecas | 29.81 | 757.1 | 29.83 | 757.7 | 75.2 | 24.0 | 74 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy... | Prof. J. Rossell. |
| Puebla, (Catholic Institute) | 23.32 | 592 5 | 30.06 | 763.6 | 50 0 | 10.0 | 40 | NNE | 6.7 | 0.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy... | P. Spina. [M.M. D. D |
| Morelia | 23.99 | 609.5 | ..... | ..... | 57.0 | 13.9 | 56 | Calm | 0 | 0 | ..... | 0 | 2 | ..... | SW | 0 | 0 | Very hazy.. | M. Tena, F. L. Param. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.81 | 757.2 | 29.81 | 757.2 | 56 1 | 13.4 | ..... | SSW | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 29.79 | 756.7 | 29.85 | 758.1 | 55.9 | 13.3 | ..... | E | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.012 | 0.3 | ..... | |
| Helder | 29.80 | 757.0 | 29.80 | 757.0 | 54.9 | 12.7 | ..... | E | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 29.80 | 756.9 | 29.80 | 756.9 | 63.1 | 17.3 | 63 | SSW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.78 | 756.3 | 29.82 | 757.5 | 64.8 | 18.2 | 48 | S | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy..... | H. v d Brink. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Notes.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.80 | 757.0 | 29.86 | 758.4 | 51.1 | 10.6 | 72 | NW | 6.0 | 2.7 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.78 | 756.5 | 29.82 | 757.5 | 39.2 | 4.0 | 53 | N | 18 | 8 | ..... | ..... | 6 | ..... | ..... | 0.457 | 11.6 | ..... | |
| Christiania | 29.63 | 752.7 | 29.78 | 756.4 | 60.4 | 15.8 | 41 | SSW | 4 | 2 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.78 | 756.3 | 29.82 | 757.4 | 27.0 | — 2.8 | 74 | N | 11 | 5 | ..... | ..... | 10 | ..... | ..... | 0.039 | 1.0 | ..... | |

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.91 | 759.7 | 30.10 | 764.6 | 61.0 | 16.1 | 77 | W | 15.0 | 6.7 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.04 | 737.5 | 30.06 | 763.4 | 65.1 | 18.4 | 66 | SSW | 11.9 | 5.3 | ..... | ..... | 9 | SSW | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 30.09 | 764.3 | 30.18 | 766.5 | 70.2 | 21.2 | 72 | WSW | 11.2 | 5.0 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.65 | 753.2 | 30.01 | 762.3 | 62.2 | 16.8 | 92 | SW | 22.4 | 10.0 | ..... | ..... | 10 | ..... | ..... | 0.157 | 4.0 | Light rain... | The Staff. |
| Ponta Delgada, (Azores) | 30.07 | 763.8 | 30.14 | 765.6 | 66.6 | 19.2 | 54 | WNW | 16.1 | 7.2 | ..... | ..... | 6 | ..... | ..... | 0.028 | 0.7 | ..... | |

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.93 | 760.1 | 29.93 | 760.3 | 82.4 | 28.0 | ..... | S | ..... | ..... | 5 | ..... | 2 | ..... | S | 2 | ..... ..... | D. clouds | J. F. R. R. Bastos, Com'd't. A. J. de Mattos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Rio Douro, S. 25° 08′, E. 32° 37′ | ..... | ..... | 30.00 | 762.1 | 78.8 | 26.0 | ..... | ESE | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 5 | ESE | Blue sky | J. T. d'Oliveria, Com'd't. |
| Sado, Porto Praya, Cape Verde Islands | 30.06* | 763.5* | 30.07* | 763.8* | 82.0 | 27.8 | ..... | NNE | ..... | ..... | 4 | ..... | 0 | ..... ..... | ..... | 3 | NNE | Blue sky | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.72 | 754.9 | 29.72 | 755.0 | ..... | ..... | ..... | NW | ..... | ..... | 3 | ..... | 5 | ..... | NW | 1 | ..... | D. clouds | F. Texeira da Silva, Com'd't. |
| Tejo, N. 22° 10′ E. 113° 32′ | .. | ..... | 29.98 | 761.5 | 77.9 | 25.5 | ..... | SE | ..... | ..... | 2 | ..... | 5k;n;c | ..... | SE | 2 | SE | ..... | F. J. Forreina, dos Amas, Com' |

NOTE.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.34 | 745.1 | 29.75 | 755.6 | 64.0 | 17.8 | 65 | S | 4 | 2 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.46 | 748.2 | 29.87 | 758.8 | 56.1 | 13.4 | 69 | SSE | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy clouds... | Astronomical Obs. |
| Dorpat | 29.65 | 753.0 | 29.89 | 759.1 | 54.5 | 12.5 | 45 | SSW | 9 | 4 | ..... | ..... | 5k | ..... ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.83 | 757.7 | 29.85 | 758.1 | 47.5 | 8.6 | 48 | WSW | 13 | 6 | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | Light clouds | Central Physical Obs. |
| Knopio | 29.28 | 743.8 | 29.61 | 752.1 | 38.7 | 3.7 | 100 | SW | 34 | 15 | ..... | ..... | 10[ks;n | ..... | ..... | Blank | Blank | ..... | Ch. Forsten. |
| Kieff | 29.27 | 743.5 | 29.90 | 759.4 | 58.5 | 14.7 | 73 | SE | 9 | 4 | ..... | ..... | 7c;ck;k; | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.87 | 758.7 | 29.94 | 760.5 | 65.8 | 18.8 | 64 | S | 4 | 2 | ..... | ..... | 8kn | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.97 | 761.3 | 29.99 | 761.8 | 60.8 | 16.0 | 64 | NNE | 7 | 3 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Light clouds | Lagorio. |
| Moscow | 29.60 | 751.9 | 30.17 | 766.2 | 41.4 | 5.2 | 40 | S | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.82 | 757.4 | 30.02 | 762.5 | 57.4 | 14.1 | 40 | ESE | 13 | 6 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.77 | 756.1 | 29.79 | 756.6 | 30.6 | — 0.8 | 83 | SSW | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.65 | 727.6 | 30.05 | 763.2 | 62.4 | 16.9 | 50 | Calm | 0 | 0 | ..... | ..... | 4c | ..... | ..... | ..... | ..... | Light clouds | Physical Observatory |
| Astrakhan | 30.07 | 763.8 | 29.99 | 761.7 | 55.9 | 13.3 | 54 | NNE | 16 | 7 | ..... | ..... | 1s | ..... | ..... | Blank | Blank | ..... | Sebastianof. |
| Krotkowo* | 29.54 | 750.4 | 30.04 | 762.9 | 34.9 | 1.6 | 35 | N | 22 | 10 | ..... | ..... | 4k | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.72 | 755.0 | 30.00 | 762.0 | 32.9 | 0.5 | 66 | NNW | 7 | 3 | ..... | ..... | 2k | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.54 | 724.9 | 29.52 | 749.8 | 25.0 | — 3.9 | 87 | NNW | 31 | 14 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Meteorological Obs. |
| Nukuss | 29.72 | 754.8 | 29.95 | 760.8 | 54.5 | 12.5 | 69 | WNW | 11 | 5 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.43 | 722.2 | 30.13 | 765.3 | 57.7 | 14.3 | 95 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | Heavy clouds... | Michelson. |
| Barnaul | 29.29 | 744.0 | 29.80 | 757.0 | 57.4 | 14 1 | 37 | NE | 0 | 0 | ..... | ..... | 10 | ..... ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Yeniseisk | 29.78 | 756.3 | 30.11 | 764.7 | 41.9 | 5.5 | 66 | SE | 7 | 3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 29.70 | 754.3 | 29.84 | 757.9 | 66.4 | 19.1 | 42 | SW | 4 | 2 | ..... | ..... | 3cs | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.74 | 704.7 | 29.81 | 757.1 | 42.4 | 5.8 | 42 | NW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.63 | 752.7 | 29.73 | 755.1 | 47.7 | 8.7 | 80 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Raining | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 26.6 | — 3.0 | 46 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.27 m., or 1,621.37 ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.07 m., or 1,942.27 ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.85 | 758.2 | 29.95 | 760.8 | 65.3 | 18.5 | 64 | SSE | 2.6 | 1.17 | ..... | 2ck | 1k | WSW | ..... | 0 | 0 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.85 | 758.1 | 29.90 | 759.5 | 73.4 | 23.0 | 55 | NW | 2.7 | 1.22 | ..... | 3 | 5 | W | ..... | 0 | 0 | Almost cov. | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.03 | 686.5 | ..... | ..... | 63.5 | 17 5 | 74 | S | 10.3 | 4.60 | ..... | ..... | 7 | ..... | ..... | 0.512 | 13.0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.81 | 706.3 | 30.01 | 762.2 | 62.6 | 17.0 | 72 | SW | 14.2 | 6.33 | ..... | 0 | 9 | ..... | ..... | 0.122 | 3.1 | Almost cov. | The Staff. |
| Murcia, Met. Obs'y | 29.85 | 758.3 | 30.00 | 762.0 | 79.5 | 26.4 | 48 | WNW | 2.4 | 1.06 | ..... | 3 | 5 | E | ..... | 0 | 0 | Cloudy | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.88 | 733.6 | 29.77 | 756.2 | 57.0 | 13.9 | 92 | SW | 28.6 | 12.78 | ..... | ..... | 10 | ..... | ..... ..... | 0.165 | 4.2 | Raining | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.98 | 761.4 | 30.04 | 763.1 | 77.0 | 25.0 | 65 | ESE | 9.6 | 4.3 | ..... | 1ck | 0 | E | ..... | 0 | 0 | Clear | Benito Vines, S. J. |
| San Fernando, Naval Obs'y | 30.02 | 762.4 | 30.12 | 764.9 | 67.3 | 19.6 | 66 | WNW | 9.4 | 4.2 | ..... | 4 | 3 | W | WNW | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.84 | 758.0 | 29.93 | 760.3 | 80.2 | 26.8 | 86 | S | 0 | 0 | ..... | 6kn | 6kn | S | S | 0.384 | 9.75 | Cloudy | Leonardo de Tejeda, Chief of Engineers. |

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.59 | 751.6 | 29.63 | 752.6 | 38.5 | 3.6 | ..... | N | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | ..... |
| Umea | 29.66 | 753.4 | 29.71 | 754.7 | 44.2 | 6.8 | 66 | NW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0.055 | 1.4 | ..... | ..... |
| Hernosand | 29.64 | 752.8 | 29.69 | 754.1 | 52.2 | 11.2 | 52 | NW | ..... | ..... | 4 | ..... | 9 | ..... | ..... | 0.012 | 0.3 | ..... | ..... |
| Stockholm | 29.60 | 751.8 | 29.78 | 756.3 | 57.2 | 14.0 | 69 | SW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | ..... |
| Wisby | 29.79 | 756.7 | 29.85 | 758.2 | 45.3 | 7.4 | 66 | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.68 | 753.8 | 29.75 | 755.7 | 55.8 | 13 2 | 49 | W | 10.5 | 4.7 | ..... | ..... | 5 | NW | ..... | 0.002 | 0.04 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.56 | 725.3 | 29.98 | 761.6 | 53.2 | 11.8 | 76 | N | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0.087 | 2.2 | Covered..... | The Observatory. |
| Zurich | 28.32 | 719.3 | 29.94 | 760.5 | 58.6 | 14.8 | 60 | SW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | Cloudy..... | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +1.0 mm.; Thermometer, —0.6 cent.; Relative Humidity, +19 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.68 | 758.9 | 64.6 | 18.1 | 63 | SW | 8 | 3.5 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanidès. |
| Valona | ..... | ..... | 30.00 | 762.1 | 68.7 | 20.4 | ..... | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0.31 | 8. | Clear..... | A. Bertrand. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.99 | 761.7 | 30.11 | 764.7 | 70.9 | 21.6 | 63 | W | ..... | ..... | 1 | ..... | 2c | ..... | ..... | 0 | 0 | D. clouds.... | Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.78 | 756.4 | 29.84 | 757.9 | 33.9 | 1.1 | 95 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Cloudy..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.76 | 755.9 | 30.07 | 763.8 | 50 | 10.0 | ..... | NE | 3 | 1.3 | ..... | 8c | 0 | NW | ..... | 0 | 0 | Fair..... | W. R. Bigg. |
| *Chatham, N B | 29.79 | 756 7 | 29.85 | 758.2 | 39 | 3.9 | 86 | SW | 3 | 1.3 | ..... | 2k | 8n | SW | SW | 0.02 | 0.5 | Cloudy..... | G. A. Blair. |
| Charlottetown, P. E. Island | 29.90 | 759.4 | 29.94 | 760.5 | 39 | 3.9 | 66 | S | 12 | 5.4 | ..... | ..... | 8ks | ..... | SW | 0 | 0 | Cloudy..... | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.84 | 757.9 | 30.03 | 762.7 | 49.5 | 9.7 | 69 | E | ..... | ..... | 1 | 3cs | 0 | ..... | ..... | 0 | 0 | Fair..... | James Smith, M. A. |
| Dalhousie, N. B | 29.84 | 757.9 | 29.87 | 758.7 | 33.2 | 0.7 | 98 | NW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.27 | 6.9 | Cloudy..... | H. A. Johnson. |
| Esquimault, B. C | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | W. H. Revis. |
| *Father Point, Quebec | 29.90 | 759.4 | 29.92 | 760.0 | 36 | 2.2 | 90 | W | 21 | 9.4 | ..... | ..... | 10s | ..... | Calm | 0.30 | 7.6 | Cloudy..... | J. McWilliams. |
| Fredericton, N. B | 29.86 | 758.4 | 29.92 | 760.0 | 38.4 | 3.6 | 87 | W | 6 | 2.7 | ..... | ..... | 10s | ..... | ..... | 0.045 | 1.15 | Overcast.... | Prof. Harrison. |
| *Fort Garry Manitoba | 28.98 | 736.1 | 29.80 | 756.9 | 45 | 7.2 | 100 | E | 8 | 3.6 | ..... | 5k | 5n | N | E | 0.460 | 11.68 | Cloudy..... | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.80 | 733.8 | 29.08 | 761.5 | 52 | 11.1 | 93 | SE | ..... | ..... | 1 | ..... | 10n | ..... | ..... | Inap. | Inap. | Raining..... | James Grant. |
| *Halifax, N. S | 29.89 | 759.2 | 30.03 | 762 7 | 35 | 1.7 | 98 | SE | 4 | 1.8 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy..... | F. Allison, M. A. |
| Hamilton, Ontario | 29.68 | 753.9 | 30.05 | 763.3 | 48.7 | 9.3 | 91 | E | ..... | ..... | 1 | 10cs | ..... | ..... | ..... | 0.41 | 10.4 | Cloudy..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.09 ? | 738.9 ? | 29.12 ? | 739.6 ? | 35 | 1.7 | 80 | N | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine..... | E. Weedon. |
| *Kingston, Ontario | 29.72 | 754.9 | 30.05 | 763.3 | 50 | 10.0 | 65 | N | 10 | 4.5 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 29.96 | 761.0 | 30.00 | 762.0 | 38 2 | 3.4 | ..... | SW | 5 | 2.2 | ..... | 5c | 0 | SW | ..... | 0 | 0 | Fair..... | C. H. Rigby. |
| *Montreal, Quebec | 29.86 | 758.4 | 30.06 | 763.5 | 45 | 7.2 | 68 | NE | 17 | 7.6 | ..... | 8ic | 0 | NW | ..... | 0 | 0 | Cloudy..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.33 | 745.0 | 30.02 | 762.5 | 51 | 10.6 | 59 | NE | 11 | 4.9 | ..... | ..... | 10n | ..... | NW | 0 | 0 | Cloudy..... | Rev. R. Mosley. |
| Peterboro, Ontario | 29.30 | 744.2 | 30.04 | 763.0 | 53.1 | 11.7 | 70 | Calm | ..... | ..... | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Raining..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.32 | 744.7 | 30.01 | 762.2 | 51 | 10.6 | 93 | Calm | 0 | 0 | ..... | 10k | 0 | W | ..... | 0.02 | 0.5 | Cloudy..... | H. Morgan. |
| Port Hastings, N. S | 30.00 | 762.0 | 30.05 | 763.3 | 29.7 | — 1.3 | ..... | S | 2 | 0.9 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Foggy..... | Peter Grant. |
| Port Stanley, Ontario | 29.35 | 745.5 | 29.99 | 761.7 | 51 | 10.6 | 86 | SE | 4 | 1.8 | ..... | ..... | 10n | ..... | W | 0.10 | 2.5 | Light rain... | M. Payne. |
| *Quebec, Quebec | 29.73 | 755.1 | 30.06 | 763.5 | 40 | 4.4 | 65 | W | ..... | ..... | 3 | 0 | 0 | ..... | ..... | 0.13 | 3.3 | Clear..... | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.68 | 753.9 | 30.15 | 765.8 | 44 | 6.7 | 55 | SW | 4 | 1.8 | ..... | 5ck | 0 | NW | ..... | 0 | 0 | Fair..... | W. H. McIntyre. |
| St. Andrews, N. B | 29.86 | 758.4 | 29.91 | 759.7 | 38 | 3.3 | 95 | SW | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy..... | Dr. Gove. |
| St. John, N. B | 29.80 | 756.9 | 29.97 | 761.2 | 37 | 2.8 | 90 | S | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0.080 | 2.03 | Light rain... | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.28 | 743.7 | 29.99 | 761.7 | 54 | 12.2 | 86 | E | 4 | 1.8 | ..... | 2cs | 0 | ..... | ..... | 0.34 | 8.6 | Fair..... | K. Stewart. |
| Stayner, Ontario | 29.22 | 742.2 | 29.98 | 761.5 | 56 | 13.3 | 81 | SE | 5 | 2.2 | ..... | 5k | 0 | W | ..... | 0.07 | 1.8 | Fair..... | R. J. Cole. |
| Stratford, Ontario | 28.72 | 729.5 | 29 99 | 761.7 | 50.6 | 10.3 | 92 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | ..... | 0.115 | 2.92 | Overcast.... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.02 | 762.5 | 30.05 | 763.3 | 43 | 6.1 | 67 | S | 8 | 3.6 | ..... | 2ck | 0 | ..... | ..... | 0 | 0 | Clear..... | T. C. Hill. |
| *Toronto, Ontario | 29.66 | 753.4 | 30.04 | 763.0 | 49 | 9.4 | 90 | NE | 4 | 1.8 | ..... | 5k | 8s | W | Calm | 0.16 | 4.1 | Light rain... | Magnetic Observatory |
| Windsor, N. S | 29.88 | 758.9 | 29.98 | 761.5 | 44.0 | 6.7 | 60 | S | 9 | 4.0 | ..... | ..... | 7ks | ..... | ..... | 0 | 0 | Fair..... | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 31.6 | — 0.3 | 84 | SE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Fair..... | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,016 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.79 | 756.7 | 30.02 | 762.5 | 56 | 13.3 | 57 | S | 8 | 3.6 | ..... | 1ck | 0 | NW | ..... | 0 | 0 | Clear | |
| Alpena, Michigan | 29.33 | 745.0 | 29.98 | 761.5 | 43 | 6.1 | 91 | E | 10 | 4.5 | ..... | ..... | 10s | ..... | E | 0.57 | 14.5 | Cloudy | |
| Atlantic City, New Jersey | 30.12 | 765.0 | 30.14 | 765.5 | 52 | 11.1 | 72 | W | 7 | 3.1 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Augusta, Georgia | 30.00 | 762.0 | 30.19 | 766.8 | 58 | 14.4 | 82 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Baltimore, Maryland | 30.06 | 763.5 | 30.11 | 764.8 | 51 | 10.6 | 72 | SW | 8 | 3.6 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Fair | |
| Barnegat, New Jersey | 30.10 | 764.5 | 30.12 | 765.0 | 57 | 13.9 | 57 | W | 15 | 6.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Bismarck, Dakota | 27.80 | 706.1 | 29.66 | 753.4 | 43 | 6.1 | 83 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0.21 | 5.3 | Cloudy | |
| Boise City, Idaho | 26.89 | 683.0 | 29.77 | 756.1 | 42 | 5.6 | 57 | N | 4 | 1.8 | ..... | 5k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Boston, Massachusetts | 29.86 | 758.4 | 30.01 | 762.2 | 49.5 | 9.7 | 64 | W | 11 | 4.9 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Brackettville, Texas | 28.67 | 728.2 | 29.65 | 753.1 | 74 | 23.3 | 95 | E | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 28.69 | 726.4 | 29.57 | 751.1 | 44 | 6.7 | 92 | E | 17 | 7.6 | ..... | ..... | 10s | ..... | SE | 0.26 | 6.6 | Cloudy | |
| Brownsville, Texas | 29.73 | 755.1 | 29.79 | 756.7 | 76 | 24.4 | 90 | SE | 4 | 1.8 | ..... | 5c | 5s | W | SE | 0 | 0 | Cloudy | |
| Buffalo, New York | 29.31 | 744.5 | 30.00 | 762.0 | 53 | 11.7 | 100 | E | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.51 | 13.0 | Light rain | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 41 | 5.0 | 65 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.77 | 756.1 | 30.03 | 762.7 | 49 | 9.4 | 63 | W | 7 | 3.1 | ..... | 1c | Haze | W | ..... | 0 | 0 | Clear | |
| Cairo, Illinois | 29.56 | 750.8 | 29.94 | 760.5 | 67 | 19.4 | 79 | SW | 6 | 2.7 | ..... | ..... | 10ks | ..... | S | 0.09 | 2.3 | Cloudy | |
| Camp Grant, Arizona | 25.67 | 636.8 | 29.87 | 758.7 | 48 | 8.9 | 43 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | 26.67 | 677.4 | 30.16 | 766.1 | 39 | 3.9 | 73 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.27 | 692.6 | 29.84 | 757.9 | 42 | 5.6 | 83 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Cape Hatteras, N. Carolina | 30.16 | 766.1 | 30.13 | 766.1 | 52 | 11.1 | 86 | NE | 14 | 6.3 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Cape Henry, Virginia | 30.12 | 765.0 | 30.15 | 765.8 | 52 | 11.1 | 73 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 30.16 | 766.1 | 30.18 | 766.6 | 55 | 12.8 | 81 | NE | 9 | 4.0 | ..... | 8c | 0 | W | ..... | 0 | 0 | Fair | |
| Cape May, New Jersey | 30.12 | 765.0 | 30.15 | 765.8 | 50 | 10.0 | 79 | W | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 30.15 | 765.8 | 30.22 | 767.6 | 61 | 16.1 | 82 | NE | 3 | 1.3 | ..... | 2cs | Haze | W | Calm | 0 | 0 | Fair | |
| Cheyenne, Wyoming | 23.84 | 605.5 | 29.78 | 756.4 | 30 | — 1.1 | 78 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.18 | 741.2 | 29.85 | 758.2 | 61 | 16.1 | 88 | SW | 2 | 0.9 | ..... | ..... | 10s | ..... | SW | 0.25 | 6.3 | Threatening | |
| Cincinnati Ohio | 29.33 | 745.0 | 29.96 | 761.0 | 62 | 16.7 | 77 | SE | 4 | 1.8 | ..... | ..... | 10ks | ..... | SW | Inap. | Inap. | Cloudy | |
| Cleveland, Ohio | 29.29 | 744.0 | 29.99 | 761.7 | 62 | 16.7 | 72 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Concho, Texas | 27.94 | 709.7 | 29.58 | 751.3 | 63 | 17.2 | 62 | SW | ..... | ..... | 1 | 8k | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Corsicana, Texas | 29.38 | 746.2 | 29.82 | 757.4 | 72 | 22.2 | 90 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Davenport, Iowa | 29.16 | 740.7 | 29.78 | 756.4 | 63 | 17.2 | 89 | S | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Deadwood, Dakota | 25.17 | 639.3 | ..... | ..... | 34 | 1.1 | 90 | N | 1 | 0.4 | ..... | ..... | 10n | ..... | ..... | 0.70 | 17.8 | Heavy snow | |
| Denison, Texas | 29.03 | 737.3 | 29.79 | 756.7 | 71 | 21.7 | 85 | S | 8 | 3.6 | ..... | 5c | Haze | S | ..... | 0 | 0 | Fair | |
| Denver, Colorado | 24.64 | 625.8 | 29.86 | 758.4 | 34 | 1.1 | 34 | SW | 6 | 2.7 | ..... | 2c | 0 | W | ..... | 0 | 0 | Clear | |
| Detroit, Michigan | 29.29 | 744.0 | 29.94 | 760.5 | 60 | 15.6 | 82 | SW | 1 | 0.4 | ..... | ..... | 10s | ..... | SW | Inap. | Inap. | Cloudy | |
| Dodge City, Kansas | 27.22 | 691.4 | 29.51 | 749.5 | 40 | 4.4 | 56 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 29.07 | 738.4 | 29.74 | 755.4 | 60 | 15.6 | 82 | S | 7 | 3.1 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Duluth, Minnesota | 29.13 | 739.9 | 29.81 | 757.2 | 43 | 6.1 | 92 | NE | 10 | 4.5 | ..... | ..... | 10s | ..... | NE | 0.45 | 11.4 | Cloudy | |
| Eagle Pass, Texas | 29.02 | 737.1 | 29.72 | 754.9 | 74 | 23.3 | 86 | E | 8 | 3.6 | ..... | 10k | 0 | E | ..... | 0 | 0 | Cloudy | |
| Eastport, Maine | 29.87 | 758.7 | 29.94 | 760.5 | 39 | 3.9 | 91 | SW | 15 | 6.7 | ..... | ..... | 10s | ..... | SW | 0.02 | 0.5 | Cloudy | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 62 | 16.7 | 36 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.27 | 743.4 | 29.96 | 761.0 | 63 | 17.2 | 67 | SW | 6 | 2.7 | ..... | 10cs | 0 | W | ..... | 0.01 | 0.3 | Cloudy | |
| Escanaba, Michigan | 29.25 | 742.9 | 29.90 | 759.4 | 47 | 8.3 | 85 | E | 6 | 2.7 | ..... | ..... | Fog | ..... | ..... | 0.11 | 2.8 | Dense fog | |
| Florence, Arizona | 28.21 | 716.5 | 29.81 | 757.2 | 60 | 15.6 | 44 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | 24.04 | 610.6 | 30.04 | 763.0 | 40 | 4.4 | 32 | SE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.41 | 645.4 | ..... | ..... | 36 | 2.2 | 55 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.68 | 637.0 | 30.04 | 763.0 | 56 | 13.3 | 23 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.22 | 742.2 | 29.73 | 755.1 | 68 | 20.0 | 90 | SE | 5 | 2.2 | ..... | 0 | 5ks | ..... | S | 0 | 0 | Fair | |
| Fort Griffin, Texas | 28.55 | 725.2 | 29.78 | 756.4 | 63 | 17.2 | 83 | Calm | 0 | 0 | ..... | 2c | 2s | S | Calm | 0 | 9 | Fair | |
| Fort St. Michael, Alaska | 29.34 | 745.2 | 29.37 | 746.0 | 24 | — 4.4 | 100 | SW | 30 | 13.4 | ..... | ..... | 10s | ..... | E | Inap. | Inap. | Cloudy | |
| Fort Sill, Indian Territory | 28.48 | 723.4 | 29.54 | 750.3 | 61 | 16.1 | 77 | SE | 6 | 2.7 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Galveston, Texas | 29.82 | 757.4 | 29.86 | 758.4 | 73 | 22.8 | 95 | S | 11 | 4.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Grand Haven, Michigan | 29.27 | 743.4 | 29.90 | 759.4 | 62 | 16.7 | 88 | SE | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.07 | 1.8 | Light rain | |
| Indianapolis, Indiana | 29.18 | 741.2 | 29.94 | 760.5 | 61 | 16.1 | 82 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Indianola, Texas | 29.81 | 757.2 | 29.83 | 757.7 | 75 | 23.9 | 90 | SE | 16 | 7.2 | ..... | ..... | 10ks | ..... | SE | 0 | 0 | Threatening | |
| Jacksboro, Texas | 28.68 | 728.5 | 29.76 | 755.9 | 68 | 20.0 | 84 | SW | 8 | 3.6 | ..... | 4cs | 1s | SW | ..... | 0 | 0 | Cloudy | |
| Jacksonville, Florida | 30.14 | 765.5 | 30.16 | 766.1 | 69 | 20.6 | 80 | NE | 4 | 1.8 | ..... | 5k | 0 | W | ..... | 0.02 | 0.5 | Fair | |
| Keokuk, Iowa | 29.11 | 739.4 | 29.70 | 754.4 | 66 | 18.9 | 79 | SE | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Key West, Florida | 30.03 | 762.7 | 30.06 | 763.5 | 76 | 24.4 | 56 | E | 13 | 5.8 | ..... | 2k | 2s | E | E | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 30.15 | 765.8 | 30.17 | 766.3 | 50 | 10.0 | 86 | NE | 5 | 2.2 | ..... | 2c | 0 | W | ..... | 0 | 0 | Fair | |
| Knoxville, Tennessee | 29.09 | 738.9 | 30.09 | 764.3 | 57 | 13.9 | 87 | NE | 1 | 0.4 | ..... | 10cs | 0 | Calm | ..... | Inap. | Inap. | Cloudy | |
| La Crosse, Wisconsin | 28.99 | 736.3 | 29.71 | 754.6 | 52 | 11.1 | 73 | SE | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| La Mesilla, New Mexico | 25.98 | 659.9 | 30.12 | 765.0 | 35 | 1.7 | 52 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.34 | 745.2 | 29.66 | 753.4 | 74 | 23.3 | 81 | E | 4 | 1.8 | ..... | 10k | 0 | S | ..... | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 28.84 | 732.5 | 29.66 | 753.4 | 56 | 13.3 | 63 | N | 5 | 2.2 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.51 | 749.5 | 29.85 | 758.2 | 47 | 8.3 | 85 | N | 6 | 2.7 | ..... | 0 | 8s | ..... | SE | 0 | 0 | Cloudy | |
| Louisville, Kentucky | 29.42 | 747.3 | 29.96 | 761.0 | 63 | 17.2 | 72 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | S | 0.31 | 7.9 | Cloudy | |
| Lynchburg, Virginia | 29.45 | 748.0 | 30.13 | 765.3 | 55 | 12.8 | 68 | S | 2 | 0.9 | ..... | 0 | 8ks | ..... | Calm | 0 | 0 | Cloudy | |
| Marquette, Michigan | 29.20 | 741.7 | 29.89 | 759.2 | 49 | 9.4 | 85 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.06 | 1.5 | Cloudy | |
| Mason, Texas | 28.22 | 716.8 | 29.92 | 760.0 | 67 | 19.4 | 89 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | SE | 6 | 0 | Cloudy | |
| Memphis, Tennessee | 29.60 | 751.8 | 29.91 | 759.7 | 64 | 17.8 | 94 | N | 5 | 2.2 | ..... | ..... | 10n | ..... | NE | 1.30 | 33.0 | Light rain | |
| Milwaukee, Wisconsin | 29.12 | 739.6 | 29.83 | 757.7 | 56 | 13.3 | 94 | SE | 11 | 4.9 | ..... | 2ck | Fog | SW | ..... | 0.03 | 0.8 | Foggy | |
| Mobile, Alabama | 30.01 | 762.2 | 30.05 | 763.3 | 71 | 21.7 | 95 | SE | 8 | 3.6 | ..... | 0 | 8s | ..... | SE | 0 | 0 | Fair | |
| Montgomery, Alabama | 29.87 | 758.7 | 30.10 | 764.5 | 65 | 18.3 | 94 | SE | 6 | 2.7 | ..... | ..... | 10ks | ..... | SE | 1.22 | 31.0 | Cloudy | |
| Morgantown, West Virginia | 29.09 | 736.6 | 30.02 | 762.5 | 65 | 18.3 | 58 | S | 3 | 1.3 | ..... | 8c | 0 | SW | ..... | 0 | 0 | Fair | |
| Mt. Washington, N. H. | 23.64 | 600.4 | 30.00 | 762.0 | 30 | — 1.1 | 100 | NW | 66 | 29.5 | ..... | ..... | Fog | ..... | NW | 0 | 9 | Foggy | |
| Nashville, Tennessee | 29.48 | 748.8 | 30.09 | 762.0 | 65 | 18.3 | 84 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | S | 0.18 | 4.6 | Heavy rain | |
| New Haven, Connecticut | 29.95 | 760.7 | 30.06 | 763.5 | 61 | 16.1 | 61 | SW | 4 | 1.8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| New London, Connecticut | 30.01 | 762.2 | 30.06 | 763.5 | 54 | 12.2 | 67 | SW | 6 | 2.7 | ..... | Haze | 1s;hz | Calm | Calm | 0 | 0 | Hazy | |
| New Orleans, Louisiana | 29.94 | 760.5 | 29.99 | 761.7 | 74 | 23.3 | 86 | SE | 7 | 3.1 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Newport, Rhode Island | 29.98 | 761.5 | 30.03 | 762.7 | 49 | 9.4 | 78 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| New York, New York | 29.92 | 760.0 | 30.10 | 764.5 | 49 | 9.4 | 77 | SW | 6 | 2.7 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Clear | |
| Norfolk, Virginia | 30.11 | 764.8 | 30.17 | 766.3 | 51 | 10.6 | 72 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| North Platte, Nebraska | 26.86 | 682.2 | 29.44 | 747.8 | 37 | 2.8 | 71 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 29.49 | 749.0 | 29.62 | 752.3 | 46 | 7.8 | 92 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Omaha, Nebraska | 28.56 | 725.4 | 29.61 | 752.1 | 49 | 9.4 | 71 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Oswego, New York | 29.71 | 754.6 | 30.03 | 762.7 | 54 | 12.2 | 74 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| Pembina, Dakota | 28.90 | 734.0 | 29.73 | 755.1 | 45.5 | 7.8 | 84 | E | 3 | 1.3 | ..... | 10k | 0 | E | ..... | 0.08 | 2.0 | Cloudy | |
| Philadelphia, Pennsylvania | 30.09 | 764.3 | 30.14 | 765.5 | 50 | 10.0 | 72 | W | 8 | 3.6 | ..... | 5ck | Sm'e | W | Calm | 0 | 0 | Fair | |
| Phœnix, Arizona | 28.68 | 728.5 | 30.51 | 774.9 | 47 | 8.3 | 77 | W | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.50 | 444.5 | 29.71 | 754.6 | 6 | —14.4 | 52 | SW | 18 | 8.0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Pioche, Nevada | 23.84 | 605.5 | 29.61 | 752.1 | 32 | 0.0 | 90 | S | 3 | 1.3 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Pittsburg, Pennsylvania | 29.20 | 741.7 | 29.99 | 761.7 | 61 | 16.1 | 71 | SE | 3 | 1.3 | ..... | 10k | Sm'e | W | Calm | 0 | 0 | Cloudy | |
| Port Huron, Michigan | 29.27 | 743.4 | 29.91 | 759.7 | 59 | 15.0 | 76 | SW | 6 | 2.7 | ..... | ..... | 10ks | ..... | SW | 0.01 | 0.3 | Cloudy | |
| Portland, Maine | 29.90 | 759.4 | 29.95 | 760.7 | 46 | 7.8 | 77 | SW | 3 | 1.3 | ..... | 0 | Fog | ..... | W | 0 | 0 | Foggy | |
| Portland, Oregon | 29.59 | 751.6 | 29.69 | 754.1 | 49 | 9.4 | 93 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.16 | 4.1 | Cloudy | |
| Prescott, Arizona | 24.62 | 625.3 | 29.98 | 761.5 | 32 | 0.0 | 79 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Punta Rassa, Florida | 30.10 | 764.5 | 30.11 | 764.8 | 71 | 21.7 | 75 | E | 9 | 4.0 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Red Bluff, California | 29.26 | 743.2 | 29.61 | 752.1 | 48 | 8.9 | 85 | N | 2 | 0.9 | .. ..... | ..... | 10n | ..... | ..... | 0.01 | 0.3 | Light rain... | |
| Rochester, New York | 29.40 | 746.7 | 30.00 | 762.0 | 58 | 14.4 | 64 | W | 6 | 2.7 | ..... | ..... | 10s;hz | ..... | NW;Calm | 0 | 0 | Cloudy..... | |
| Roseburg, Oregon | 29.02 | 737.1 | 29.58 | 751.3 | 45.5 | 7.5 | 100 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy..... | |
| Sacramento, California | 29.53 | 750.0 | 29.61 | 752.1 | 52 | 11.1 | 79 | S | 8 | 3.6 | ..... | ..... | 10n | ..... | SE | Inap. | Inap | Light rain... | |
| St. Louis, Missouri | 29.29 | 744.0 | 29.84 | 757.9 | 63 | 17.2 | 83 | NW | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.23 | 5.8 | Light rain.. | |
| St. Marks, Florida | 30.12 | 765.0 | 30.13 | 765.3 | 68 | 20.0 | 84 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy..... | |
| St. Paul, Minnesota | 28.82 | 732.0 | 29.62 | 752.3 | 52 | 11.1 | 66 | E | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Salt Lake City, Utah | 25.46 | 646.7 | 29.79 | 756.7 | 36 | 2.2 | 61 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| San Antonio, Texas | 29.12 | 739.6 | 29.68 | 753.9 | 72 | 22.2 | 90 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| San Diego, California | 29.83 | 757.7 | 29.90 | 759.4 | 50 | 10.0 | 93 | N | 6 | 2.7 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Clear..... | |
| Sandusky, Ohio | 29.32 | 744.7 | 29.97 | 761.2 | 61 | 16.1 | 82 | SW | 7 | 3.1 | ..... | ..... | 10ks | ..... | W | 0 | 0 | Cloudy..... | |
| Sandy Hook, New Jersey | 30.08 | 764.0 | 30.11 | 764.8 | 56 | 13.3 | 69 | W | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| San Francisco, California | 29.53 | 750.0 | 29.59 | 751.6 | 51 | 10.6 | 83 | SE | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.51 | 13.0 | Light rain... | |
| Santa Fé, New Mexico | 23.15 | 588.0 | 29.69 | 754.1 | 32 | 0.0 | 40 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Savannah, Georgia | 30.09 | 764.3 | 30.19 | 766.8 | 65 | 18.3 | 78 | E | 2 | 0.9 | ..... | 5cs | 0 | W | ..... | 0 | 0 | Fair..... | |
| Shreveport, Louisiana | 29.66 | 753.4 | 29.87 | 758.7 | 73 | 22.8 | 95 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.10 | 2.5 | Cloudy..... | |
| Smithville, North Carolina | 30.16 | 766.1 | 30.20 | 767.1 | 55 | 12.8 | 87 | NE | 4 | 1.8 | ..... | 8cs | 0 | NW | ..... | 0 | 0 | Fair..... | |
| Springfield, Massachusetts | 29.84 | 757.9 | 29.97 | 761.2 | 55 | 12.8 | 56 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Stockton, Texas | 26.82 | 681.2 | 29.82 | 757.4 | 48 | 8.9 | 42 | Calm | 0 | 0 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair..... | |
| Thatcher's Island, Mass | 29.94 | 760.5 | 29.99 | 761.7 | 47 | 8.3 | 85 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Smoky..... | |
| Toledo, Ohio, | 29.28 | 743.7 | 29.94 | 760.5 | 63 | 17.2 | 78 | S | 2 | 0.9 | ..... | 0 | 5ks | ..... | S | 0 | 0 | Fair..... | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 46 | 7.8 | 85 | S | ..... | 1 | 0 | 0 | ..... | ..... | ..... | 0 | 0 | Clear..... | |
| Tybee Island, Georgia | 30.15 | 765.8 | 30.18 | 766.6 | 68 | 20.0 | 64 | E | 8 | 3.6 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair..... | |
| Umatilla, Oregon | 29.36 | 745.7 | ..... | ..... | 47 | 8.3 | 63 | SE | 4 | 1.8 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair..... | |
| Vicksburg, Mississippi | 29.71 | 754.6 | 29.96 | 761.0 | 74 | 23.3 | 90 | SW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.06 | 1.5 | Cloudy..... | |
| Virginia City, Montana | 24.09 | 611.9 | 29.57 | 751.1 | 28 | — 2.2 | 88 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.24 | 6.1 | Light snow. | |
| Visalia, California | 29.34 | 745.2 | 29.71 | 754.6 | 51 | 10.6 | 72 | E | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Washington, D. C. | 30.03 | 762.7 | 30.14 | 765.5 | 53 | 11.7 | 73 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Cloudy..... | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 40 | 4.4 | 82 | SE | ..... | ..... | 1 | 0 | 8ks | ..... | S | 0.05 | 1.3 | Threatening | |
| Wilmington, N. Carolina | 30.10 | 764.5 | 30.18 | 766.6 | 52 | 11.1 | 79 | NE | 2 | 0.9 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair..... | |
| Winnemucca, Nevada | 25.30 | 642.6 | 29.66 | 753.4 | 42 | 5.6 | 58 | NE | 8 | 3.6 | ..... | 8cs | 0 | ..... | SW | 0 | 0 | Fair..... | |
| Wood's Holl, Mass | 29.99 | 761.7 | 30.05 | 763.3 | 54 | 12.2 | 73 | SW | 8 | 3.6 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear..... | |
| Yankton, Dakota | 28.36 | 720.3 | 29.63 | 752.6 | 44 | 6.7 | 68 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear..... | |
| Yuma, Arizona | 29.66 | 753.4 | 29.83 | 757.7 | 52 | 11.1 | 65 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 6 | 0 | Clear..... | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| York Factory, B. A. | 30.17 | 766.3 | 30.23 | 767.8 | 21.0 | — 6.1 | 93 | NE | 1 | 0.4 | ..... | 3cs | Fog | NE | ..... | 0 | 0 | Foggy ..... | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 29.98 | 761.5 | 30.00 | 762.0 | 78 | 25.6 | 61 | E | 8.4 | 3.8 | ..... | 2k | 0 | SE | ..... | 0 | 0 | Fair..... | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.09 | 764.3 | 30.10 | 764.5 | 82 | 27.8 | 83 | Calm | 0 | 0 | ..... | 8c | 5s | Calm | NE | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.87 | 758.7 | 29.95 | 760.7 | 82 | 27.8 | ..... | NE | 12 | 5.4 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair..... | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | 29.96 | 761.0 | 29.96 | 761.0 | 82 | 27.8 | 87 | SE | ..... | ..... | 3 | ..... | 8ks | ..... | ..... | 0.190 | 4.83 | ½ cloudy.... | C. J. Hering. |
| Batavia, Dutch Guiana, S. A. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.22 | 640.6 | ..... | ..... | 68.5 | 20.3 | 90 | Calm | ..... | ..... | 0 | 5k | 4ks | ..... | ..... | 0.05 | 1.3 | ..... | Thomas Herran. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.98 | 761.5 | 51 | 10.6 | 48 | 8.9 | 85 | S | 3 | 1.3 | ..... | ..... | 10 | ..... | S | 0.2 | 5. | ..... | ..... | Heavy rain. | |
| Navy Yard, Pensacola, Fla. | 30.19 | 766.8 | 71 | 21.7 | 71 | 21.7 | 95 | E | 19 | 8.5 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Navy Yard, Portsmouth, N.H | 30.03 | 762.7 | 69 | 20.6 | 46 | 7.8 | 84 | W | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan | 29.89* | 759.2* | 64.8 | 18.2 | 60.5 | 15.8 | 91 | S | ..... | ..... | 6 | ..... | 10ks; n | ..... | SSW | 0.17 | 4.3 | ..... | ..... | Raining..... | |
| Adams. Panama | 29.94 | 760.5 | 84 | 28.9 | 84 | 28.9 | 83 | NW | ..... | ..... | 1 | ..... | 2 | ..... | NNW | ..... | ..... | Smooth | ..... | Fair ..... | |
| Alliance, Villefranche, France | 29.96‡ | 761.0‡ | ..... | ..... | 63 | 17.2 | 47 | NNE | ..... | ..... | 0-1 | ..... | 2 | ..... | Calm | ..... | ..... | Light | S | Pleasant..... | |
| Ashuelot. N. 31° 14', E. 122° 25' | 30.07 | 763.8 | 62 | 16.7 | 57 | 13.9 | 81 | E | ..... | ..... | 1 | ..... | 8 | ..... | Calm | ..... | ..... | ..... | ..... | Fair ..... | |
| Canonicus, New Orleans, La | 30.01 | 762 2 | 54 | 12.2 | 74 | 23.3 | 90 | ESE | ..... | ..... | 3 | ..... | 10 | ..... | N&W | ..... | ..... | ..... | ..... | Cloudy..... | |
| Colorado, New York, N. Y. | 30.07‡ | 763.8‡ | ..... | ..... | 54 | 12.2 | 62 | WSW | 12 | 5.4 | ..... | ..... | 2 | ..... | W | 0 | 0 | ..... | ..... | Hazy..... | |
| Constellation, N. 48° 32' W. 10° 56' | 29.52‡ | 749.8‡ | ..... | ..... | 55 | 12.8 | 93 | S | ..... | ..... | 5 | ..... | 2 | ..... | S | ..... | ..... | Mod'ate | S | Fair ..... | |
| Constitution, Havre, France | 29.74‡ | 755.4‡ | ..... | ..... | 54 | 12.2 | 93 | Calm | ..... | ..... | 0 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Rainy..... | |
| Despatch, Constantinople, Turkey | 29.88‡ | 758.9‡ | ..... | ..... | 63 | 17.2 | 62 | WSW | ..... | ..... | 4 | ..... | 5 | ..... | W | ..... | ..... | ..... | ..... | Fair ..... | |
| Franklin, Norfolk, Va | 30.27 | 768.8 | 61 | 16.1 | 50 | 10.0 | 79 | Calm | 0 | 0 | ..... | ..... | 8 | ..... | Calm | 0 | 0 | ..... | ..... | D. clouds..... | |
| Gettysburg Valetta, Malta | 30.02‡ | 762.5‡ | ..... | ..... | 76 | 24.4 | 86 | WSW | ..... | ..... | 2 | ..... | 8 | ..... | W | 0 | 0 | ..... | ..... | Cloudy..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.07 | 763.8 | 75 | 23.9 | 75 | 23.9 | 72 | NE | ..... | ..... | 4 | ..... | 2 | ..... | NE | ..... | ..... | Ground | NW | Clear..... | |
| Hartford, Montevideo, Uraguay | 29.83 | 757.7 | 65 | 18.3 | 67 | 19.4 | 79 | N | 6.6 | 3.0 | ..... | ..... | 5 | ..... | N | 0 | 0 | Smooth | ..... | Fair..... | |
| Marion, Smyrna, Turkey | 29.93 | 760.2 | 68 | 20.0 | 68 | 20.0 | 51 | SW | ..... | ..... | 2 | ..... | 10 | ..... | SW | Heavy | Heavy | Smooth | ..... | Cloudy ..... | |
| Michigan, Erie, Pa | 29.48 | 748.8 | 65 | 18.3 | 63 | 17.2 | 57 | W | ..... | ..... | 1 | ..... | 10 | ..... | W | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Monocacy. Shanghai, China | 30.01‡ | 762.2‡ | ..... | ..... | 56 | 13.3 | 87 | S | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| New Hampshire, Port Royal, S. C. | 30.38† | 771.6† | ..... | ..... | 63 | 17.2 | 89 | E | 6 | 2.7 | ..... | ..... | 8 | ..... | E | ..... | ..... | ..... | ..... | Cloudy..... | |
| Omaha, Hampton Roads, Va | 30.19* | 766.8* | 55 | 12.8 | 52 | 11.1 | 73 | SW | 1 | 0.4 | ..... | ..... | 2 | ..... | SW | 0 | 0 | ..... | ..... | Bright ..... | |
| Onward, Callao, Peru | 30.00† | 762.0† | ..... | ..... | 69 | 20.6 | 90 | SE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee. N. 25° 20', W. 84° 45' | 30.08‡ | 764.0‡ | ..... | ..... | 76 | 24.4 | 91 | E | ..... | ..... | 6 | ..... | 2 | ..... | E | ..... | ..... | Rough | E | Clear..... | |
| Palos, Shanghai, China | 30.08* | 764.0* | 66 | 18.9 | 55 | 12.8 | 87 | SSE | ..... | ..... | 2 | ..... | 3 | ..... | SE | ..... | ..... | ..... | ..... | Pleasant..... | |
| Pensacola, N. 37° 07', W. 145° 00' | 30.39 | 771.9 | 55 | 12.8 | 53 | 11.7 | 86 | WNW | 17 | 7.6 | ..... | ..... | 10 | ..... | ..... | 0.04 | 1.0 | Mod'ate | NW | Cloudy..... | |
| Plymouth, Hampton Roads, Va | 30.15‡ | 765.8‡ | ..... | ..... | 58 | 14.4 | 70 | SW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear ..... | |
| Powhatan, Norfolk, Va | 30.15‡ | 765.8‡ | ..... | ..... | 54 | 12.2 | 80 | E | 7.4 | 3.3 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | Pleasant..... | |
| Ranger. Amoy, China | 30.04* | 763.0* | ..... | ..... | 77 | 25.0 | 86 | SSE | ..... | ..... | 1 | ..... | 0? | ..... | ..... | ..... | ..... | Smooth | ..... | D. clouds?... | |
| Rio Bravo, Brownsville, Texas | 29.77 | 756.1 | 75 | 23.9 | 74 | 23.3 | 95 | SE | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Cloudy..... | |
| Santee, Annapolis, Md | 30.13‡ | 765.3‡ | ..... | ..... | 55 | 12.8 | 68 | S | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Saratoga, Washington, D. C. | 30.09 | 764.3 | 59 | 15.0 | 59 | 15.0 | 94 | SW | ..... | ..... | 2 | ..... | 2 | ..... | NE | 0 | 0 | ..... | ..... | Clear ..... | |
| St. Louis, League Island, Pa | 30.06 | 763.5 | 62 | 16.7 | 52 | 11.1 | ?? | SW | 12 | 5.4 | ..... | ..... | 5 | ..... | NW | 0 | 0 | ..... | ..... | Fair..... ..... | |
| Supply, Havre, France | 29.85 | 758.2 | 62 | 16.7 | 62 | 16.7 | 72 | WSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Swatara, N. 21° 15', W. 85° 05' | 29.96‡ | 761.0‡ | ..... | ..... | 79 | 26.1 | 86 | ENE | ..... | ..... | 5 | ..... | 5 | ..... | N&E | ..... | ..... | Smooth | ..... | Fair ..... | |
| Tennessee, N. 20° 19', E. 38° 59' | 29.90* | 759.4* | 83 | 28.3 | 82 | 27.8 | 67 | NNW | 4 | 1.8 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Moda'te | NNW | D. clouds..... | |
| Trenton, Villefranche, France | 29.92‡ | 760.0‡ | ..... | ..... | 66 | 18.9 | 59 | E | ..... | ..... | 0-1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Tuscarora, N. 16° 30', W. 98° 55' | 29.68 | 753.9 | 76 | 24.4 | 77 | 25.0 | 86 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Vandalia, Villefranche, France | 29.98‡ | 761.5‡ | ..... | ..... | 62 | 16.7 | 77 | ESE | ..... | ..... | 1 | ..... | 2 | ..... | SE | ..... | ..... | ..... | ..... | Clear..... | |
| Wabash, Boston, Mass | 30.03‡ | 762.7‡ | ..... | ..... | 51 | 10.6 | 65 | W | 7 | 3.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear ..... | |
| Wyoming, N. 48° 26', W. 18° 48' | 29.36*† | 745.7*† | ..... | ..... | 66 | 18.9 | 50 | W | ..... | ..... | 5-6 | ..... | 2 | ..... | ..... | ..... | ..... | Rough | W | D clouds..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
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| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable; the position given is that at noon, local time, instead of that at 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | Character. | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Panama, Nanaimo, B. C. | | | 29.76* | 755.9* | | | | NW | | | 1 | | 10 | | | | | | Capt. Cobb. |
| S. S. City of Peking. N. 36° 26′, E. 155° 16′ | | | 30.47† | 773.9† | 50 | 10.0 | 72 | WSW | 9.2 | 4.1 | | | 1 | | SW | Smooth | Calm | Blue sky | Capt. Seabury. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Tokio, N. 35° 41′, W. 151° 50′ | | | | | 55 | 12.8 | | N | | | 6 | | 10 | | NNE | Long | NE | D. clouds | Capt. Dearborn. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, N. 41° 30′, W. 60° 17′ | | | 29.96† | 761.0† | 51 | 10.6 | 93 | NE | | | 4 | | 5c | | NE | Mod'ate | E | Fair | Capt. W. H. Thompson. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Aneroid.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic | | | | | | | | | | | | | | | | | | | |
| S. S. Gaelic, Yokohama, Japan | | | 29.57† | 751.1† | 70 | 21.1 | ?? | N | | | 4 | | k | | | Smooth | | Squally | Capt. John Metcalf. |
| S. S. Oceanic, N. 24° 47′, E. 119° 19′ | | | 29.75 | 755.6 | 67 | 10.4 | ?? | Var. | | | 1 | | 10 | | | Smooth | | D. clouds | Capt. W. H. Kidley. |
| | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andre ssen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | Character | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, Philadelphia, Pa | | | 30.13* | 765.3* | 52 | 11.1 | ?? | SW | | | 1 | | 2 | | NW | | | Cloudy† | Captain Sargent. |
| S. S. Ohio, N. 39° 17′, W. 71° 24′ | | | 30.12 | 765.0 | 51 | 10.6 | ?? | E | | | 2 | | 2 | | E | Mod'ate | E | Clear | Captain Morrison. |
| S. S. Pennsylvania, Liverpool | | | 29.61† | 752.1† | 62 | 16.7 | 94 | SE | | | 2 | | 4 | | SE | | | Clear | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for elevation; instrumental error not known. †Corrected for temperature and elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
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**ALLAN LINE MARINE SERIES.**

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| S. S. Scandinavian | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.)**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Mt. Desert Island, Maine | | | 29.94 | 760.5 | 45 | 7.2 | 76 | SW | 4 | 1.8 | | | Fog | | | | | Foggy | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.70 | 754.4 | 14 | —10.0 | 89 | SW | 0.8 | 0.4 | | 0 | 2k | | E | | | Clearing | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assq.,) Chief Signal Officer, U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 20, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.18 | 766.6 | 65.5 | 18.6 | 86 | NE | ..... | ..... | 7 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Dr. Ollive. |
| Nemours | ..... | ..... | 30.16 | 766.0 | 71.6 | 22.0 | 50 | NW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair. | Michel. |
| Algiers | ..... | ..... | 29.95 | 760.8 | 71.6 | 22.0 | 69 | W | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair. | Towiliere. |
| La Calle | ..... | ..... | 29.89 | 759.1 | 68.0 | 20.0 | 77 | NNW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Boulangeot. |
| Tunis | ..... | ..... | 29.89 | 759.2 | 76.6 | 24.8 | 56 | E | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Jacques. |
| Sfax | ..... | ..... | 29.98 | 761.5 | 73.4 | 23.0 | ..... | ENE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Gau. |
| Saida | ..... | ..... | 30.16 | 766.0 | 71.4 | 21.9 | ..... | NW | ..... | ..... | 1 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Herbin. |
| Tebessa | ..... | ..... | 29.96 | 761.0 | ..... | ..... | ..... | WSW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Watrin. |
| Geriville | ..... | ..... | 30.18 | 766.6 | 68.4 | 20.2 | 74 | N | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Lemaillot. |
| Laghouat | ..... | ..... | 30.10 | 764.4 | 78.8 | 26.0 | 24 | NW | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Bertrand. |
| Biskra | ..... | ..... | 29.99 | 761.8 | 89.6 | 32.0 | 29 | NW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.29 | 743.9 | 29.83 | 757.6 | 63.3 | 17.4 | 50 | SW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | ..... |
| Cracow, I. R. Observatory | 29.10 | 739.0 | 29.85 | 758.2 | 59.4 | 15.2 | 56 | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir |
| Eperies | 28.94 | 735.1 | 29.80 | 757.0 | 60.1 | 15.6 | 59 | NW | ..... | ..... | 1 | ..... | 9k;s | ..... | ..... | 0.165 | 4.20 | ..... | Dr. Wierzbiski. |
| Gratz | 28.60 | 726.4 | 29.82 | 757.5 | 61.3 | 16.3 | 65 | SW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Julius Mikolik. |
| Hermannstadt | 28.36 | 720.4 | 29.75 | 755.7 | 60.6 | 15.9 | 49 | WNW | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0.075 | 1.90 | ..... | Andreas Rospini. |
| Kremsmünster | 28.45 | 722.5 | 29.76 | 755.9 | 59.7 | 15.4 | 50 | NE | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Prof. Reissenberg |
| Lemberg | 28.84 | 732.5 | 29.81 | 757.1 | 57.6 | 14.2 | 74 | NW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner |
| Pola | 29.80 | 757.0 | 29.91 | 759.8 | 63.0 | 17.2 | 59 | SE | ..... | ..... | 2 | ..... | 10ks | ..... | ..... | 0.008 | 0.2 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.39 | 746.5 | 29.85 | 758.2 | 58.3 | 14.6 | 77 | N | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.169 | 4.3 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.56 | 750.8 | 29.84 | 757.8 | 62.2 | 16.8 | 69 | ..... | ..... | ..... | ..... | ..... | 6 | ..... | ..... | 0.106 | 2.70 | ..... | Karl Stancel. |
| Trieste | 29.81 | 757.2 | 29.91 | 759.8 | 60.1 | 15.6 | 77 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | P. Busin. |
| Vienna | 29.10 | 739.1 | 29.80 | 756.8 | 64.2 | 17.9 | 56 | SE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.19 | 716.1 | 29.66 | 753.3 | 62.6 | 17.0 | 54 | SSE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.677 | 17.2 | ..... | Prof. M. Passau. |
| Brussels | 29.39 | 746.6 | 29.59 | 751.5 | 65.7 | 18.7 | 61 | SSE | ..... | ..... | 2 | ..... | 10 | ..... | SSE | 0.154 | 3.9 | Light rain | Royal Observatory. |
| Furnes | 29.52 | 749.7 | 29.54 | 750.3 | 64.2 | 17.9 | 72 | SSE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0.047 | 1.2 | ..... | M. E. de Cae. |
| Maeseyck | 29.56 | 750.7 | 29.68 | 753.9 | 65.5 | 18.6 | 64 | ESE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4? feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.58 | 751.3 | 29.68 | 753.9 | 44.2 | 6.8 | ..... | SE | 16 | 7.2 | ..... | ..... | ..... | ..... | ..... | 0.110 | 2.79 | Dense fog | W. B swell. |
| Ardrossan | 29.47 | 748.5 | 29.48 | 748.8 | 52 | 11.1 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.46 | 748.3 | 55.9 | 13.3 | ..... | SE | 9 | 4.0 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.49 | 749.0 | 52.4 | 11.3 | ..... | SSE | 4 | 1.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 29.39 | 746.5 | 60.4 | 15.8 | ..... | SE | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | J. L. E. Dreyer. |
| Bradford, Yorkshire | 29.08 | 738.6 | 29.58 | 751.3 | 52.4 | 11.3 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.13 | 3.3 | Raining | J. McLandsborough. |
| Bridgetown, (Barbados) | ..... | ..... | 29.92 | 760.0 | 82.0 | 27.8 | ..... | NE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.51 | 749.5 | 57.0 | 13.9 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | H. Todd. [H.C. |
| Cardington | ..... | ..... | 29.50 | 749.3 | 52.6 | 11.4 | ..... | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | John McLaren. |
| Chatham, School M. E. | 29.35 | 745.5 | 29.48 | 748.8 | 56.7 | 13.7 | ..... | S | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | Q. M. Serg., Geo. Stuart, R. E. |
| Dartmoor | 28.04 | 712.2 | 29.48 | 748.8 | 52.4 | 11.3 | ..... | S | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | Fine | Alexander Watt. |
| Donaghadee | 29.44 | 747.8 | 29.47 | 748.5 | 52 | 11.1 | ..... | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy | J. Mac Gowan. |
| Dover | 29.45 | 748.0 | 29.48 | 748.8 | 53 | 11.7 | ..... | E | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | Raining | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.48 | 748.8 | 44.2 | 6.8 | ..... | S | 2.4 | 1.1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Thomas Mackereth. |
| Falmouth, Observatory | 29.23 | 742.4 | 29.46 | 748.3 | 53.3 | 11.8 | ..... | SSE | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | Foggy | The Staff. |
| Fort Napier, (Natal) | 27.81 | 706.4 | 30.02 | 762.5 | 71.4 | 21.9 | ..... | NE | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G.Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.73 | 755.1 | 29.96 | 761.0 | 83.0 | 28.3 | ..... | Calm | ..... | ..... | 0 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's College | ..... | ..... | 29.32 | 744.7 | 56 | 13.3 | ..... | S | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Showery | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.12 | 765.0 | 30.18 | 766.6 | 71.2 | 21.8 | ..... | W | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | Corpl. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.29 | 744.0 | 29.50 | 749.3 | 51.8 | 11.0 | ..... | ENE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | D. G. Maclean. |
| Great Yarmouth | 29.56 | 750.8 | 29.56 | 750.8 | 49 | 9.4 | ..... | SE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Foggy | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.31 | 744.5 | 29.48 | 748.8 | 52.1 | 11.2 | ..... | WNW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | The Staff, for G. B. Airy. |
| Guernsey | 29.30 | 744.2 | 29.52 | 749.8 | 57 | 13.9 | ..... | SSE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 29.47 | 748.5 | 60 | 15.6 | ..... | SE | ..... | ..... | 4 | ..... | 2c | ..... | ..... | 0.05 | 1.3 | Fine | M. P. Moyle. |
| Holyhead | 29.44 | 747.8 | 29.49 | 749.0 | 56 | 13.3 | ..... | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Misty | John Tilston. |
| Jersey | 29.28 | 743.7 | 29.57 | 751.1 | 53.8 | 12.1 | ..... | SSW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | Blank | Blank | D. clouds | J. Fisher. |
| Kew, Observatory | ..... | ..... | 29.50 | 749.3 | 52.0 | 11.1 | ..... | W | 8 | 3.6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Heavy rain | The Staff. |
| Kingstown | 29.46 | 748.3 | 29.49 | 749.0 | 52 | 11.1 | ..... | SE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.49 | 749.0 | 51.7 | 10.9 | ..... | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.86 | 758.4 | 29.94 | 760.5 | 67.4 | 19.7 | ..... | E | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Sgt. Fred. Travis, A. H. |
| Nairn | 29.49 | 749.0 | 29.58 | 751.3 | 54 | 12.2 | ..... | ENE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 30.10 | 764.5 | 73.8 | 23.2 | ..... | NE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.32 | 744.7 | 29.50 | 749.3 | 54.0 | 12.2 | ..... | Calm | ..... | ..... | 0 | ..... | 10n | ..... | SE | 0.628 | 15.95 | Raining | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 28.98 | 736.1 | 29.49 | 749 0 | 50.0 | 10.0 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.52 | 749.8 | 51 | 10.6 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Mr. Lucas. |
| Plymouth | 29.42 | 747.3 | 29.50 | 749.3 | 55.3 | 12.9 | ..... | SSE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | John Merrifield. |
| Roche's Point | 29.33 | 745.0 | 29.38 | 746.2 | 55 | 12.8 | ..... | SSE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | Showery | W. Kennedy. |
| Saint Ann's Head | 29.30 | 744.2 | 29.46 | 748.3 | 53 | 11.7 | ..... | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | John C. Walker. |
| Sandwick Manse, (Orkneys.) | ..... | ..... | 29.71 | 754.6 | 46.1 | 7.8 | ..... | SE | 27 | 12.1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Foggy | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.84 | 757.9 | 60.0 | 15.6 | ..... | SSW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | Blank | Blank | D. clouds | Sergt. W. H. Lyne. |
| Sheffield | 29.22 | 742.2 | 29.50 | 749.3 | 54.2 | 12.3 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.59 | 15.0 | Raining | W. F. Cooper. |
| Silloth Rectory | 29.45 | 748.0 | 29.48 | 748.8 | 52.3 | 11.3 | 93 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.885 | 22.48 | Overcast | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.11 | 739.4 | 29.51 | 749.5 | 52.9 | 11.1 | ..... | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 29.51 | 749.5 | 54 | 12.2 | ..... | SSE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded | John Sutherland. |
| Stratfield Turgiss | 29.31 | 744.5 | 29.53 | 750.0 | 50.9 | 10.5 | ..... | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Rev. C. H. Griffith, F.M |
| Thurso | ..... | ..... | 29.64 | 752.8 | 46 | 7.8 | ..... | SSE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 29.51 | 749.5 | 58 | 14.4 | ..... | S | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 29.82 | 757.4 | 53.1 | 11.7 | ..... | SSE | 12 | 5.4 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | D. clouds | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.92 | 760.0 | 68.0 | 20.0 | 88 | SE | ..... | ..... | 2 | ..... | 10n | ..... | ..... | 0 | 0 | Hazy | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.78 | 756.4 | 29.96 | 761.1 | 79.0 | 26.1 | 66 | SE | 9.5 | 4.2 | ..... | 2 | 3 | ..... | SE | 0 | 0 | Fine | C. Meldrum. |
| Melbourne, Observatory | 29.98 | 761.5 | 30.07 | 763.8 | 60.0 | 15.6 | 91 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Dull | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft, or 670.6 m.

| Marine Series. Vessels. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Algeria, N. 41° 0', W. 57° 50' | ..... | ..... | 29.86 | 758.4 | 47 | 8.3 | ..... | NNW | ..... | ..... | 5 | ..... | 6 | ..... | ..... | 15* | SE; NE | D. clouds | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. C. Prehn. |
| S. S. Naid, N. 43° 15' W. 45° 5' | ..... | ..... | 29.26 | 743.2 | 62 | 16.7 | ..... | S | ..... | ..... | 6 | ..... | 6 | ..... | ..... | 6 | Confused | D. clouds | Capt. J. Smith. [R. |
| S. S. Peruvian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Longley. |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 1—10 | CLOUDS. Amount. Low'r 1—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | | | | | | | | | | | | | | | | | | | Mr. Ansart. |
| San José | 26.22 | 666.0 | | | 71.6 | 22.0 | 89 | SE | | | 2 | 1c | 5ks | | NE | 0 | 0 | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.89 | 759.1 | 29.93 | 760.3 | 54.5 | 12.5 | 72 | SE | | | 2 | | 4 | | | | | | |
| Fanöe | 29.83 | 757.6 | 29.85 | 758.1 | 56.8 | 13.8 | 65 | ESE | | | 6 | | 1 | | | | | | |
| Godthaab, (Greenland) | 29.54 | 750.4 | 29.59 | 751.5 | 33.6 | 0.9 | 79 | Calm | | | 0 | | 10 | | | | | | |
| Stykkisholm, (Iceland) | 29.49 | 749.1 | 29.54 | 750.2 | 40.8 | 4.9 | 90 | SE | | | 6 | | 8 | | | | | | |
| Thorshavn, (Faröe) | 29.73 | 755.2 | 29.77 | 756.1 | 46.2 | 7.9 | 93 | ESE | | | 4 | | 10 | | | | | Raining | |
| Vestervig | 29.71 | 754.5 | 29.87 | 758.8 | 57.2 | 14.0 | 87 | E | | | 2 | | 6 | | | | | Foggy | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.11 | 739.3 | 29.66 | 753.3 | 59.0 | 15 | 72 | NW | | | 1 | | 10 | | N | 0.106 | 2.7 | Covered | Collignon, Director. |
| Amiens, Normal School | | | | | | | | | | | | | | | | | | | Bonvarne, Director. |
| Avignon, Normal School | 29.69 | 754.2 | 29.77 | 756.2 | 56.8 | 13.8 | 93 | SE | | | 3 | | 10 | | SE | 0.339 | 8.6 | Raining | Mr. Giraud, Director |
| Bar-sur-Seine | 29.16 | 740.6 | 29.70 | 754.3 | 60.4 | 15.8 | 67 | SW | | | 1 | | 10n | | SW | 0.008 | 0.2 | Covered | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 58.8 | 14.9 | 66 | W | | | 3 | | 10 | | W | 0.315 | 8.00 | Covered | Normal School. |
| Besançon | 28.85 | 732.8 | 29.71 | 754.7 | 65.5 | 18.6 | 67 | S | | | 3 | | 8 | | SW | 0.059 | 1.5 | Very cloudy | Normal School. |
| Bourg-en-Bresse | 28.84 | 732.6 | 29.80 | 756.8 | 56.1 | 13.4 | 84 | S | | | 2 | | 10n | | S | | | Raining | Normal School. |
| Bourges, Normal School | 29.27 | 743.4 | 29.82 | 757.3 | 57.6 | 14 2 | 85 | SSW | | | 3 | | 5 | | SW | 0.04 | 1. | Partly cl'dy | A. Wagner, Director. |
| Brest, Naval Observatory | 29.25 | 743.0 | 29.47 | 748.6 | 54.5 | 12.5 | 74 | SW | | | 4 | | 9 | | SW | 0.226 | 5.75 | Squally | The Staff. |
| Carcassonne, Normal School | 29.48 | 748.8 | 29.89 | 759.3 | 55.0 | 12.8 | 73 | W | | | 4 | | 10 | | W | 0.16 | 4. | Covered | Vateau, Director. |
| Caen | | | | | | | | | | | | | | | | | | | Normal School. |
| Chartres, Normal School | 29.06 | 738.2 | 29.63 | 752.6 | 51.4 | 10.8 | 86 | W | | | 3 | | 10 | | SW | 0.232 | 5.9 | Covered | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.35 | 745.5 | 29.66 | 753.4 | 60.4 | 15.8 | 66 | SE | | | 3 | | 5ck | | S | 0.079 | 2.0 | Cloudy | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.38 | 720.8 | 29.72 | 754.8 | 54.9 | 12.7 | 70 | SE | | | 2 | | 10 | | SW | | | Covered | Alluard, Director. |
| Commercy, Normal School | 28.82 | 732.1 | 29.67 | 753.6 | 63.7 | 17.6 | 84 | ESE | | | 2 | | 5 | | ESE | 0 | 0 | Cloudy | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.70 | 729.0 | 29.84 | 758.0 | 54.5 | 12.5 | 87 | SE | | | 2 | | 10 | | SE | | | Raining | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 29.52 | 749.7 | 29.72 | 755.0 | 59.0 | 15.0 | 70 | SSW | | | 6 | | 8 | | SSW | 0.382 | 9.7 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.40 | 746.7 | 29.71 | 754.5 | 53.2 | 11.8 | 93 | SW | | | 6 | | 8 | | SW | 0.217 | 5.5 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.88 | 733.5 | 29.79 | 756.6 | 62.2 | 16.8 | 59 | SE | | | 3 | | 2 | | NE | 0.016 | 0.4 | Slightly cl'dy | Youdez, Director. |
| Lorient, Naval Observatory | 29.46 | 748.3 | 29.56 | 750.8 | 56.8 | 13.8 | 80 | S | | | 5 | | 8 | | S | 0.350 | 8.9 | ¾ covered | T. Carré, Director. |
| Mâcon, Normal School | 29.04 | 737.5 | 29.67 | 753.7 | 58.1 | 14.5 | 91 | WSW | | | 2 | | 10 | | | 0 | 0 | Covered | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | 28.65 | 727.7 | 29.67 | 753.5 | 63.3 | 17.4 | 68 | SW | | | 4 | | 5 | | SW | 0.04 | 2. | Cloudy | Normal School. |
| Nismes, Normal School | 29.60 | 751.7 | 29.80 | 756.9 | 55.8 | 13.2 | 77 | S | | | 2 | | 5 | | N | 0.51 | 13. | Cloudy | Boyer, Director. |
| Orleans, Normal School | 29.45 | 748.1 | 29.83 | 757.7 | 65.3 | 18.5 | 66 | S | | | 2 | | 10 | | | 0.24 | 6. | Covered | Bernard, Director. |
| Paris, Observatory | 29.39 | 746.6 | 29.63 | 752.6 | 57.0 | 13.9 | 68 | SW | | | 1 | | 10 | | SW | 0.165 | 4.19 | Covered | National Observatory. |
| Privas | 28.75 | 730.2 | 29.81 | 757.1 | 59.9 | 15.5 | 63 | SSE | | | 2 | | 10 | | SSE | 0 | 0 | Covered | Normal School |
| Puy de Dome (Summit) | | | | | | | | | | | | | | | | | | | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.71 | 754.6 | 29.74 | 755.4 | 61.7 | 16.5 | 47 | SW | | | 6 | | 5 | | SW | 0.28 | 7. | ½ covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.50 | 749.4 | 29.59 | 751.6 | 57.0 | 13.9 | 72 | WSW | | | 3 | | 5 | | W | 0.217 | 5.5 | Cloudy | F. Lucard, Director |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | M. H. Hercouet |
| Tarbes, Normal School | 28.91 | 734.2 | 29.97 | 761.1 | 64.4 | 18 | 62 | WSW | | | 2 | | 0 | | | 0.16 | 4. | Clear. | T. Hugues, Director |
| Villefranche | | | | | | | | | | | | | | | | | | | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.74 | 755.5 | 29.77 | 756.2 | 82.4 | 28 | | | | | | | | | | | | | |
| Lyons | | | 29.79 | 756.6 | 56.7 | 13.7 | 91 | | | | | | 10 | | | 0 | 0 | | L'Abbé Marchési. |
| Marseilles, Observatory | | | 29.80 | 756.9 | 57.2 | 14.0 | 89 | ESE | | | 1–2 | | 10 | | | 0.47 | 12. | Raining | M. Jeys. |
| Mont-Louis | 24.67 | 626.5 | 29.98 | 761.5 | 43.2 | 6.2 | 59 | ESE | 3.7 | 1.67 | | | 3 | | W | 1.327 | 33.70 | Rainy | The Staff. |
| Nice | | | 29.89 | 759.2 | 59.2 | 15.1 | 92 | E | | | 2 | | 10 | | | 0.343 | 8.7 | | Mr. Falguère. |
| Paris, Montsouris Obs'y | 29.35 | 745.4 | 29.62 | 752.4 | 56.1 | 13.4 | 72 | SW | | | 4 | | 10 | | SW | 0.181 | 4.6 | | Marié Davy, Director |
| Perpignan | | | 29.79 | 756.6 | 55.2 | 12.9 | 67 | NW | 13.3 | 5.93 | | | 10 | | SW | 0.563 | 14.3 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.30 | 566.4 | | | 32.9 | 0.5 | | W | | | 2 | | 7 | | | 0.961 | 24.4 | Snowy | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.47 | 748.6 | 29.64 | 752.8 | 58.1 | 14.5 | 65 | SW | | | 3 | | 10 | | | 0.130 | 3.3 | | E. Renou. |
| Toulouse, Observatory | 29.15 | 740.3 | 29.87 | 758.6 | 58.6 | 14.8 | 74 | W | | | 2 | | 5 | | | 0.776 | 19.70 | | The Staff. |
| Tours | 29.47 | 748.5 | 29.67 | 753.5 | 60.8 | 16.0 | 72 | SW | | | 3 | | 7 | | W | 0.890 | 22.6 | | C. Marquet. |
| Versailles, (near Paris) | | | 29.64 | 752.8 | 57.2 | 14.0 | 69 | NW | | | 2 | | 9 | | | 0.207 | 5.27 | Almost cov'd | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 29.84 | 758.0 | 29.87 | 758.7 | 54.1 | 12.3 | 89 | SE | 9.6 | 4.3 | | | 10 | | | 0.004 | 0.1 | Covered | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:59, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.94 | 735.0 | 29.76 | 756.0 | 67.6 | 19.8 | 64 | S | | | 5 | | 1 | S | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 29.72 | 754.8 | 29.89 | 759.1 | 60 1 | 15.6 | 57 | E | | | 1 | | 2 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.36 | 745.8 | 29.89 | 759.2 | 56.5 | 13.6 | 67 | NNW | | | 4 | | 3 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.26 | 743.1 | 29.67 | 753.5 | 69.4 | 20.8 | 46 | E | | | 1 | | 9 | | | 0.469 | 11.9 | | Albert Senz. |
| Cassel | 29.24 | 742.7 | 29.84 | 758.0 | 66.6 | 19.2 | 44 | SE | | | 3 | | 5 | E | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.51 | 749.6 | 29.67 | 753.7 | 68.7 | 20.4 | 48 | SE | | | 4 | | 8 | | | 0 | 0 | | Director Lose. |
| Emden | 29.70 | 754.3 | 29.73 | 755.2 | 65.3 | 18.5 | 37 | E | | | 3 | | 9 | | | 0 | 0 | | Prof. Prestel. |
| Frankfort on the Main | 29.49 | 749.1 | 29.85 | 758.1 | 68.4 | 20.2 | 33 | ESE | | | 3 | | 7 | | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 28.32 | 719.4 | 29.71 | 754.7 | 64.6 | 18.1 | 55 | SSW | | | 2 | | 6 | WNW | | 0.035 | 0.9 | Light clouds | M. Wilhelm. |
| Hamburg | 29.79 | 756.6 | 29.86 | 758.4 | 60.4 | 15.8 | 63 | ESE | | | 4 | | 0 | | | 0 | 0 | Very fine | Captain F. Hegemann. |
| Kiel | 29.85 | 758.1 | 29.86 | 758.5 | 54.9 | 12.7 | 65 | ENE | | | 2 | | 0 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.79 | 756.7 | 29.87 | 758.8 | 57.4 | 14.1 | 64 | N | | | 4 | | 2 | | | 0.051 | 1.3 | | Prof. E Luther. |
| Köslin | | | 29.89 | 759.1 | 48.4 | 9.1 | | S | | | 2 | | 4 | | | 0.028 | 0.7 | | H. Müller. |
| Leipsic, Observatory | 29.44 | 747.8 | 29.85 | 758.2 | 65.8 | 18.8 | 41 | ESE | | | 2 | | 5 | E | | 0.264 | 6.7 | | Prof. Bruhns. |
| Memel, Naval School | 29.86 | 758.4 | 29.91 | 759.6 | 55.9 | 13.3 | 52 | NNW | | | 4 | | 2c | | | | | | Reinbrecht von Skalweit. |
| Neufahrwasser | 29.91 | 759.6 | 29.92 | 760.0 | 46.0 | 7.8 | 83 | NNW | | | 3 | | 10 | | | 0.071 | 1.8 | | A. Lothes. |
| Posen | 29.64 | 752.9 | 29.93 | 760.3 | 52.0 | 11.1 | 80 | NW | | | 3 | | 10 | | | 0 | 0 | | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.15 | 740.5 | 29.68 | 753.9 | 67.8 | 19.9 | 54 | Calm | | | 0 | | 10 | | | 0.003 | 0.07 | Thunder storm. | Dr. Schur. |
| Stuttgart | 28.77 | 730.7 | 29.67 | 753.6 | 68.9 | 20.5 | 40 | E | | | 1 | | 5 | W | | 0.008 | 0.2 | Light rain | Prof. Schoder. |
| Treves, (Trier) | 29.06 | 738.0 | 29.57 | 751.1 | 68.0 | 20.0 | 51 | S | | | 6 | | 10 | | | 0.098 | 2.48 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.29 | 718.6 | 29.74 | 755.4 | 63.0 | 17.2 | 48 | SSE | 4 | 2 | | | 8ck | | SE | 0 | 0 | | Dr. Von Bebber. |
| Wustrow, Naval School | 29.93 | 760.2 | 29.97 | 761.2 | 54.5 | 12.5 | 67 | ENE | | | 2 | | 2 | | | 0 | 0 | | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.54 | 750.4 | 29.93 | 760.1 | 72.7 | 22.6 | | SW | | | 2.5 | | | | | | | Clear | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.79 | 756.8 | 29.84 | 758.0 | 79.3 | 26.3 | 75 | WSW | 31? | 13.9? | | | 9 | | | 0 | 0 | D. clouds | |
| Deesa | 29.36 | 745.6 | 29.82 | 757.3 | 98.4 | 36.9 | 24 | W | | | | | 5 | WNW | | 0 | 0 | D. clouds | |
| Bombay | 29.77 | 756.2 | 29.81 | 757.1 | 84.9 | 29.4 | 69 | WNW | 18 | 8.0 | | | | | | 0 | 0 | Blue sky | |
| Poona | 27.77 | 705.4 | 29.71 | 754.7 | 92.8 | 33.8 | 47 | W | | | | | 4 | W | | 0 | 0 | Dust-whirl | |
| Lahore | 28.98 | 736.2 | 29.70 | 754.4 | 95.7 | 35.4 | 21 | W | 3.6 | 1.6 | | | 6 | | | 0 | 0 | Cloudy | |
| Belgaum | 27.32 | 694.0 | 29.82 | 757.4 | 83.9 | 28.8 | 65 | W | 14 | 6.3 | | | 1 | | E | 0 | 0 | D. clouds | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.87 | 733.3 | 29.75 | 755.6 | 89.8 | 32.1 | 44 | Calm | 0.4 | 0.2 | | | | | | 0 | 0 | | |
| Agra | 29.20 | 741.6 | 29.74 | 755.5 | 99.6 | 37.6 | 26 | N | | | | | | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.71 | 729.3 | 29.72 | 754.9 | 96.5 | 35.8 | 26 | Calm | 3.1 | 1.4 | | | 4 | | SE | 0 | 0 | D. clouds | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.38 | 746.3 | 29.74 | 755.5 | 94.6 | 34.8 | 37 | Calm | 2 | 0.9 | | | 10 | | | 0 | 0 | Overcast | |
| Allahabad | 29.44 | 747.7 | 29.74 | 755.4 | 94.3 | 34.6 | 35 | Calm | 0.9 | 0.4 | | | 1 | | | 0 | 0 | D. clouds | |
| Patna | 29.56 | 750.8 | 29.73 | 755.2 | 98.2 | 36.8 | 22 | W | 1.3 | 0.6 | | | 6 | W | W | 0 | 0 | D. clouds | |
| Hazaribagh | 27.77 | 705.4 | 29.73 | 755.2 | 90.3 | 32.4 | 22 | WSW | 3.6 | 1.6 | | | 2 | | | 0 | 0 | | |
| Cuttack | 29.70 | 754.2 | 29.78 | 756.3 | 88.1 | 31.2 | 55 | S | 5.5 | 2.5 | | | | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.78 | 756.4 | 29.80 | 757.0 | 85.8 | 29.9 | 69 | SSW | 12 | 5.4 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.40 | 746.8 | 29.78 | 756.5 | 86.4 | 30.2 | 39 | NNW | 1.3 | 0.6 | | | 8 | W | | 0 | 0 | D. clouds | |
| Chittagong | 29.74 | 755.4 | 29.83 | 757.7 | 84.9 | 29.4 | 72 | SW | 5.8 | 2.6 | | | | | | 0 | 0 | Misty | |
| Sibsagar | 29.48 | 748.8 | 29.81 | 757.3 | 84.4 | 29.1 | 59 | N | 1.1 | 0.5 | | | 0 | | | 0 | 0 | Blue sky | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.43 | 722.0 | 29.76 | 755.8 | 94 | 34.4 | 18 | NE | 4.1 | 1.8 | | | | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. (0—10. | Clouds. Amount. Up'er (0—10) | Clouds. Amount. Low'r (0—10) | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.48 | 748.8 | 29.89 | 759.1 | 63.5 | 17.5 | 56 | SW | 1.3 | 0.6 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 29.76 | 755.9 | 29.87 | 758.6 | 64.8 | 18.2 | 50 | ESE | 11.2 | 5.0 | ..... | ..... | 9 | WSW | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.67 | 753.6 | 29.86 | 758.4 | 64.8 | 18.2 | 51 | SE | 3.1 | 1.4 | ..... | ..... | 3 | S | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.55 | 725.1 | 29.85 | 758.1 | 66.2 | 19.0 | 40 | NE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. Trinfini Carlo. |
| Milan | 29.34 | 745.1 | 29.85 | 758.1 | 68.0 | 20.0 | ..... | ENE | ..... | ..... | 1 | ..... | 6 | W | ..... | 0.606 | 15.4 | ..... | Prof. Schiaparelli. |
| Moncalieri | 28.98 | 736.2 | 29.89 | 759.1 | 52.9 | 11.6 | 82 | NNW | 3.8 | 1.7 | ..... | ..... | 10 | SW | ..... | 0.209 | 5.3 | ..... | Prof. P. F. Denza. |
| Mondovi | 27.99 | 710.9 | 29.89 | 759.1 | 51.6 | 10.9 | 87 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.67 | 753.5 | 29.89 | 759.1 | 58.8 | 14.9 | 94 | E | ..... | ..... | 4 | ..... | 10 | NNE | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.72 | 754.9 | 29.89 | 759.2 | 59.5 | 15.3 | 82 | SE | 6.9 | 3.1 | ..... | ..... | 10 | S | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.54 | 750.4 | 29.85 | 758.3 | 61.7 | 16.5 | 71 | SSW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.62 | 752.3 | 29.87 | 758.8 | 69.8 | 21.0 | 52 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Cav. F Meucci. |
| Leghorn | 29.84 | 758.0 | 29.93 | 760.1 | 66.4 | 19.1 | 66 | SW | 0.7 | 0.3 | ..... | ..... | 10 | NE | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 29.84 | 757.8 | 29.88 | 759.0 | 61.9 | 16.6 | 81 | E | 12.5 | 5.6 | ..... | ..... | 9 | S | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.35 | 720.2 | 29.91 | 759.6 | 60.8 | 16.0 | 64 | WSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.79 | 756.6 | 29.90 | 759 4 | 69.1 | 20.6 | 68 | SSE | ..... | ..... | 2 | ..... | 6 | S | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.75 | 755.7 | 29.93 | 760.1 | 70.5 | 21.4 | 48 | S | 15.0 | 6.7 | ..... | ..... | 10 | ..... | ..... | 0.043 | 1.1 | ..... | Prof. P. G. S. Ferrar |
| Naples, O. U | 29.79 | 756.6 | 29.99 | 761.7 | 69.1 | 20.6 | 66 | WSW | ..... | ..... | 4 | ..... | 4 | S | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Leccе | ..... | ..... | ..... | ..... | 66.6 | 19.2 | 53 | SE | 4.3 | 1.9 | ..... | ..... | 3 | ..... | ..... | 0.024 | 0.6 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.67 | 753.5 | 29.85 | 758.3 | 67.1 | 19.5 | 59 | SE | ..... | ..... | 2 | ..... | 8 | W | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.08 | 738.5 | 29.96 | 760.9 | 69.8 | 21.0 | 72 | SW | 0.7 | 0.3 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.67 | 753.5 | 29.92 | 759.9 | 63.7 | 17.6 | 64 | NE | 4.9 | 2.2 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.85 | 758.3 | 29.93 | 760.2 | 69.4 | 20.8 | 65 | E | ..... | ..... | 2 | ..... | 8 | SW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.43 | 747.6 | 29.99 | 761.7 | 64.9 | 18.3 | 67 | WSW | 1.3 | 0.6 | ..... | ..... | 5 | SW | ..... | 0.079 | 2.0 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nagasaki | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Tokei (Yeddo) | 29.55 | 750.6 | 29.62 | 752.3 | 54.5 | 12.5 | 85 | ESE | 3.3 | 1.5 | ..... | 0 | 0 | ..... | ..... | 0.080 | 2.03 | Clear. | The Observatory. |
| Tokei (Yeddo) University | 29.50 | 749.3 | 29.60 | 751.8 | 55 | 12.8 | 90 | SW | 4 | 1.8 | ..... | 1ck | ..... | ..... | ..... | 0.16 | 4.1 | Clear. | Prof. P. V. Veeder. |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 67.3 | 19.6 | 39 | NW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy... | L. Castillo, A. E. |
| Guadalajara | 25.04 | 636.0 | 30.04 | 763.0 | 56.3 | 15.5 | 61 | W | 0.9 | 0.4 | ..... | 0 | 8 | ..... | SW | 0 | 0 | Cloudy..... | Prof. L. Perez. |
| Guanajuato | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 64.8 | 18.2 | 53 | Calm | 0 | 0 | ..... | 5cs | 0 | SW | ..... | 0 | 0 | Hazy ..... | Prof. M. Leal. |
| Mexico | 23.19 | 586.9 | 30.06 | 763.6 | 62.4 | 16.9 | 42 | Calm | 0 | 0 | ..... | 1c | 0 | ..... | ..... | 0 | 0 | Hazy..... | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 62.1 | 16.7 | 44 | Calm | 0 | 0 | ..... | 0 | 8k | ..... | S | 0 | 0 | Cloudy..... | M. V. de Leon, M. E. |
| Puebla | 23.38 | 593.7 | 30.10 | 764.5 | 49.8 | 9.9 | 62 | E | 4.9 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy.. | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 29.87 | 758.7 | 29.88 | 759 0 | 72.5 | 22.5 | 79 | S | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Foggy ..... | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 29.85 | 758.2 | 29.88 | 758.8 | 77.9 | 25.5 | 80 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 59.0 | 15.0 | 33 | S | 0.9 | 0.4 | ..... | 10 | 0 | S | ..... | 0 | 0 | Overcast.... | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.32 | 592.3 | 30.06 | 763.4 | 50.0 | 10.0 | 37 | E | 0.4 | 0.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy ..... | P. Spina. [M.M. D. D |
| Morelia | 23.98 | 609.0 | ..... | ..... | 57.2 | 14 0 | 45 | Calm | 0 | 0 | ..... | 0 | 1 | ..... | W | 0 | 0 | Hazy ..... | M. Tena, F. L. Param. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,284.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.60 | 751.7 | 29.60 | 751.7 | 61.5 | 16.4 | ..... | ESE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.142 | 3.6 | ..... | |
| Groningen | 29.67 | 753.6 | 29.72 | 755.0 | 63.0 | 17.2 | ..... | S | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.094 | 2.4 | ..... | |
| Helder | 29.67 | 753.5 | 29.67 | 753.5 | 59.4 | 15.2 | ..... | E | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.106 | 2.7 | ..... | |
| Hellevoetsluis | 29.63 | 752.6 | 29.63 | 752.6 | 63.3 | 17.4 | 73 | ESE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.63 | 752.5 | 29.67 | 753.7 | 61.5 | 16.4 | 66 | SE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0.441 | 11.2 | Very cloudy | H. v d Brink. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instru'tal error and temperature. Inches. | Barometer. Corrected for instru'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.87 | 758.8 | 29.93 | 760.2 | 51.1 | 10.6 | 77 | W | 11.4 | 5.1 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Brône | 30.06 | 763.5 | 30.10 | 764.5 | 41.0 | 5.0 | 48 | NNE | 9 | 4 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.85 | 758.1 | 29.99 | 761.8 | 57.0 | 13.9 | 55 | ENE | 2 | 1 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 30.00 | 762.1 | 30.05 | 763.2 | 30.2 | — 1.0 | 65 | SW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | 0.181 | 4.6 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.05 | 763.2 | 30.24 | 768.1 | 61.2 | 16.2 | 89 | SW | 5.6 | 2.5 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.13 | 739.9 | 30.15 | 765.9 | 62.2 | 16.8 | 52 | WSW | 18.1 | 8.1 | ..... | ..... | 9 | WSW | ..... | 0.409 | 10.4 | ..... | Dr. A. M. R. dos Santos |
| Funchal, (Madeira) | 30.23 | 767.9 | 30.32 | 770.1 | 69.4 | 20.8 | 59 | SW | 1.8 | 0.8 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.84 | 758.0 | 30.21 | 767.2 | 59.4 | 15.2 | 82 | WSW | 22.4 | 10.0 | ..... | ..... | 10 | ..... | ..... | 0.626 | 15.9 | Raining | The Staff. |
| Ponta Delgada, (Azores) | 30.25 | 768.4 | 30.32 | 770.2 | 66.9 | 19.4 | 67 | W | 13.0 | 5.8 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.93 | 760.1 | 29.93 | 760.3 | 86.0 | 30.0 | ..... | SSE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 1 | ..... | Blue sky | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Rio Douro, S. 25° 58′, E. 32° 37′ | ..... | ..... | 30.13 | 765.2 | 80.6 | 27.0 | ..... | Calm | ..... | ..... | 0 | ..... | 6 | ..... | E | 1 | ..... | D. clouds | J. T. d'Oliveria, Com'd't. |
| Sado, Porto Praya, Cape Verde Islands | 30.07* | 763.8* | 30.08* | 764.1* | 88.2 | 31.2 | ..... | NNE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 2 | NNE | Blue sky | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.74 | 755.4 | 29.75 | 755.6 | ..... | ..... | ..... | NNW | ..... | ..... | 2 | ..... | 6 | ..... | NNW | 1 | ..... | D. clouds | F. Texeira da Silva, Com'd't. |
| Tejo, N. 22° 10′ E. 113° 32′ | ..... | ..... | 29.93 | 760.1 | 77.0 | 25.0 | ..... | E | ..... | ..... | 3 | ..... | 3k | ..... | E | 2 | E | ..... | F. J. Ferreina, dos Amas, Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.41 | 747.1 | 29.84 | 757.9 | 50.7 | 10.4 | 89 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.40 | 746.8 | 29.82 | 757.4 | 55.4 | 13.0 | 75 | Calm | 0 | 0 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Heavy clouds | Astronomical Obs. |
| Dorpat | 29.69 | 754.1 | 29.94 | 760.4 | 42.3 | 5.7 | 41 | NE | 13 | 6 | ..... | ..... | 1ck | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.82 | 757.5 | 29.84 | 757.9 | 42.3 | 5.7 | 32 | NNW | 22 | 10 | ..... | ..... | 3k | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.60 | 751.8 | 29.93 | 760.3 | 33.1 | 0.6 | 78 | N | 34 | 15 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Ch. Forsten. |
| Kieff | 29.10 | 739.1 | 29.72 | 754.8 | 63.3 | 17.4 | 57 | S | 13 | 6 | ..... | ..... | 7k;ks;c | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.78 | 756.4 | 29.86 | 758.2 | 63.7 | 17.6 | 51 | SSW | 9 | 4 | ..... | ..... | 4ks | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.85 | 758.3 | 29.87 | 758.8 | 63.7 | 17.6 | 80 | S | 4 | 2 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | Light clouds | Lagorio. |
| Moscow | 29.13 | 739.9 | 29.68 | 753.9 | 44.6 | 7.0 | 94 | S | 7 | 3 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | Raining | Meteorological Obs. |
| Lugan | 29.70 | 754.4 | 29.90 | 759.5 | 62.1 | 16.7 | 45 | SE | 22 | 10 | ..... | ..... | 8n | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Archangel | 29.41 | 747.1 | 29.43 | 747.6 | 29.8 | — 1.2 | 92 | W | 22 | 10 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.69 | 728.7 | 30.10 | 764.6 | 58.1 | 14.5 | 63 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.31 | 769.9 | 30.23 | 767.8 | 49.1 | 9.5 | 40 | ESE | 18 | 8 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Krotkowo* | 29.47 | 748.6 | 29.95 | 760.7 | 46.6 | 8.1 | 28 | SSW | 20 | 9 | ..... | ..... | 9ks | ..... | ..... | ..... | ..... | Light clouds | Cand. Fatjanow. |
| Kasan | 29.60 | 751.8 | 29.87 | 758.8 | 43.2 | 6.2 | 39 | SSW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.82 | 732.0 | 29.80 | 756.8 | 32.2 | 0.1 | 37 | N | 31 | 14 | ..... | ..... | 3ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 30.02 | 762.4 | 30.25 | 768.4 | 54.0 | 12.2 | 41 | NNE | 11 | 5 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.70 | 729.0 | 30.42 | 772.6 | 56.8 | 13.8 | 52 | Calm | 0 | 0 | ..... | ..... | 2c | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.26 | 743.1 | 29.78 | 756.3 | 52.7 | 11.5 | 92 | SW | 9 | 4 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.38 | 746.3 | 29.71 | 754.6 | 49.1 | 9.5 | 67 | S | 7 | 3 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 29.79 | 756.6 | 29.93 | 760.2 | 50.0 | 10.0 | 94 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Raining | Physical Observatory. |
| Nertchinsk | 27.91 | 708.9 | 30.02 | 762.4 | 35.6 | 2.0 | 45 | Calm | 0 | 0 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Vladivostock | 29.63 | 752.7 | 29.73 | 755.2 | 39.0 | 3.9 | 85 | SSE | 4 | 2 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 29.3 | — 1.5 | 66 | E | 2 | 1 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 892 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.69 | 754.2 | 29.80 | 756.9 | 68.5 | 20.3 | 37 | W | 10.7 | 4.80 | ..... | 0 | 1k | ..... | ..... | 0.051 | 1.29 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.76 | 755.8 | 29.81 | 757.2 | 71.2 | 21.8 | 47 | NW | 3.9 | 1.75 | ..... | 2 | 6 | W | ..... | 0.157 | 4.0 | Cloudy | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.95 | 684.6 | ..... | ..... | 53.6 | 12.0 | 83 | SW | 26.0 | 11.62 | ..... | ..... | 8 | ..... | ..... | 0.071 | 1.8 | Raining | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.76 | 705.0 | 29.97 | 761.2 | 59.7 | 15.4 | 59 | SW | 29.8 | 13.33 | ..... | 0 | 8 | ..... | ..... | 0.232 | 5.9 | Almost cov. | The Staff. |
| Murcia, Met. Obs'y | 29.80 | 756.9 | 29.95 | 760.6 | 77.4 | 25.2 | 37 | WNW | 4.5 | 2.00 | ..... | 4 | 5 | E | ..... | 0.071 | 1.80 | Cloudy | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.03 | 737.4 | 29.93 | 760.1 | 56.5 | 13.6 | 69 | W | 16.2 | 7.22 | ..... | ..... | 9 | ..... | ..... | 0.697 | 17.7 | Rainy | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 30.00 | 762.0 | 30.06 | 763.6 | 75.1 | 23.9 | 66 | ESE | 3.6 | 1.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J. |
| San Fernando, Naval Obs'y | 30.15 | 765.7 | 30.25 | 768.2 | 66.0 | 18.9 | 63 | W | 16.8 | 7.5 | ..... | 3 | 4 | W | W | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.88 | 759.0 | 29.97 | 761.3 | 79.5 | 26.4 | 63 | NE | 4.8 | 2.15 | ..... | 3cs | 1k | NE | NE | 0 | 0 | Clear | Leonardo de Tejeda, Chief of Engineers. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.



Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATION. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.05 | 763.3 | 30.09 | 764.3 | 31.6 | — 0.2 | ..... | N | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Umea | 30.11 | 764.7 | 30.16 | 766.0 | 33.8 | 1.0 | 58 | SE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.10 | 764 5 | 30.15 | 765.8 | 39.2 | 4.0 | 55 | E | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.95 | 760.8 | 30.13 | 765.3 | 46.6 | 8.1 | 34 | NE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0.008 | 0.2 | ..... | |
| Wisby | 29.93 | 760.3 | 29.99 | 761.8 | 48.6 | 9.2 | 27 | ENE | ..... | ..... | 7 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | 0 | 0 | ..... | |
| Upsala | 29.97 | 761.1 | 30.04 | 763.0 | 49.3 | 9.6 | 43 | N | 8.5 | 3.8 | ..... | ..... | 6 | ..... | ENE | 0 | 0 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.33 | 719.6 | 29.75 | 755.7 | 56.1 | 13.4 | 67 | NNE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered..... | The Observatory. |
| Zurich | 28.12 | 714.2 | 29.71 | 754.7 | 66.6 | 19.2 | 56 | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0.197 | 5.0 | Bright..... | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —4.7 mm.; Thermometer, +0.3 cent.; Relative Humidity, +10 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.89 | 759.3 | 66.2 | 19.0 | 56 | W | 4 | 2.0 | ..... | ..... | 7 | ..... | ..... | 0.079 | 2.0 | Raining..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanides. |
| Valona | ..... | ..... | 30.03 | 762.7 | 66.6 | 19.2 | ..... | W | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy..... | A. Bertrand. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.86 | 758.4 | 29.98 | 761.4 | 70.5 | 21.4 | 56 | N | ..... | ..... | 1 | ..... | 2c | ..... | ..... | 0 | 0 | D. clouds..... | Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, that the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.86 | 758.4 | 29.93 | 760.2 | 39.8 | 4.3 | 80 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | ..... | ..... | Clear..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.64 | 760.3 | 29.85 | 758.2 | 47 | 8.3 | ..... | E | 5 | 2.2 | ..... | ..... | 8s | ..... | W | 0 | 0 | Cloudy..... | W. R. Bigg. |
| *Chatham, N B | 29.88 | 758.9 | 29.94 | 760.5 | 43 | 6.1 | 77 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | ..... | ..... | Clear..... | G. A. Blair. |
| Charlottetown, P. E. Island. | 29.90 | 759.4 | 29.94 | 760.5 | 40 | 4.4 | 80 | W | 4 | 1.8 | ..... | ..... | 10s | ..... | ..... | 0.19 | 4.8 | Clear..... | G. A. Blair. |
| Cornwall, Ontario | 29.65 | 753.1 | 29.84 | 757.9 | 47.0 | 8.3 | 72 | E | ..... | ..... | 1 | 10cs | 0 | ..... | Calm | 0.196 | 4.83 | Cloudy..... | H. J. Cundall, C. E. |
| Dalhousie, N. B | 29.92 | 760.0 | 29.95 | 760.7 | 43 | 6.1 | 77 | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | Misty..... | James Smith, M. A. |
| Esquimault, B. C | 29.48 | 748.8 | 29.53 | 750.0 | 45.3 | 7.4 | 92 | NE | ..... | ..... | ..... | 9cs | 0 | ..... | ..... | 0 | 0 | Clear..... | H. A. Johnson. |
| *Father Point, Quebec | 29.93 | 760.2 | 29.95 | 760.7 | 39 | 3.9 | 77 | W | 8 | 3.6 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Cloudy..... | W. H. Revis. |
| Fredericton, N. B | 29.94 | 760.5 | 30.00 | 762.0 | 45.1 | 7.3 | 63 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | J. McWilliams. |
| *Fort Garry Manitoba | 28.94 | 735.1 | 29.77 | 756.1 | 44 | 6.7 | 84 | N | 4 | 1.8 | ..... | 5k | 5n | N | N | 0 | 0 | Cloudy..... | Prof. Harrison. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | James Stewart. |
| Granton, Ontario | 28.64 | 727.4 | 29.72 | 754.9 | 56 | 13.3 | 100 | SE | ..... | ..... | 1 | ..... | 10n | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| *Halifax, N. S | 29.81 | 757.2 | 29.95 | 760.7 | 41 | 5.0 | 96 | N | 4 | 1.8 | ..... | ..... | 10n | ..... | N | 0.57 | 14.5 | Cloudy..... | James Grant. |
| Hamilton, Ontario | 29.69 | 754.1 | 29.86 | 758.4 | 48.2 | 9.0 | 91 | E | ..... | ..... | 1 | 10cs | ..... | ..... | ..... | 0.024 | 0.61 | Cloudy..... | F. Allison, M. A. |
| Heart's Content, N. F | 29.80 | 756.9 | 29.82 | 757.4 | 32 | 0.0 | 84 | N | ..... | ..... | ..... | 0 | 8ks | ..... | ..... | 0.18 | 4.6 | ..... | Geo. Dickson, M. A. |
| *Kingston, Ontario | 29.49 | 749.0 | 29.82 | 757.4 | 49 | 9.4 | 69 | N | 2 | 0.9 | ..... | 8cs | 2s | Calm | Calm | Inap. | Inap. | Cloudy..... | E. Weedon. |
| Little Glace Bay, N. S | 29.87 | 758.7 | 29.91 | 759.7 | 34.5 | 1.4 | ..... | W | 4 | 1.8 | ..... | 8k | 0 | W | ..... | 0 | 0 | Cloudy..... | S. Woods, M. A. |
| *Montreal, Quebec | 29.70 | 754.4 | 29.90 | 759.4 | 46 | 7.8 | 80 | E | 6 | 2.7 | ..... | 10cs | 0 | ..... | ..... | 0 | 0 | Fair..... | C. H. Rigby. |
| *Parry Sound, Ontario | 29.01 | 736.8 | 29.69 | 754.1 | 54 | 12.2 | 93 | SE | 16 | 7.2 | ..... | ..... | 10n | ..... | S | 0 | 0 | Cloudy..... | C. H. McLeod, C. E. |
| Peterboro, Ontario | 29.04 | 737.6 | 29.77 | 756.1 | 56.0 | 13.3 | 81 | Calm | ..... | ..... | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy..... | Rev. R. Mosley. |
| Port Dover, Ontario | 29.10 | 739.1 | 29.79 | 756.7 | 52 | 11.1 | 100 | SE | 2 | 0.9 | ..... | ..... | Fog | ..... | SE | 0.21 | 5.3 | Foggy ..... | H. Morgan. |
| Port Hastings, N. S | 29.87 | 758.7 | 29.92 | 760.0 | 35.4 | 1.9 | ..... | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine..... | Peter Grant. |
| Port Stanley, Ontario | 29.15 | 740.4 | 29.79 | 756.7 | 51 | 10.6 | 98 | SE | 8 | 3.6 | ..... | ..... | Fog | ..... | SE | 0.02 | 0.5 | Foggy ..... | M. Payne. |
| *Quebec, Quebec | 29.06 | 753.4 | 29.99 | 761.7 | 39 | 3.9 | 82 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.84 | 745.2 | 29.80 | 756.9 | 46 | 7.8 | 67 | SE | 8 | 3.6 | ..... | 5cs | 0 | SW | ..... | 0 | 0 | Fair..... | W. H. McIntyre. |
| St. Andrews, N. B | 29.92 | 760.0 | 29.97 | 761.2 | 45 | 7.2 | 64 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Dr. Gove. |
| St. John, N. B | 29.83 | 757.7 | 30.00 | 762.0 | 38 | 3.3 | 90 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear..... | G. Murdock, C. E. |
| *Saugeen, Ontario | 28.96 | 735.6 | 29.65 | 753.1 | 59 | 15.6 | 93 | S | 7 | 3.1 | ..... | 2cs | 0 | ..... | ..... | 0 | 0 | Clear..... | K. Stewart. |
| Stayner, Ontario | 28.92 | 734.6 | 29.68 | 753.9 | 52 | 11.1 | 96 | SE | 5 | 2.2 | ..... | ..... | 10n | ..... | ..... | 0.13 | 3.3 | Fair..... | R. J. Cole. |
| Stratford, Ontario | 28.45 | 722.6 | 29.70 | 754.4 | 56.0 | 13.3 | 98 | S | 7 | 3.1 | ..... | ..... | 10s | ..... | S | 0.24 | 6.1 | Light rain... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.69 | 759.2 | 29.92 | 760.0 | 41 | 5.0 | 78 | W | 6 | 2.7 | ..... | ..... | 8ks | ..... | ..... | 0.726 | 18.44 | Overcast..... | T. C. Hill. |
| *Toronto, Ontario | 29.41 | 747.0 | 29.79 | 756.7 | 47 | 8.3 | 94 | E | 2 | 0.9 | ..... | ..... | 10n | ..... | W | 0 | 0 | Cloudy..... | Magnetic Observatory |
| Windsor, N. S | 29.87 | 758.7 | 29.97 | 761.2 | 43.0 | 6.1 | 91 | NW | 5 | 2.2 | ..... | ..... | 9n | ..... | Calm | 0.72 | 18.3 | Light rain... | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 32.0 | 0.0 | ..... | NE | ..... | ..... | ..... | 4k | 4s | ..... | ..... | 0 | 0 | Fair..... | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,017 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrumental error and temperature. Inches. | Corrected for instrumental error and temperature. Millimeters. | Reduced to sea-level. Inches. | Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0–10. | CLOUDS. Amount. Up'er 0–10. | CLOUDS. Amount. Low'r 0–10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.68 | 753.9 | 29.91 | 759.7 | 50 | 10.0 | 65 | N | 1 | 0.4 | ..... | 8cs | Haze | W | ..... | 0 | 0 | Fair | |
| Alpena, Michigan | 28.92 | 734.6 | 29.53 | 750.0 | 58 | 14.4 | 81 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.07 | 1.8 | Clear | |
| Atlantic City, New Jersey | 29.94 | 760.5 | 29.96 | 761.0 | 52 | 11.1 | 93 | S | 3 | 1.3 | ..... | 5k | Haze | SE | Calm | 0.02 | 0.5 | Fair | |
| Augusta, Georgia | 29.89 | 759.2 | 30.07 | 763.8 | 63 | 17.2 | 78 | Calm | 0 | 0 | ..... | 5k | 2s;hz | W | Calm | 0.02 | 0.5 | Cloudy | |
| Baltimore, Maryland | 29.85 | 758.2 | 29.90 | 759.4 | 59 | 15.0 | 88 | E | 3 | 1.3 | ..... | 5ck | Haze | SW | Calm | 0 | 0 | Fair | |
| Barnegat, New Jersey | 29.93 | 760.2 | 29.95 | 760.7 | 55 | 12.8 | 83 | W | 6 | 2.7 | ..... | ..... | 10n | ..... | W | Inap. | Inap. | Light rain | |
| Bismarck, Dakota | 28.02 | 711.7 | 29.88 | 758.9 | 44 | 6.7 | 84 | W | 4 | 1.8 | ..... | 0 | 1s | ..... | W | Inap. | Inap. | Clear | |
| Boise City, Idaho | 26.58 | 675.1 | 29.46 | 748.3 | 54 | 12.2 | 43 | E | 24 | 10.7 | ..... | 2k | 5s | Calm | SE | Inap. | Inap. | Fair | |
| Boston, Massachusetts | 29.83 | 757.7 | 29.98 | 761.5 | 51.5 | 10.8 | 70 | E | 6 | 2.7 | ..... | 5c | Haze | NW | ..... | 0 | 0 | Fair | |
| Brackettville, Texas | 28.66 | 728.0 | 29.64 | 752.8 | 73 | 22.8 | 76 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 28.74 | 730.0 | 29.72 | 754.9 | 43 | 6.1 | 100 | NW | 8 | 3.6 | ..... | 2k | 0 | NW | ..... | 0.12 | 3.0 | Fair | |
| Brownsville, Texas | 29.77 | 756.1 | 29.83 | 757.7 | 77 | 25.0 | 86 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Buffalo, New York | 29.08 | 738.6 | 29.75 | 755.6 | 59 | 15.0 | 94 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | SW | 0.17 | 4.3 | Cloudy | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 50 | 10.0 | 86 | SW | ..... | ..... | 1 | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Burlington, Vermont | 29.66 | 753.4 | 29.92 | 760.0 | 50 | 10.0 | 58 | S | 4 | 1.8 | ..... | 8c | 0 | NW | ..... | 0 | 0 | Cloudy | |
| Cairo, Illinois | 29.53 | 750.0 | 29.91 | 759.7 | 62 | 16.7 | 100 | E | 14 | 6.3 | ..... | ..... | 10n | ..... | Calm | 1.78 | 45.2 | Heavy rain | |
| Camp Grant, Arizona | 25.07 | 636.8 | 29.87 | 758.7 | 60 | 15.6 | 2 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | 26.52 | 673.6 | 30.00 | 762.0 | 49 | 9.4 | 78 | S | ..... | ..... | 4 | 8c | 0 | SE | ..... | 0 | 0 | Cloudy | |
| Campo, California | 27.20 | 690.9 | 29.76 | 755.9 | 42 | 5.6 | 91 | SW | 8 | 3.6 | ..... | ..... | 10s | ..... | SW | 0.92 | 23.4 | Cloudy | |
| Cape Hatteras, N. Carolina | 30.04 | 763.0 | 30.05 | 763.3 | 60 | 15.6 | 94 | SW | 10 | 4.5 | ..... | 2cs | Haze | SW | ..... | 0 | 0 | Fair | |
| Cape Henry, Virginia | 29.92 | 760.0 | 29.95 | 760.7 | 62 | 16.7 | 67 | SW | 12 | 5.4 | ..... | 2cs | 0 | W | ..... | 0 | 0 | Fair | |
| Cape Lookout, N. Carolina | 30.05 | 763.3 | 30.07 | 763.8 | 64 | 17.8 | 73 | SW | 11 | 4.9 | ..... | 5c | 2s | W | SW | 0 | 0 | Fair | |
| Cape May, New Jersey | 29.92 | 760.0 | 29.95 | 760.7 | 56 | 13.3 | 81 | S | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 30.05 | 763.3 | 30.12 | 765.0 | 67 | 19.4 | 84 | SW | 5 | 2.2 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Cheyenne, Wyoming | 23.84 | 605.5 | 29.78 | 756.4 | 26 | — 3.3 | 88 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.09 | 738.9 | 29.76 | 755.9 | 56 | 13.3 | 69 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.39 | 9.9 | Clear | |
| Cincinnati Ohio | 29.19 | 741.4 | 29.81 | 757.2 | 66 | 18.9 | 84 | SE | 3 | 1.3 | ..... | ..... | 10ks | ..... | W | 0.18 | 4.6 | Cloudy | |
| Cleveland, Ohio | 29.07 | 738.4 | 29.76 | 755.9 | 63 | 17.2 | 78 | S | 12 | 5.4 | ..... | 2cs | 0 | SW | ..... | 0.02 | 0.5 | Clear | |
| Concho, Texas | 27.92 | 709.2 | 29.57 | 751.1 | 58 | 14.4 | 93 | NW | ..... | ..... | 1 | 8k | 0 | NW | ..... | 1.20 | 30.5 | Cloudy | |
| Corsicana, Texas | 29.39 | 746.5 | 29.84 | 757.9 | 73 | 22.8 | 95 | S | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.97 | 24.6 | Light rain | |
| Davenport, Iowa | 29.24 | 742.7 | 29.86 | 758.4 | 54 | 12.2 | 67 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.07 | 1.8 | Clear | |
| Deadwood, Dakota | 25.30 | 642.6 | ..... | ..... | 30 | — 1.1 | 89 | S | 1 | 0.4 | ..... | 5cs | 0 | SW | ..... | 0.18 | 4.6 | Fair | |
| Denison, Texas | 29.08 | 738.6 | 29.84 | 757.9 | 71 | 21.7 | 71 | SE | 5 | 2.2 | ..... | ..... | 10s | ..... | SE | 1.08 | 27.4 | Threatening | |
| Denver, Colorado | 24.61 | 624.8 | 29.82 | 757.4 | 35 | 1.7 | 53 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Detroit, Michigan | 29.05 | 737.9 | 29.69 | 754.1 | 61 | 16.1 | 88 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.17 | 4.3 | Clear | |
| Dodge City, Kansas | 27.23 | 691.6 | 29.47 | 748.5 | 51 | 10.6 | 59 | SE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 29.09 | 738.9 | 29.77 | 756.1 | 50 | 10.0 | 65 | NW | 6 | 2.7 | ..... | 0 | 5s | ..... | Calm | 0.01 | 0.3 | Fair | |
| Duluth, Minnesota | 28.90 | 734.0 | 29.56 | 750 8 | 47 | 8.3 | 92 | W | 3 | 1.3 | ..... | ..... | 10s | ..... | NW | 1.14 | 29.0 | Cloudy | |
| Eagle Pass, Texas | 29.07 | 738.4 | 29.77 | 756.1 | 75 | 23.9 | 90 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Eastport, Maine | 29.92 | 760.0 | 29.99 | 761.7 | 47 | 8.3 | 62 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 64 | 17.8 | 39 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.05 | 737.9 | 29.73 | 755.1 | 65 | 18.3 | 84 | S | 6 | 2.7 | ..... | 5k | 2s | SW | ..... | 0.50 | 12.7 | Cloudy | |
| Escanaba, Michigan | 28.89 | 733.8 | 29.52 | 749.8 | 50 | 10.0 | 86 | S | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0.43 | 10.9 | Clear | |
| Florence, Arizona | 29.21 | 716.5 | 29.81 | 757.2 | 55 | 12.8 | 68 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | S | 0 | 0 | Fair | |
| Fort Bayard, New Mexico | 24.02 | 610.1 | 30.02 | 762.5 | 45 | 7.2 | 24 | SE | 15 | 6.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.33 | 643.4 | ..... | ..... | 44 | 6.7 | 23 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.09 | 637.3 | 30.05 | 763.3 | 62 | 16.7 | 40 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.29 | 744.0 | 29.81 | 757.2 | 63 | 17.2 | 89 | Calm | 0 | 0 | ..... | 5k | 5s | W | S | 0 | 0 | Cloudy | |
| Fort Griffin, Texas | 28.56 | 725.4 | 29.80 | 756.9 | 69 | 15.6 | 88 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.77 | 756.1 | 29.80 | 756.9 | 12 | —11.1 | 100 | W | 16 | 7.2 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Fort Sill, Indian Territory | 28.62 | 726.9 | 29.71 | 754.6 | 57 | 13.9 | 69 | N | 8 | 3.6 | ..... | 0 | 5s | ..... | W | 0 | 0 | Fair | |
| Galveston, Texas | 29.87 | 758.7 | 29.91 | 759.7 | 74 | 23.3 | 95 | SE | 8 | 3.6 | ..... | 5cs | 5ks | Calm | SE | 0 | 0 | Cloudy | |
| Grand Haven, Michigan | 29.08 | 738.6 | 29.71 | 754.6 | 54 | 12.2 | 74 | S | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Indianapolis, Indiana | 29.06 | 738.1 | 29.80 | 756.9 | 64 | 17.8 | 73 | NW | 5 | 2.2 | ..... | 8cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Indianola, Texas | 29.85 | 758.2 | 29.87 | 758.7 | 75 | 23.9 | 90 | SE | 11 | 4.9 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Jacksboro, Texas | 28.68 | 728.5 | 29.76 | 755.9 | 68 | 20.0 | 84 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| Jacksonville, Florida | 30.07 | 763.8 | 30.10 | 764.5 | 68 | 20.0 | 90 | Calm | 0 | 0 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Hazy | |
| Keokuk, Iowa | 29.25 | 742.9 | 29.85 | 758.2 | 58 | 14.4 | 64 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.36 | 9.1 | Clear | |
| Key West, Florida | 30.04 | 763.0 | 30.07 | 763.8 | 75 | 23.9 | 77 | NE | 14 | 6.3 | ..... | 8k | 0 | E | ..... | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 30.00 | 762.0 | 30.02 | 762.5 | 59 | 15.0 | 82 | SW | 11 | 4.9 | ..... | 5ck | 0 | S | ..... | 0 | 0 | Fair | |
| Knoxville, Tennessee | 28.98 | 736.1 | 29.95 | 761.0 | 63 | 17.2 | 89 | Calm | 6 | 0 | ..... | ..... | 10n | ..... | Calm | 0.41 | 10.4 | Light rain | |
| La Crosse, Wisconsin | 28.96 | 735.6 | 29.68 | 753.9 | 52 | 11.1 | 73 | SW | 12 | 5.4 | ..... | 2k | 0 | W | ..... | 0.05 | 1.3 | Clear | |
| La Mesilla, New Mexico | 25.93 | 658.6 | 30.08 | 764.0 | 40 | 4.4 | 56 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.38 | 746.2 | 29.70 | 754.4 | 76 | 24.4 | 86 | Calm | 0 | 0 | ..... | 10k | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 29.04 | 737.6 | 29.88 | 758.9 | 49 | 9.4 | 78 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.42 | 747.3 | 29.76 | 755.9 | 47 | 8.3 | 85 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | W | 1.19 | 30.2 | Fair | |
| Louisville, Kentucky | 29.29 | 744.0 | 29.83 | 757.7 | 68 | 20 0 | 84 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | W | Inap. | Inap. | Cloudy | |
| Lynchburg, Virginia | 29.28 | 743.7 | 29.93 | 760.2 | 67 | 19.4 | 64 | S | 2 | 0.9 | ..... | 0 | 5ks | ..... | Calm | 0 | 0 | Fair | |
| Marquette, Michigan | 28.76 | 730.5 | 29.43 | 747.5 | 50 | 10.0 | 79 | SW | 12 | 5.4 | ..... | 2k | 0 | SW | ..... | 0.34 | 8.6 | Fair | |
| Mason, Texas | 28.21 | 716.5 | 29.89 | 759.2 | 72 | 22.2 | 85 | S | 3 | 1.3 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Memphis, Tennessee | 29.63 | 752.6 | 29.94 | 760.5 | 64 | 17.8 | 94 | W | 10 | 4.5 | ..... | ..... | 10n | ..... | S | 2.06 | 52.3 | Light rain | |
| Milwaukee, Wisconsin | 28.99 | 736.3 | 29.70 | 754.4 | 55 | 12.8 | 74 | SW | 24 | 10.7 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Mobile, Alabama | 29.99 | 761.7 | 30.03 | 762.7 | 73 | 22.8 | 90 | S | 8 | 3.6 | ..... | Haze | 1s | ..... | SW | 0 | 0 | Hazy | |
| Montgomery, Alabama | 29.80 | 756.9 | 30.04 | 763.0 | 66 | 18.9 | 84 | S | 4 | 1.8 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Hazy | |
| Morgantown, West Virginia | 28.84 | 732.5 | 29.85 | 758.2 | 65 | 18.3 | 73 | S | 5 | 2.2 | ..... | 8c | 2s | SW | S | 0 | 0 | Cloudy | |
| Mt. Washington, N. H. | 23.73 | 602.7 | 30.09 | 764.3 | 39 | — 1.1 | 68 | NW | 27 | 12.1 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Nashville, Tennessee | 29.42 | 747.3 | 29.94 | 760.5 | 64 | 17.8 | 83 | E | 8 | 3.6 | ..... | ..... | 10n | ..... | S | 0.81 | 20.6 | Light rain | |
| New Haven, Connecticut | 29.84 | 757.9 | 29.96 | 761.0 | 58 | 14.4 | 64 | SE | 6 | 2.7 | ..... | 8ck | Haze | Calm | Calm | 0 | 0 | Cloudy | |
| New London, Connecticut | 29.92 | 760.0 | 29.97 | 761.2 | 53 | 11.7 | 73 | E | 8 | 3.6 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| New Orleans, Louisiana | 29.92 | 760.0 | 29.98 | 761.5 | 71 | 21.7 | 90 | SE | 4 | 1.8 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Newport, Rhode Island | 29.91 | 759.7 | 29.94 | 761.0 | 51 | 10.6 | 79 | E | 13 | 5.8 | ..... | 4c | 0 | ..... | ..... | 0 | 0 | Fair | |
| New York, New York | 29.78 | 756.4 | 29.95 | 760.7 | 55 | 12.8 | 79 | S | 3 | 1.3 | ..... | ..... | 5ks;fg | ..... | SW | 0 | 0 | Foggy | |
| Norfolk, Virginia | 29.92 | 760.0 | 29.97 | 761.2 | 64 | 17.8 | 68 | S | 12 | 5.4 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| North Platte, Nebraska | 26.99 | 685.5 | 29.58 | 751.3 | 40 | 4.4 | 86 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 29.50 | 749.3 | 29.54 | 750.3 | 48 | 8.9 | 93 | S | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Omaha, Nebraska | 28.78 | 731.0 | 29.85 | 758.2 | 50 | 10.0 | 65 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Oswego, New York | 29.49 | 749.0 | 29.81 | 757.2 | 54 | 12.2 | 75 | S | 10 | 4.5 | ..... | 2c | 8s | W | W | 0.12 | 3.0 | Cloudy | |
| Pembina, Dakota | 28.89 | 733.8 | 29.72 | 754.9 | 43 | 6.1 | 83 | NW | 4 | 1.8 | ..... | 10k | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Philadelphia, Pennsylvania | 29.87 | 758.7 | 29.92 | 760.0 | 55 | 12.8 | 93 | E | 10 | 4.5 | ..... | ..... | 10s;sm' | ..... | W | 0.18 | 4.6 | Threatening | |
| Phœnix, Arizona | 28.62 | 726.9 | 30.39 | 771.9 | 58 | 14.4 | 58 | S | ..... | ..... | 4 | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Pike's Peak, Colorado | 17.57 | 446.3 | 29.78 | 756.4 | 13 | —10.6 | 62 | SW | 44 | 19.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pioche, Nevada | 23.60 | 599.4 | 29.37 | 746.0 | 28 | — 2.2 | 100 | S | 7 | 3.1 | ..... | ..... | 10n | ..... | Calm | 0.17 | 4.3 | Light snow | |
| Pittsburg, Pennsylvania | 29.04 | 737.6 | 29.82 | 757.4 | 64 | 17.8 | 78 | SW | 12 | 5.4 | ..... | ..... | 10s | ..... | W | Inap. | Inap. | Cloudy | |
| Port Huron, Michigan | 29 02 | 737.1 | 29.65 | 753.1 | 63 | 17.2 | 83 | SW | 12 | 5.4 | ..... | 8k | Haze | W | ..... | 0.03 | 0.8 | Fair | |
| Portland, Maine | 29.96 | 761.0 | 30.01 | 762.2 | 50 | 10.0 | 65 | NE | 3 | 1.3 | ..... | 1c | Haze | NW | ..... | 0 | 0 | Clear | |
| Portland, Oregon | 29.55 | 750.6 | 29.66 | 753.4 | 48 | 8.9 | 92 | E | 6 | 2.7 | ..... | ..... | 10n | ..... | S | 0.43 | 10.9 | Light rain | |
| Prescott, Arizona | 24.45 | 621.0 | 29.81 | 757.2 | 40 | 4.4 | 73 | S | 23 | 10.3 | ..... | 0 | 8s | ..... | SW | 0 | 0 | Fair | |
| Punta Rassa, Florida | 30.09 | 764.3 | 30.11 | 764.8 | 70 | 21.1 | 80 | E | 6 | 2.7 | ..... | 5c | Haze | W | ..... | 0 | 0 | Fair | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instru'm'tal error and temperature. Inches. | BAROMETER. Corrected for instru'm'tal error and temperature. Millimeters | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Red Bluff, California | 29.27 | 743.4 | 29.62 | 752.3 | 48 | 8.9 | 92 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.78 | 19.8 | Light rain ... | |
| Rochester, New York | 29.18 | 741.2 | 29.78 | 756.4 | 57 | 13.9 | 87 | S | 4 | 1.8 | ..... | ..... | 10s;sm | ..... | S;calm | 0.71 | 18.0 | Cloudy..... | |
| Roseburg, Oregon | 29.14 | 740.1 | 29.70 | 754.4 | 44 | 6.7 | 96 | SW | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0.27 | 6.9 | Cloudy..... | |
| Sacramento, California | 29.58 | 751.3 | 29.67 | 753.6 | 44 | 6.7 | 92 | SE | 4 | 1.8 | ..... | 1k | 0 | S | ..... | 0.36 | 9.1 | Clear. ..... | |
| St. Louis, Missouri | 29.32 | 744.7 | 29.88 | 758.9 | 61 | 16.1 | 55 | N | 4 | 1.8 | ..... | 0 | 5s | ..... | Calm | 0.14 | 3.6 | Fair ..... | |
| St. Marks, Florida | 30.06 | 763.5 | 30.07 | 763.8 | 67 | 19.4 | 94 | Calm | 0 | 0 | ..... | 0- | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| St. Paul, Minnesota | 28.83 | 732.3 | 29.63 | 752.6 | 56 | 10.0 | 78 | W | 6 | 2.7 | ..... | 5k | 0 | W | ..... | 0 | 0 | Fair..... | |
| Salt Lake City, Utah | 25.18 | 639.6 | 29.51 | 749.5 | 52 | 11.1 | 35 | E | 6 | 2.7 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy..... | |
| San Antonio, Texas | 29.15 | 740.4 | 29.71 | 754.6 | 73 | 22.8 | 95 | E | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Threatening | |
| San Diego, California | 29.77 | 756.1 | 29.84 | 757.9 | 54 | 12.2 | 74 | SW | 14 | 6.3 | ..... | 5k | 0 | W | ..... | 0.62 | 15.7 | Fair..... | |
| Sandusky, Ohio | 29.12 | 739.6 | 29.76 | 755.9 | 64 | 17.8 | 83 | SW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Clear... ..... | |
| Sandy Hook, New Jersey | 29.93 | 760.2 | 29.96 | 761.0 | 56 | 13.3 | 87 | W | 6 | 2.7 | ..... | 10k | Haze | W | ..... | 0 | 0 | Cloudy..... | |
| San Francisco, California | 29.64 | 752.8 | 29.70 | 754.4 | 48 | 8.9 | 78 | W | 4 | 1.8 | ..... | 1k | 0 | Calm | ..... | 0.10 | 2.5 | Clear ..... | |
| Santa Fé, New Mexico | 23.10 | 586.7 | 29.64 | 752.8 | 46 | 7.8 | 13 | E | 8 | 3.6 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear..... | |
| Savannah, Georgia | 30.01 | 762.2 | 30.10 | 764.5 | 68 | 20.0 | 79 | S | 5 | 2.2 | ..... | 1ck | 5ks;hz' | NW | SW | 0 | 0 | Fair... ..... | |
| Shreveport, Louisiana | 29.75 | 755.6 | 29.96 | 761.0 | 73 | 22.8 | 90 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | S | 0.03 | 0.8 | Cloudy..... | |
| Smithville, North Carolina | 30.06 | 763.5 | 30.09 | 764.3 | 64 | 17.8 | 83 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy..... | |
| Springfield, Massachusetts | 29.77 | 756.1 | 29.90 | 759.4 | 56 | 13.3 | 57 | Calm | 0 | 0 | ..... | ..... | 10k;s | ..... | N | 0 | 0 | Cloudy..... | |
| Stockton, Texas | 26.80 | 680.7 | 29.80 | 756.9 | 63 | 17.2 | 57 | S | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Thatcher's Island, Mass | 29.95 | 760.7 | 30.00 | 762.0 | 51 | 10.6 | 79 | E | 4 | 1.8 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Foggy ..... | |
| Toledo, Ohio | 29.07 | 738.4 | 29.71 | 754.6 | 67 | 19.4 | 79 | S | 11 | 4.9 | ..... | 2k | 5ks | SW | SW | 0 | 0 | Fair..... | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 53 | 11.7 | 59 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Tybee Island, Georgia | 30.06 | 763.5 | 30.09 | 764.3 | 67 | 19.4 | 90 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Umatilla, Oregon | 29.15 | 740.4 | ..... | ..... | 53 | 11.7 | 73 | W | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Vicksburg, Mississippi | 29.76 | 755.9 | 30.01 | 762.2 | 72 | 22.2 | 90 | S | 6 | 2.7 | ..... | 10c | 0 | Calm | ..... | 0 | 0 | Cloudy..... | |
| Virginia City, Montana | 23.93 | 607.8 | 29.41 | 747.0 | 33 | 0.6 | 70 | SE | 20 | 8.9 | ..... | 2c | 0 | Calm | ..... | Inap. | Inap. | Clear..... | |
| Visalia, California | 29.36 | 745.7 | 29.73 | 755.1 | 46 | 7.8 | 92 | SE | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0.22 | 5.6 | Cloudy..... | |
| Washington, D. C | 29.82 | 757.4 | 29.93 | 760.2 | 59 | 15.0 | 82 | E | 1 | 0.4 | ..... | 8k | Fog | SW | S | 0 | 0 | Cloudy..... | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 49 | 9.4 | 78 | NW | ..... | ..... | 2 | 0 | 8ks | ..... | ..... | 0 | 0 | Threatening | |
| Wilmington, N. Carolina | 29.99 | 761.7 | 30.07 | 763.8 | 60 | 15.6 | 88 | SW | 4 | 1.8 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy..... | |
| Winnemucca, Nevada | 25.04 | 636.0 | 29.46 | 746.7 | 39 | 3.9 | 73 | E | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Wood's Holl, Mass | 29.93 | 760.2 | 29.98 | 761.5 | 53 | 11.7 | 73 | SE | 10 | 4.5 | ..... | Haze | Haze | NW | Calm | 0 | 0 | Hazy..... | |
| Yankton, Dakota | 28.62 | 726.9 | 29.91 | 759.7 | 43 | 6.1 | 83 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| Yuma, Arizona | 29.04 | 752.8 | 29.81 | 757.2 | 58 | 14.4 | 68 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | N | Inap. | Inap. | Cloudy..... | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| York Factory, B. A | 30.11 | 746.8 | 30.17 | 766.3 | 21.5 | — 5.8 | 100 | NE | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | 0.01 | 0.3 | Snowing..... | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I | 30.01 | 762.2 | 30.03 | 762.7 | 74 | 23.3 | 72 | E | 3.6 | 1.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | 30.09 | 764.3 | 30.10 | 764.5 | 78 | 25.6 | 82 | Calm | 0 | 0 | ..... | 5c | 2s | Calm | NE | 0 | 0 | ..... | James Gall. |
| Navassa, W. I | 29.85 | 758.2 | 29.93 | 760.2 | 80 | 26.7 | ..... | NE | 10 | 4.5 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair ..... | F. M. Everett. |
| Paramaribo, D. Guiana, S. A | 29.97 | 761.2 | 29.98 | 761.5 | 81 | 27.2 | 91 | E | ..... | ..... | 3 | ..... | 10n | ..... | ..... | 0.060 | 1.52 | Raining..... | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dr. H. Groot. |
| Medellin, Colombia, S. A | 25.21 | 640.3 | ..... | ..... | 69.5 | 20.8 | 85 | Calm | ..... | ..... | 0 | 5cs | 5ks | ..... | ..... | 0 | 0 | ..... | Thomas Herran. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medillin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 1—16. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.66 | 753.4 | 47 | 8.3 | 45 | 7.2 | 100 | W | 15 | 6.7 | ..... | ..... | 1 | ..... | S | 0.09 | 2.3 | ..... | ..... | Clear..... | |
| Navy Yard, Pensacola, Fla. | 30.19 | 766.8 | 72 | 22.2 | 72 | 22.2 | 95 | SE | 11 | 4.9 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Navy Yard, Portsmouth, N.H | 30.10 | 764.5 | 68 | 20.0 | 54 | 12.2 | 67 | E | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear ..... | |
| Naval Hospital, Yokohama, Japan..... | 29.58* | 751.3* | 64 | 17.8 | 56 | 13.3 | 87 | Calm | ..... | ..... | 0 | ..... | 7ks | ..... | ESE | 0.84 | 21.3 | ..... | ..... | Cloudy . ..... | |
| Adams. Panama..... | 29.96 | 761.0 | 83 | 28.3 | 83 | 28.3 | 87 | NW | ..... | ..... | 2 | ..... | 2 | ..... | NW | ..... | ..... | Smooth | ..... | Fair..... | |
| Alliance, Villefranche, France..... | 29.88‡ | 758.9‡ | ..... | ..... | 59 | 15.0 | 88 | ENE | ..... | ..... | 1 | ..... | 10 | ..... | S;W | ..... | ..... | None | ..... | Rainy..... | |
| Ashuelot. N. 32° 08', E. 126° 58'..... | 29.97 | 761.2 | 61 | 16.1 | 57 | 13.9 | 75 | NW | ..... | ..... | 0-1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear. ..... | |
| Canonicus, New Orleans, La..... | 29.99 | 761.7 | 51 | 10.6 | 71 | 21.7 | 95 | ESE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Colorado. New York, N. Y..... | 30.02‡ | 762.5‡ | ..... | ..... | 56 | 13.3 | 81 | SE | 1 | 0.4 | ..... | ..... | 10 | ..... | W | 0 | 0 | ..... | ..... | Light fog..... | |
| Constellation, N. 49° 32' W. 6° 50'..... | 29.51‡ | 749.5‡ | ..... | ..... | 52 | 11.1 | 86 | SW | ..... | ..... | 4 | ..... | 10 | ..... | SW | ..... | ..... | Smooth | SW | Sprinkling... | |
| Constitution, Havre, France..... | 29.54‡ | 750.3‡ | ..... | ..... | 55 | 12.8 | 93 | WNW | ..... | ..... | 1 | ..... | 8 | ..... | Calm | ..... | ..... | ..... | ..... | Cloudy..... | |
| Despatch, Constantinople, Turkey. | 29.98‡ | 761.5‡ | ..... | ..... | 58 | 14.4 | 76 | SW | ..... | ..... | 1 | ..... | 8 | ..... | SW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Franklin, Norfolk, Va..... | 30.09 | 764.3 | 66 | 18.9 | 62 | 16.7 | 72 | SSW | 7 | 3.1 | ..... | ..... | 2 | ..... | WNW | 0 | 0 | ..... | ..... | D. clouds.... | |
| Gettysburg Valetta, Malta..... | 29.92‡ | 760.0‡ | ..... | ..... | 74 | 23.3 | 95 | SSE | ..... | ..... | 1 | ..... | 5 | ..... | Calm | 0 | 0 | ..... | ..... | Fair ..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.08 | 764.0 | 75 | 23.9 | 74 | 23.3 | 81 | NE | ..... | ..... | 5 | ..... | 2 | ..... | NE | ..... | ..... | Ground | NW | Clear..... | |
| Hartford, Montevideo, Uraguay.... | 29.91 | 759.7 | 66 | 18.9 | 64 | 17.8 | 89 | SSW | 10 | 4.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Marion, Smyrna, Turkey..... | 29.94 | 760.5 | 70 | 21.1 | 70 | 21.1 | 66 | SW | ..... | ..... | 1 | ..... | 10 | ..... | SW | 0 | 0 | Smooth | ... ..... | Cloudy..... | |
| Michigan, Erie, Pa..... | 29.31 | 744.5 | 65 | 18.3 | 64 | 17.8 | 83 | S | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Fair..... ..... | |
| Monocacy. Shanghai, China..... | 29.89‡ | 759.2‡ | ..... | ..... | 55 | 12.8 | 93 | SSE | ..... | ..... | 2-3 | ..... | 10 | ..... | SE | ..... | ..... | ..... | ..... | Cloudy..... | |
| New Hampshire, Port Royal, S. C..... | 30.36† | 771.1† | ..... | ..... | 67 | 19.4 | 89 | SW | 7 | 3.1 | ..... | ..... | 8 | ..... | SW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Omaha, Hampton Roads, Va..... | 30.02* | 762.5* | 61 | 16.1 | 61 | 16.1 | 82 | SW | 2 | 0.9 | ..... | ..... | 2 | ..... | SW | 0 | 0 | ..... | ..... | Bright..... | |
| Onward, Callao, Peru..... | 30.02† | 762.5† | ..... | ..... | 68 | 20.0 | 90 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | ..... | ..... | Long | W | Misty..... ..... | |
| Ossipee. N. 23° 37', W. 82° 53'..... | 30.09‡ | 764.3‡ | ..... | ..... | 77 | 25.0 | 82 | ESE | ..... | ..... | 4 | ..... | 2 | ..... | SE | ..... | ..... | Mod'ate | SE | Clear..... | |
| Palos, Shanghai, China..... | 29.96* | 761.0* | 64 | 17.8 | 55 | 12.8 | 87 | SE | ..... | ..... | 3 | ..... | 8 | ..... | SE | ..... | ..... | ..... | ..... | Pleasant..... | |
| Pensacola, N. 37° 17', W. 140° 5'..... | 30.29 | 769.4 | 53 | 11.7 | 51 | 10.6 | 79 | N | 24 | 10.7 | ..... | ..... | 7 | ..... | N | 0.03 | 0.8 | Mod'ate | N | Cloudy..... | |
| Plymouth. N. 35° 22' W. 74°..... ..... | 30.06‡ | 763.5‡ | ..... | ..... | 69 | 20.6 | 65 | WSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ... ... | ..... | Long | E | Clear..... | |
| Powhatan, Norfolk, Va..... | 29.99‡ | 761.7‡ | ..... | ..... | 60 | 16.1 | 94 | S | 6.0 | 2.7 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Ranger. Amoy, China..... | 29.99* | 761.7* | ..... | ..... | 70 | 21.1 | 95 | Calm | ..... | ..... | 0 | ..... | 8 | .. ..... | Calm | ..... | ..... | ..... | ..... | Foggy ..... | |
| Rio Bravo, Brownsville, Texas..... | 29.79 | 756.7 | 78 | 25.6 | 76 | 24.4 | 100 | SSE | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Cloudy..... | |
| Santee, Annapolis, Md..... | 29.93‡ | 760.2‡ | ..... | ..... | 59 | 15.0 | 88 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | S&W | 0 | 0 | ..... | ..... | Hazy..... | |
| Saratoga, Washington, D. C..... | 29.87 | 758.7 | 65 | 18.3 | 65 | 18.3 | 100 | S&W | ..... | ..... | 0-1 | ..... | 5 | ..... | W | 0 | 0 | ..... | ..... | Misty..... | |
| St. Louis, League Island, Pa ..... | 29.93 | 760.2 | 66 | 18.9 | 55 | 12.8 | 93 | SE | 10 | 4.5 | ..... | ..... | 10 | ..... | NNE | 0.325 | 8.26 | ..... | ..... | Raining..... | |
| Supply, Havre, France..... | 29.66 | 753.4 | 62 | 16.7 | 55 | 12.8 | 80 | Calm | ..... | ..... | 0 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Swatara, N. 23° 30', W. 85° 28'..... | 30.02‡ | 762.5‡ | ..... | ..... | 78 | 25.6 | 78 | ESE | ..... | ..... | 4 | ..... | 8 | ..... | S&E | ..... | ..... | Mod'ate | E | Cloudy..... | |
| Tennessee, N. 22° 16', E. 38° 08'..... | 29.87* | 758.7* | 82 | 27.8 | 80 | 26.7 | 82 | NW | 4 | 1.8 | ..... | ..... | 3 | ..... ... | ..... | ..... | ..... | Mod'ate | NNW | D. clouds.... | |
| Trenton, Villefranche, France ..... | 29.90‡ | 759.4‡ | ..... | ..... | 60 | 15.6 | 94 | E | ..... | ..... | 1-2 | ..... | 10 | ..... | W | 0.2 | 5. | ..... | ..... | Raining..... | |
| Tuscarora, N. 16° 21', W. 98° 37'... ... | 29.74 | 755.4 | 76 | 24.4 | 76 | 24.4 | 91 | N | .... | ..... | 1 | ..... | 2 | ..... | Calm | 0 | 0 | Long | WSW | Hazy..... | |
| Vandalia, Villefranche, France..... | 29.92‡ | 760.0‡ | ..... | ..... | 59 | 15.0 | 94 | E | ..... | ..... | 1 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Rainy ..... | |
| Wabash, Boston, Mass..... | 29.98‡ | 761.5‡ | ..... | ..... | 58 | 14.4 | 70 | ENE | 3 | 1.3 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Fair..... | |
| Wyoming, N. 48° 58', W. 12° 58'..... | 29.50†* | 749.3†* | ..... | ..... | 66 | 18.9 | 74 | WNW | ..... | ..... | 5-7 | ..... | 9 | ..... | ..... | ..... | ..... | Long Heavy | W | Squally..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable; the position given is that at noon, local time, instead of that at 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Panama, Victoria, B. C. | | | 29.66* | 753.4* | | | | S | | | 1 | | 3 | | SW | | | | Capt. Cobb. |
| S. S. City of Peking. N. 35° 42′, E. 150° 18′ | | | 29.78† | 756.4† | 60 | 15.6 | 88 | SE | 58.0 | 25.9 | | | 10 | | SE | Rough | SE | Raining | Capt. Seabury. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Tokio, N. 36° 08′, W. 146° 40′ | | | | | 51 | 10.6 | | NE | | | 6 | | 2 | | NE | Long | NNE | D. clouds | Capt. Dearborn. |
| S. S. Colima | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, N. 40° 58′, W. 48° 20′ | | | 30.05† | 763.3† | 44 | 6.7 | 92 | ESE | | | 2 | | 2c | | SE | Mod'ate | ESE | Fair | Capt. W. H. Thompson. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Aneroid.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic | | | | | | | | | | | | | | | | | | | Capt. John Metcalf. |
| S. S. Gaelic, Yokohama, Japan | | | 29.65† | 753.1† | 70 | 21.1 | ?? | NE | | | 4 | | ck | | NE | Smooth | | Raining | Capt. W. H. Kidley |
| S. S. Oceanic, N. 22° 42′, E. 115° 59′ | | | 29.73 | 755.1 | 66 | 18.9 | 94 | NE | | | 3 | | 10 | | | Smooth | NE | Raining | Capt. H. Parsell. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | Character | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois..... | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, Philadelphia, Pa..... | | | 30.09* | 764.3* | 54 | 12.2 | ?? | E | | | 3 | | 10 | | ENE | | | Cloudy..... | Captain Sargent. |
| S. S. Ohio, N. 39° 41′, W. 65° 25′..... | | | 30.00 | 762.0 | 49 | 9.4 | 93 | NNE | | | 2 | | 9 | | | | | Clear..... | Captain Morrison. |
| S. S. Pennsylvania, Liverpool..... | | | 29.50† | 749.3† | 58 | 14.4 | 100 | SE | | | 1 | | 10 | | S | | | Rainy ..... | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for elevation; instrumental error not known. †Corrected for temperature and elevation, instrumental error not known.

## RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland..... | | | | | | | | | | | | | | | | | | | Capt. Roudle. |
| S. S. Switzerland..... | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland..... | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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## ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian..... | | | | | | | | | | | | | | | | | | | |
| S. S. Hibernian..... | | | | | | | | | | | | | | | | | | | |
| S. S. Scandinavian..... | | | | | | | | | | | | | | | | | | | Capt. W. Richardson. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

## MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, Off Seal Island..... | | | 29.91 | 759.7 | 41 | 5.0 | 82 | NNW | 6 | 2.7 | | | 0 | | | Smooth | | Clear. ..... | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′..... | | | 29.71 | 754.6 | 12.5 | —10.8 | 89 | S | 5.7 | 2.5 | | | 10s | | | | | Light snow.. | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Amount of precipitation during past 24 hours 0.36 in., or 9.1 mm.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg$^{d}$,) Chief Signal Officer, U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 21, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

## ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | | | 30.20 | 767.1 | 64.4 | 18.0 | 79 | NE | | | 8 | | 1 | | | | | | |
| Nemours | | | 30.15 | 765.9 | 70.2 | 21.2 | 51 | WNW | | | 5 | | 0 | | | 0 | 0 | Very fair | Dr. Ollive. |
| Algiers | | | 29.97 | 761.3 | 67.3 | 19.6 | 63 | W | | | 3 | | 0 | | | 0 | 0 | Clear | Michel. |
| La Calle | | | 29.87 | 758.7 | 64.9 | 18.3 | 64 | NNW | | | 3 | | 3 | | | Inap. | Inap. | Pretty fair | Towiliere. |
| Tunis | | | 29.89 | 759.1 | 65.1 | 18.4 | 53 | W | | | 6 | | 4 | | | 0 | 0 | Cloudy | Boulangeot. |
| Sfax | | | 29.92 | 760.0 | 62.6 | 17.0 | | NE | | | 9 | | 10 | | | 0 | 0 | Covered | Jacques. |
| Saida | | | 30.19 | 766.8 | 62.1 | 16.7 | | WNW | | | 3 | | 9 | | | 0.039 | 1.0 | Covered | Gau. |
| Tebessa | | | 29.92 | 760.0 | | | | NW | | | 1 | | 3 | | | 0 | 0 | Pretty fair | Herbin. |
| Geriville | | | 30.15 | 765.9 | 67.6 | 19.8 | 76 | N | | | 3 | | 6 | | | 0 | 0 | Cloudy | Watrin. |
| Laghouat | | | 30.10 | 764.6 | 69.1 | 20.6 | 25 | W | | | 4 | | 2 | | | 0 | 0 | Fair | Lemaillot. |
| Biskra | | | 29.98 | 761.5 | 81.0 | 27.2 | 36 | NW | | | 6 | | 0 | | | 0 | 0 | Clear | Bertrand. |
| | | | | | | | | | | | 5 | | 2 | | | 0 | 0 | Fair | Chanvaux. |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

## AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.08 | 738.7 | 29.61 | 752.0 | 71.2 | 21.8 | 45 | SE | | | 5 | 3 | | | | 0.102 | 2.6 | Raining | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.09 | 738.8 | 29.84 | 757.9 | 61.9 | 16.6 | 60 | NE | | | 3 | 5 | | | | 0.063 | 1.6 | | Dr. Wierzbiski. |
| Eperies | 28.90 | 734.0 | 29.76 | 755.8 | 61.9 | 16.6 | 56 | N | | | 3 | 10s | | | | 0 | 0 | | Julius Mikolik. |
| Gratz | 28.48 | 723.4 | 29.69 | 754.2 | 64.4 | 18.0 | 48 | SW | | | 3 | 8 | | | | 0 | 0 | | Andreas Rospini. |
| Hermannstadt | 28.31 | 719.0 | 29.69 | 754.0 | 64.4 | 18.0 | 55 | NW | | | 1 | 3 | | | | 0 | 0 | | Prof. Reissenberg |
| Kremsmünster | 28.28 | 718.2 | 29.58 | 751.2 | 61.2 | 16.2 | 59 | ENE | | | 3 | 10 | | | | 0.091 | 2.3 | | Prof. C. Wagner |
| Lemberg | 28.82 | 731.9 | 29.79 | 756.7 | 53.8 | 12.1 | 84 | NE | | | 1 | 8 | | | | 0.205 | 5.2 | | Dr. T. Stanecki. |
| Pola | 29.52 | 749.9 | 29.63 | 752.7 | 64.5 | 12.5 | 99 | ESE | | | 3 | 10s | | | | 0 | 0 | | I.R.Hydrographic Office |
| Szathmar | 29.30 | 744.1 | 29.75 | 755.6 | 64.8 | 18.2 | 55 | E | | | 3 | 5 | | | | 0 | 0 | | Johann Tamas, S. J. |
| Szegedin | 29.42 | 747.2 | 29.69 | 754.1 | 65.8 | 18.8 | 57 | Calm | | | 0 | 5 | | | | 0 | 0 | | Karl Stancel. |
| Trieste | 29.58 | 751.3 | 29.68 | 753.9 | 61.7 | 16.5 | 88 | N | | | 1 | 10 | | | | 0.291 | 7.4 | Raining | P. Busin. |
| Vienna | 29.00 | 736.7 | 29.70 | 754.3 | 64.8 | 18.2 | 45 | ESE | | | 2 | 4 | | | | 0.098 | 2.5 | | I. R. Central Met. Obs'y. |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

## BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.30 | 718.7 | 29.80 | 757.0 | 50.5 | 10.3 | 88 | SW | | | 1 | 10 | | | | 0.173 | 4.4 | Raining | Prof. M. Passau. |
| Brussels | 29.58 | 751.2 | 29.77 | 756.2 | 59.2 | 15.1 | 60 | SW | | | 1 | 10 | | S | | 0.157 | 4.0 | | Royal Observatory. |
| Furnes | 29.77 | 756.1 | 29.79 | 756.7 | 60.6 | 15.9 | 63 | SW | | | 3 | 8 | | | | 0.004 | 0.1 | | M. E. de Cae. |
| Maeseyck | 29.67 | 753.5 | 29.79 | 756.7 | 59.2 | 15.1 | 81 | SW | | | 0 | 10 | | | | 0.244 | 6.2 | | M. Pierrot. |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4? feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

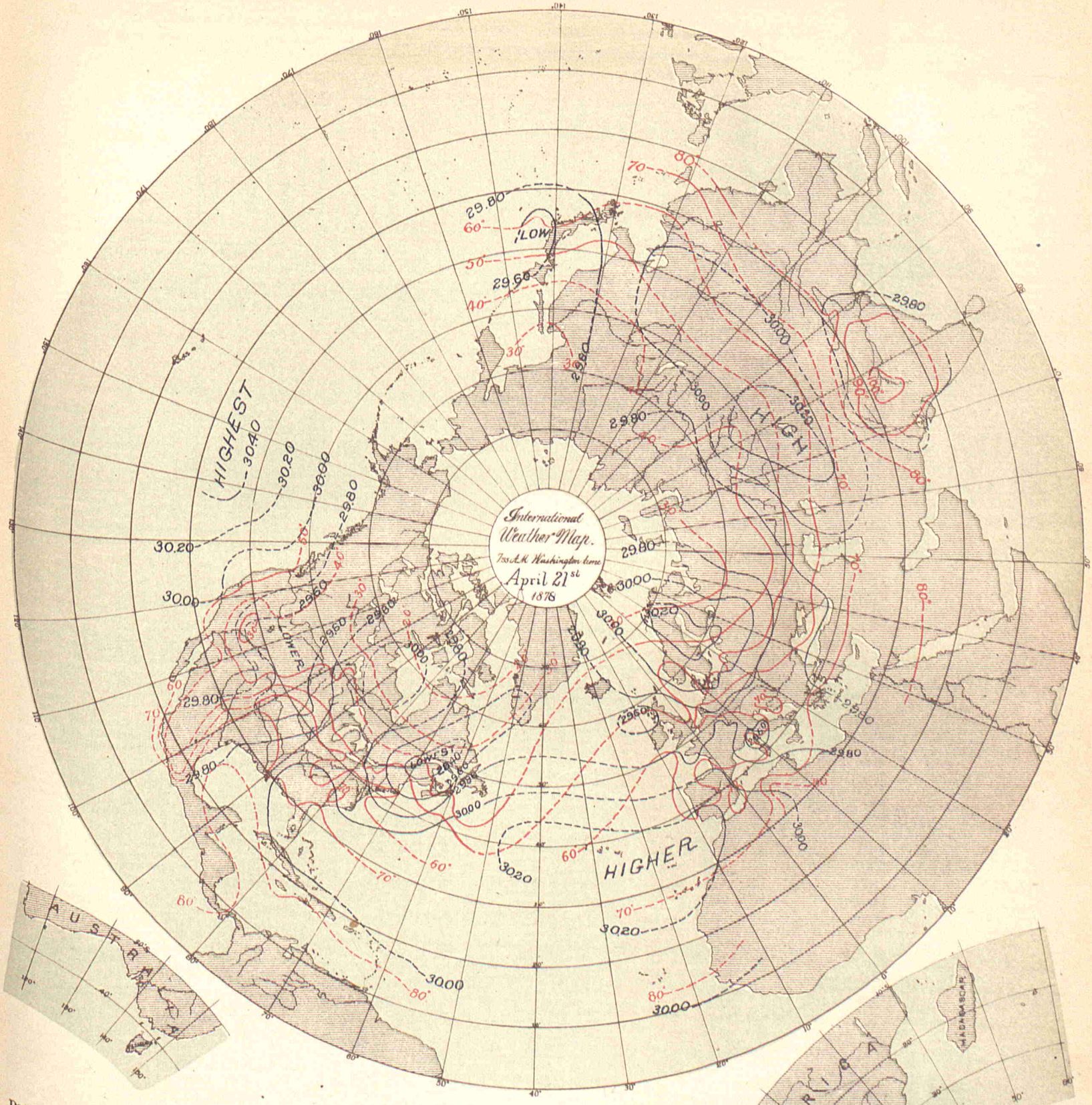
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.64 | 752.8 | 29.74 | 755.4 | 45.0 | 7.2 | ..... | SSE | 17 | 7.6 | ..... | ..... | ..... | ..... | ..... | 0.010 | 0.25 | Dense fog.... | W. Boswell. |
| Ardrossan | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.65 | 753.1 | 54.1 | 12.3 | ..... | ENE | 7 | 3.1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.62 | 752.3 | 53.6 | 12.0 | ..... | ESE | 20 | 8.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 29.64 | 752.8 | 53.5 | 11.9 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds..... | J. L. E. Dreyer. |
| Bradford, Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.84 | 21.3 | ..... | J. McLandsborough. |
| Bridgetown, (Barbados) | ..... | ..... | 29.92 | 760.0 | 83.0 | 28.3 | ..... | NE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.69 | 754.1 | 57.0 | 13.9 | ..... | SSE | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | H. Todd. [H.C. |
| Cardington | ..... | ..... | 29.67 | 753.6 | 58.0 | 14.4 | ..... | S | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | John McLaren. |
| Chatham, School M. E | 29.59 | 751.6 | 29.72 | 754.9 | 56.2 | 13.4 | ..... | NE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds .... | Q. M. Serg., Geo. Stuart, R. E. |
| Dartmoor | 28.11 | 714.0 | 29.57 | 751.1 | 48.0 | 8.9 | ..... | SW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Alexander Watt. |
| Donaghadee | 29.63 | 752.6 | 29.66 | 753.4 | 54 | 12.2 | ..... | NNE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds .. | J. Mac Gowan. |
| Dover | 29.73 | 755.1 | 29.75 | 755.6 | 54 | 12.2 | ..... | SE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ⅛ clouded.. | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.63 | 752.6 | 54.7 | 12.6 | ..... | SE | 3.8 | 1.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | Thomas Mackereth. |
| Falmouth, Observatory | 29.37 | 746.0 | 29.60 | 751.8 | 50.2 | 10.1 | ..... | WNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | The Staff. |
| Fort Napier, (Natal) | 27.59 | 700.8 | 29.80 | 756.9 | 70.2 | 21.2 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.71 | 754.6 | 29.94 | 760.5 | 89.0 | 31.7 | ..... | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | |
| Galway, Queen's College | ..... | ..... | 29.62 | 752.3 | 54 | 12.2 | ..... | S | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.14 | 765.5 | 30.19 | 766.8 | 66.5 | 19.2 | ..... | W | ..... | ..... | 5 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Corpl. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.44 | 747.8 | 29.64 | 752.8 | 54.7 | 12.6 | ..... | NNE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | Blue sky..... | D. G. Maclean. |
| Great Yarmouth | 29.74 | 755.4 | 29.75 | 755.6 | 50 | 10.0 | ..... | SSE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.52 | 749.8 | 29.68 | 753.9 | 60.7 | 15.9 | ..... | SSW | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff, for G. B. Airy. |
| Guernsey | 29.41 | 747.0 | 29.62 | 752.3 | 50 | 10.0 | ..... | SSW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | Blank | Blank | D. clouds..... | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 29.61 | 752.1 | 53 | 11.7 | ..... | NW | ..... | ..... | 2 | ..... | 2ck | ..... | ..... | 0.12 | 3.0 | Fine..... | M. P. Moyle. |
| Holyhead | 29.56 | 750.8 | 29.62 | 752.3 | 55 | 12.8 | ..... | E | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | John Tilston. |
| Jersey | 29.40 | 746.7 | 29.69 | 754.1 | 48.5 | 9.2 | ..... | SW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | Blank | Blank | Threatening | J. Fisher. |
| Kew, Observatory | ..... | ..... | 29.69 | 754.1 | 57.5 | 14.2 | ..... | S | 23 | 10.3 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff. |
| Kingstown | 29.58 | 751.3 | 29.61 | 752.1 | 52 | 11.1 | ..... | E | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.66 | 753.4 | 52.0 | 11.1 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.69 | 754.1 | 29.77 | 756.1 | 68.0 | 20.0 | ..... | NW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Sgt. Fred. Travis, A. H. |
| Nairn | 29.53 | 750.0 | 29.62 | 752.3 | 58 | 14.4 | ..... | ENE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded... | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 30.06 | 763.5 | 77.0 | 25.0 | ..... | SE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.. .. | C. S. Duncombe. |
| Nottingham, Observatory | 29.50 | 749.3 | 29.68 | 753.9 | 53.5 | 11.9 | ..... | SSE | ..... | ..... | 3 | ..... | 10k;d | ..... | SSE;E | 0.048 | 1.22 | Overcast..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.11 | 739.4 | 29.62 | 752.3 | 54.0 | 12.2 | ..... | SE | ..... | ..... | 3-4 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.65 | 753.1 | 57 | 13.9 | ..... | SE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | Mr. Lucas. |
| Plymouth | 29.48 | 748.8 | 29.55 | 750.6 | 50.8 | 10.4 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | John Merrifield. |
| Roche's Point | 29.57 | 751.1 | 29.62 | 752.3 | 54 | 12.2 | ..... | N | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | Cloudy..... | W. Kennedy. |
| Saint Ann's Head | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | John C. Walker. |
| Sandwick Manse, (Orkneys.) | ..... | ..... | 29.75 | 755.6 | 47.9 | 8.8 | ..... | SE | 40 | 17.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.76 | 755.9 | 61.4 | 16.3 | ..... | SW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds..... | Sergt. W. H. Lyne. |
| Sheffield | 29.40 | 746.7 | 29.68 | 753.9 | 53.9 | 12.2 | ..... | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Overcast..... | W. F. Cooper. |
| Silloth Rectory | 29.62 | 752.3 | 29.65 | 753.1 | 61.4 | 16.3 | 69 | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.27 | 743.4 | 29.67 | 753.6 | 54.9 | 12.7 | ..... | E | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | Misty..... | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 29.57 | 751.1 | 50 | 10.0 | ..... | E | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded... | John Sutherland. |
| Stratfield Turgiss | 29.46 | 748.3 | 29.67 | 753.6 | 57.0 | 13.9 | ..... | S | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Showery .... | Rev. C. H. Griffith, F.M |
| Thurso | ..... | ..... | 29.68 | 753.9 | 47 | 8.3 | ..... | ESE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 29.63 | 752.6 | 56 | 13.3 | ..... | NW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 29.68 | 753.9 | 54.8 | 12.7 | ..... | NNW | 11 | 4.9 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Hazy..... | The Staff. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.62 | 752.3 | 68.5 | 20.3 | 88 | NE | ..... | ..... | 3 | ..... | 10kn | ..... | ..... | 0.01 | 0.3 | Covered ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.76 | 755.9 | 29.94 | 760.6 | 79.3 | 26.3 | 67 | ESE | 10.5 | 4.7 | ..... | 2 | 4 | ..... | ENE | 0 | 0 | Fine..... | C. Meldrum. |
| Melbourne, Observatory | 29.76 | 755.9 | 29.85 | 758.2 | 59.8 | 15.4 | 87 | N | 16 | 8.5 | ..... | ..... | 10 | ..... | ..... | 0.25 | 6.3 | Raining..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 p. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m.

| MARINE SERIES. VESSELS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Algeria, N. 41° 50', W. 51° 5' | ..... | ..... | 30.19 | 766.8 | 43 | 6.1 | WNW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 15* | NE | Blue sky..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. C. Prehn. |
| S. S. Naid | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. Smith. [R. |
| S. S. Peruvian, N. 44° 20' W. 58° 20' | ..... | ..... | 29.95 | 760.7 | .36 | 2.2 | S | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 3 | SSW | Foggy ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Longley. |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | | | | | | | | | | | | | | | | | | | |
| San Jose | 26.23 | 666.2 | | | 72.5 | 22.5 | 74 | SE | | | 3 | 7ck | 1s | E | | 0 | 0 | | Mr. Ansart. |
| | | | | | | | | | | | | | | | | | | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.04 | 763.1 | 30.09 | 764.3 | 45.7 | 7.6 | 60 | E | | | 7 | | 0 | | | | | | |
| Fanöe | 29.93 | 760.3 | 29.95 | 760.8 | 54.0 | 12.2 | 66 | ESE | | | 6 | | 1 | | | | | | |
| Godthaab, (Greenland) | 29.52 | 749.7 | 29.56 | 750.8 | 27.7 | — 2.4 | 77 | S | | | 2 | | 1 | | | | | | |
| Stykkisholm, (Iceland) | 29.63 | 752.7 | 29.68 | 753.8 | 46.6 | 8.1 | 86 | SE | | | 2 | | 8 | | | | | | |
| Thorshavn, (Faröe) | 29.86 | 758.5 | 29.90 | 759.4 | 49.1 | 9.5 | 83 | ESE | | | 4 | | 7 | | | | | Raining | |
| Vestervig | 29.86 | 758.4 | 30.03 | 762.7 | 54.7 | 12.6 | 68 | E | | | 7 | | 0 | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.26 | 743.1 | 29.81 | 757.1 | 59.0 | 15 | 72 | SSW | | | 3 | | 10 | | | 0.138 | 3.5 | Covered | Collignon, Director. |
| Amiens, Normal School | | | | | | | | | | | | | | | | | | | Bonvarne, Director. |
| Avignon, Normal School | 29.69 | 754.2 | 29.77 | 756.2 | 58.6 | 14.8 | 61 | N | | | 6 | | 10 | | | 1.000 | 25.4 | Covered | Mr. Giraud, Director |
| Bar-sur-Seine | 29.27 | 743.5 | 29.83 | 757.6 | 54.5 | 12.5 | 64 | NW | | | 2 | | 10n | | NW | 0.146 | 3.7 | Covered | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 60.1 | 15.6 | 61 | S | | | 1 | | 10 | | WSW | 0 | 0 | Covered | Normal School. |
| Besançon | 28.95 | 735.3 | 29.81 | 757.9 | 53.8 | 12.1 | 74 | WSW | | | 2 | | 8 | | W | 0.661 | 16.8 | Very cloudy | Normal School. |
| Bourg-en-Bresse | 29.01 | 736.8 | 29.92 | 760.0 | 52.2 | 11.2 | 75 | N | | | 2 | | 10n | | N | 1.06 | 27. | Covered | Normal School. |
| Bourges, Normal School | 29.27 | 743.4 | 29.82 | 757.3 | 56.3 | 13.5 | 91 | SSW | | | 3 | | 5 | | SW | 0.020 | 0.5 | Partly cl'dy | A. Wagner, Director. |
| Brest, Naval Observatory | 29.43 | 747.6 | 29.65 | 753.2 | 55.6 | 13.1 | 66 | WSW | | | 5 | | 8 | | WSW | 0.098 | 2.50 | Squally | The Staff. |
| Carcassonne, Normal School | 29.49 | 749.1 | 29.91 | 759.6 | 54.3 | 12.4 | 70 | W | | | 6 | | 10 | | WNW | 0.650 | 16.5 | Raining | Vateau, Director. |
| Caen | | | | | | | | | | | | | | | | | | | Normal School. |
| Chartres, Normal School | 29.17 | 740.9 | 29.73 | 755.2 | 49.8 | 9.9 | 86 | NW | | | 3 | | 10 | | N | 0.126 | 3.2 | Covered | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.48 | 748.8 | 29.80 | 756.9 | 51.8 | 11.0 | 90 | SW | | | 3 | | 5 | | SW | 0.150 | 3.8 | Cloudy | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.47 | 723.1 | 29.81 | 757.2 | 57.7 | 14.3 | 45 | NW | | | 2 | | 10 | | NW | 0.169 | 4.3 | Covered | Alluard, Director. |
| Commercy, Normal School | 28.96 | 735.5 | 29.83 | 757.7 | 53.6 | 12 | 79 | W | | | 2 | | 10 | | W | 0.579 | 14.7 | Covered | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.79 | 731.3 | 29.93 | 760.3 | 55.6 | 13.1 | 52 | NW | | | 6 | | 5 | | NW | 1.083 | 27.5 | ½ covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 29.64 | 752.8 | 29.85 | 758.1 | 58.3 | 14.6 | 72 | W | | | 4 | | 8 | | W | 0.059 | 1.5 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.50 | 749.3 | 29.81 | 757.1 | 56.7 | 13.7 | 69 | W | | | 2 | | 8 | | W | 0.051 | 1.3 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 28.91 | 734.4 | 29.83 | 757.6 | 53.6 | 12 | 86 | S | | | 3 | | 10 | | S | 1.18 | 30. | Covered | Voudez, Director. |
| Lorient, Naval Observatory | 29.66 | 753.4 | 29.76 | 755.9 | 55.4 | 13.0 | 86 | WSW | | | 4 | | 8 | | W | 0.047 | 1.2 | ¾ Covered | T. Carré, Director. |
| Mâcon, Normal School | 29.15 | 740.3 | 29.80 | 757.0 | 55.0 | 12.8 | 76 | W | | | 2 | | 10 | | | 0.811 | 20.6 | Covered | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | 28.75 | 730.2 | 29.79 | 756.7 | 51.4 | 10.8 | 74 | W | | | 2 | | 10 | | NW | 0.28 | 7. | Covered | Normal School. |
| Nismes, Normal School | 29.57 | 751.1 | 29.77 | 756.2 | 59.4 | 15.2 | 76 | NE | | | 2 | | 0 | | | 0 | 0 | Clear | Boyer, Director. |
| Orleans, Normal School | 29.45 | 748.0 | 29.82 | 757.4 | 54.3 | 23.5 | 75 | SW | | | 2 | | 5 | | W | 0 | 0 | Cloudy | Bernard, Director. |
| Paris, Observatory | 29.56 | 750.7 | 29.79 | 756.7 | 57.9 | 14.4 | 57 | S | | | 1 | | 10 | | WSW | 0.027 | 0.68 | Covered | National Observatory. |
| Privas | 28.75 | 730.2 | 29.80 | 756.8 | 60.8 | 16 | 64 | NNW | | | 6 | | 2 | | NNW | 0.098 | 2.5 | Slightly cl'dy | Normal School |
| Puy de Dome (Summit) | | | | | | | | | | | | | | | | | | | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.87 | 758.7 | 29.90 | 759.5 | 59.9 | 15.5 | 47 | W | | | 6 | | 2 | | W | 0.16 | 4. | ¼ covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.66 | 753.3 | 29.74 | 755.5 | 62.4 | 16.9 | 58 | SW | | | 2 | | 8 | | SW | 0.181 | 4.6 | Very cloudy | F. Lucard, Director |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | M. H. Hercouet |
| Tarbes, Normal School | 28.91 | 734.2 | 29.98 | 761.4 | 59.7 | 15.4 | 67 | W | | | 4 | | 10 | | | 0.16 | 4. | Raining | T. Hugues, Director |
| Villefranche | | | | | | | | | | | | | | | | | | | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.76 | 756.0 | 29.79 | 756.7 | 82.8 | 28.2 | | | | | | | | | | | | | |
| Lyons | | | 29.85 | 758.3 | 55.8 | 13.2 | 68 | | | | | | | | | 1.18 | 30. | | L'Abbé Marchési. |
| Marseilles, Observatory | | | 29.69 | 754.2 | 57.2 | 14.0 | 53 | WNW | | | 3–4 | | 10 | | | 0.24 | 6. | Rainy | M. Jeys. |
| Mont-Louis | 24.71 | 627.6 | 30.02 | 762.6 | 43.2 | 6.2 | 40 | WSW | 14.9 | 6.66 | | | 7 | | | 0 | 0 | Cloudy | The Staff. |
| Nice | | | 29.61 | 752.2 | 60.4 | 15.8 | 79 | E | | | | | 2 | | W | 0.051 | 1.3 | | Mr. Falguère. |
| Paris, Montsouris Obs'y | 29.51 | 749.6 | 29.79 | 756.6 | 58.5 | 14.7 | 63 | SW | | | 4 | | 5 | | | 0 | 0 | Cloudy | Dr. A. Niepce. |
| Perpignan | | | 29.92 | 760.0 | 58.1 | 14.5 | 49 | NW | 26.1 | 11.67 | 2 | | 10 | | SW | 0.008 | 0.2 | | Marié Davy, Director |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | 4 | | NW | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Plantade,) H. P. | 22.35 | 567.7 | | | 31.6 | — 0.2 | | NW | | | | | | | | | | | M. Baylac. |
| Saint Maur, (near Paris) | 29.56 | 750.8 | 29.72 | 755.0 | 58.5 | 14.7 | 63 | S | | | 6 | | 10 | | | 1.705 | 43.3 | Snowy | Gen'l de Nansouty |
| Toulouse, Observatory | 29.27 | 743.5 | 29.99 | 761.8 | 53.8 | 12.1 | 69 | W | | | 1 | | 10 | | | 0.012 | 0.3 | Covered | E. Renou. |
| Tours | 29.61 | 752.2 | 29.81 | 757.2 | 59.4 | 15.2 | 61 | W | | | 4 | | 3 | | | 0.152 | 3.85 | Raining | The Staff. |
| Versailles, (near Paris) | | | 29.80 | 756.8 | 61.2 | 16.2 | 49 | W | | | 3 | | 5 | | W | 0.004 | 0.1 | | C. Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 29.93 | 760.2 | 29.95 | 760.8 | 58.5 | 14.7 | 92 | E | 2.9 | 1.3 | 1 | | 8 | | | 0.063 | 1.60 | Cloudy | Dr. A. Bérigny. |
| | | | | | | | | | | | | | 10kn | | | 0 | 0 | Covered | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,368 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–7 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.85 | 732.9 | 29.69 | 754.1 | 68.4 | 20.2 | 54 | E | ..... | ..... | 6 | ..... | 4 | E | ..... ..... | 0 | 0 | ..... | Prof. Dr. Hoh. |
| Berlin | 29.72 | 754.9 | 29.89 | 759.2 | 59.4 | 15.2 | 64 | E | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.028 | 0.7 | Foggy ..... | Prof. Arndt. |
| Breslau | 29.36 | 745.7 | 29.89 | 759.1 | 59.9 | 15.5 | 73 | E | ..... | ..... | 3 | ..... | 9 | ..... | ..... | Blank | Blank | ..... | Royal University Obs'y |
| Carlsruhe | 29.28 | 743.8 | 29.71 | 754.5 | 58.6 | 14.8 | 81 | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.098 | 2.5 | ..... | Albert Senz. |
| Cassel | 29.22 | 742.2 | 29.82 | 757.5 | 65.8 | 18.8 | 48 | E | ..... | ..... | 2 | ..... | 2 | E | ..... | 0 | 0 | ..... | Dr. H. Möhl. |
| Crefeld | 29.59 | 751.6 | 29.75 | 755.7 | 67.7 | 14.3 | 81 | W | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0.16 | 4. | ..... | Director Lose. |
| Emden | 29.78 | 756.4 | 29.82 | 757.3 | 64.9 | 18 3 | 56 | E | ..... | ..... | 3 | ..... | 0 | ..... ..... | ..... | 0 | 0 | ..... | Prof. Prestel. |
| Frankfort on the Main | 29.35 | 745.6 | 29.71 | 754.5 | 67.6 | 19.8 | 33 | NNE | ..... | ..... | 1 | ..... | 7 | ..... | ..... | Inap. | Inap. | ..... | Physical Society. |
| Friedrichshafen | 28.34 | 719.7 | 29.76 | 756.0 | 51.1 | 10.6 | 81 | WNW | ..... | ..... | 4 | ..... | 10 | NW | ..... | 0.465 | 11.8 | Raining..... | M. Wilhelm. |
| Hamburg | 29.84 | 757.8 | 29.91 | 759.6 | 57.2 | 14.0 | 71 | E | ..... | ..... | 4 | ..... | 10ks | ..... | ..... | 0 | 0 | Fair..... | Captain F. Hegemann. |
| Kiel | 29.93 | 760.3 | 29.95 | 760.7 | 49.6 | 9.8 | 76 | ENE | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.99 | 761.8 | 30.08 | 763.9 | 53.2 | 11.8 | 40 | E | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. E Luther |
| Köslin | ..... | ..... | 29.97 | 761.1 | 56.3 | 13.5 | ..... | NE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | H. Müller. |
| Leipsic, Observatory | 29.42 | 747.2 | 29.83 | 757.7 | 61.2 | 16.2 | 53 | ENE | ..... | ..... | 6 | ..... | 2 | E | ..... | 0 | 0 | ..... | Prof. Bruhns. |
| Memel, Naval School | 30.08 | 764.0 | 30.13 | 765.2 | 49.6 | 9.8 | 30 | NE | ..... | ..... | 3 | ..... | 3ck | NW | ..... | ..... | ..... | Squally..... | Reinbrecht von Skalweit. |
| Neufahrwasser | 30.07 | 763.7 | 30.08 | 764.1 | 46.2 | 7.9 | 71 | NNE | ..... | ..... | 3 | ..... | 2 | ..... ... | ..... | 0 | 0 | ..... | A. Lothes. |
| Posen | 29.69 | 754.0 | 29.97 | 761 3 | 58.6 | 14 8 | 60 | SE | ..... | ..... | 6 | ..... | 10 | ..... ..... | ..... | 0.020 | 0.5 | ..... | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.21 | 742.0 | 29.76 | 755.9 | 51.8 | 11.0 | 94 | NW | ..... | ..... | 3 | ..... | 10 | NW | ..... | 0.473 | 12.03 | ..... ..... | Dr. Schur. |
| Stuttgart | 28.73 | 729.8 | 29.65 | 753.0 | 51.8 | 11.0 | 50 | N | ..... | ..... | 1 | ..... | ·8 | E | ..... | 0.521 | 13.3 | Thunder-storm... | Prof. Schoder. |
| Treves, (Trier) | 29.15 | 740.3 | 29.66 | 753.4 | 57.9 | 14.4 | 69 | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.098 | 2.48 | Foggy ..... | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.20 | 716.2 | 29.64 | 752.8 | 62.1 | 16.7 | 51 | ENE | 7 | 3 | ..... | ..... | 9ck | ..... | E | 0 | 0 | ..... | Dr. Von Bebber. |
| Wustrow, Naval School | 30.00 | 761.9 | 30.04 | 762.9 | 50.9 | 10.5 | 68 | E | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.39 | 746.6 | 29.78 | 756.3 | 73.2 | 22.9 | ..... | SW | ..... | ..... | 2.0 | ..... | ..... | ..... ..... | ..... ... | ..... | ..... | Clear..... | Dr. J. F. J. Schmidt. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.74 | 755.5 | 29.79 | 756.8 | 81.1 | 27.3 | 80 | SW | 36? | 16.1? | ..... | ..... | 5 | ..... | ..... | 0 | 0 | D. clouds..... | |
| Deesa | 29 32 | 744.6 | 29.78 | 756.3 | 97.2 | 36.2 | 33 | W | ..... | ..... | ..... | ..... | 7 | WNW | ..... | 0 | 0 | D. clouds..... | |
| Bombay | 29.77 | 756.1 | 29.80 | 757.0 | 83.5 | 28.6 | 81 | WNW | 21 | 9.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | |
| Poona | 27.79 | 705.8 | 29.73 | 755.2 | 92 | 33.3 | 41 | NW | ..... | ..... | ..... | ..... | 1 | ..... | ..... | 0 | 0 | Dust-whirl.. | |
| Lahore | 29.06 | 736.5 | 29.72 | 755.0 | 91.1 | 32.8 | 27 | Calm | 4.5 | 2.0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Blue sky..... | |
| Belgaum | 27.30 | 693.5 | 29.80 | 756.9 | 84.4 | 29.1 | 70 | W | 20 | 8.9 | ..... ..... | ..... | 1 | ..... | W | 0 | 0 | Misty..... | |
| Bangalore | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ... | ..... | ..... | ..... | ..... | ..... | |
| Roorkee | 28.82 | 732.0 | 29.69 | 754.2 | 90.8 | 32.7 | 36 | Calm | 1.4 | 0.6 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Agra | 29.15 | 740.3 | 29.69 | 754.0 | 101.6 | 38.7 | 17 | SE | ..... | ..... | ..... | ..... | 8 | S | ..... | 0 | 0 | ..... | |
| Trichinopoly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Nagpur | 28.69 | 728.7 | 29.70 | 754.3 | 97.5 | 36.4 | 26 | Calm | 3.8 | 1.7 | ..... | ..... | 8 | ..... | SE | 0 | 0 | D. clouds..... | |
| Madras | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Lucknow | 29.33 | 744.9 | 29.69 | 754.0 | 99.1 | 37.3 | 39 | SSW | 2.1 | 0.9 | ..... | ..... | 9 | SW | ..... | 0 | 0 | D. clouds..... | |
| Allahabad | 29.38 | 746.3 | 29.68 | 753.9 | 95.7 | 35.4 | 30 | Calm | 0.8 | 0.4 | ..... | ..... | 7 | W | ..... | 0 | 0 | D. clouds..... | |
| Patna | 29.49 | 748.9 | 29.66 | 753.4 | 96.2 | 35.7 | 25 | W | 1.4 | 0.6 | ..... | ..... | 4 | W | W | 0 | 0 | D. clouds..... | |
| Hazaribagh | 27.76 | 705.0 | 29.72 | 754.8 | 91.3 | 32.9 | 21 | WNW | 6 | 2.7 | ..... | ..... | 3 | ..... ..... | W | 0 | 0 | ..... | |
| Cuttack | 29.66 | 753.4 | 29.74 | 755.5 | 90.1 | 32.3 | 43 | SSW | 9.1 | 4.1 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Blue sky.. ... | |
| Calcutta (Alipore) | 29.74 | 755.5 | 29.76 | 756.0 | 85.7 | 29.8 | 59 | S | 8 | 3.6 | ..... | ..... | ... ... | ..... | ..... | 0 | 0 | Blue sky..... | |
| Goalpara | 29.37 | 746.1 | 29.76 | 756.0 | 80.4 | 26.9 | 68 | E | 2.3 | 1.0 | ..... | ..... | 10 | ..... | SW | 0.02 | 0.5 | Thunder.. ... | |
| Chittagong | 29.74 | 755.3 | 29.83 | 757.6 | 84.4 | 29.1 | 71 | WSW | 6.2 | 2 8 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Blue sky..... | |
| Sibsagar | 29.46 | 748.2 | 29.79 | 756.7 | 82.8 | 28.2 | 70 | NW | 1.1 | 0.5 | ..... ... | ..... | 8 | W | W | 0 | 0 | D. clouds..... | |
| Rangoon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Jubbulpore | 28.42 | 721.8 | 29.75 | 755.6 | 93 | 33.9 | 17 | NW | 2.5 | 1.1 | ..... | ..... | 6 | W | ..... | 0 | 0 | D. clouds..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 1—10 | Clouds. Amount. Up'er 1—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.24 | 742.6 | 29.64 | 752.9 | 61.7 | 16.5 | 71 | SW | 3.1 | 1.4 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 29.50 | 749.4 | 29.61 | 752.1 | 56.3 | 13.5 | 91 | E | 17.4 | 7.8 | ..... | ..... | 10 | E | ..... | 0.870 | 22.1 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.45 | 747.9 | 29.63 | 752.7 | 54.9 | 12.7 | 92 | E | 8.7 | 3.9 | ..... | ..... | 10 | E | ..... | 0.307 | 7.8 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.34 | 719.7 | 29.64 | 752.8 | 56.8 | 13.8 | 78 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.102 | 2.6 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.10 | 739.2 | 29.61 | 752.1 | 57.6 | 14.2 | ..... | ENE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.606 | 15.4 | ..... | Prof. Schiaparelli. |
| Moncalieri | 28.74 | 730.1 | 29.64 | 752.9 | 47.7 | 8.7 | 96 | NNW | 5.6 | 2.5 | ..... | ..... | 10 | N | ..... | 2.520 | 63.5 | ..... | Prof. P. F. Denza. |
| Mondovi | 27.75 | 704.9 | 29.65 | 753.1 | 46.2 | 7.9 | 86 | NNE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 1.248 | 31.7 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.36 | 745.8 | 29.58 | 751.4 | 59.4 | 15.2 | 73 | SW | ..... | ..... | 2 | ..... | 10 | SW | ..... | 0.961 | 24.4 | ..... | Prof. L. Vassallo. |
| Genoa | 29.39 | 746.5 | 29.56 | 750.8 | 59.9 | 15.5 | 56 | N | 6.3 | 2.8 | ..... | ..... | 10 | W | ..... | 1.079 | 27.4 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.30 | 744.2 | 29.61 | 762.1 | 57.2 | 14.0 | 89 | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.827 | 21.0 | ..... | Prof. P. Pigorini. |
| Florence | 29.33 | 744.9 | 29.58 | 751.3 | 60.8 | 16.0 | 79 | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.984 | 25.0 | ..... | Cav. F. Meucci. |
| Leghorn | 29.50 | 749.2 | 29.58 | 751.3 | 60.4 | 15.8 | 71 | W | 13.0 | 5.8 | ..... | ..... | 7 | ENE | ..... | 0.650 | 16.5 | ..... | Prof. P. Monte. |
| Pesaro | 29.55 | 750.5 | 29.60 | 751.7 | 58.1 | 14.5 | 92 | E | 6.3 | 2.8 | ..... | ..... | 10 | SE | ..... | 0.059 | 1.0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.05 | 712.4 | 29.59 | 751.5 | 59.0 | 15.0 | 63 | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.807 | 20.5 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.48 | 748.8 | 29.59 | 751.6 | 55.2 | 12.9 | 86 | N | ..... | ..... | 2 | ..... | 9 | N | ..... | 0.374 | 9.5 | ..... | Avv. P. Ponticelli. |
| Rome | 29.45 | 748.0 | 29.62 | 752.4 | 61.2 | 16.2 | 76 | S | 11.9 | 5.3 | ..... | ..... | 10 | ..... | ..... | 0.492 | 12.5 | ..... | Prof. P. G. S. Ferrar |
| Naples, O. U | 29.49 | 749.0 | 29.69 | 754.0 | 68.0 | 20.0 | 61 | WSW | ..... | ..... | 4 | ..... | 7 | S | ..... | 0.028 | 0.7 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 66.2 | 19.0 | 68 | S | 30.4 | 13.6 | ..... | ..... | 7 | S | ..... | 0.059 | 1.5 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.51 | 749.5 | 29.70 | 754.4 | 59.9 | 15.5 | 51 | NW | ..... | ..... | 6 | ..... | 6 | NW | ..... | 0.480 | 12.2 | ..... | Prof. A. Pacinotti. |
| Cosenza | 28.85 | 732.9 | 29.72 | 755.0 | 65.5 | 18.6 | 75 | NE | 3.8 | 1.7 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.43 | 747.6 | 29.69 | 754.0 | 70.0 | 21.1 | 34 | WSW | 6.3 | 2.8 | ..... | ..... | 10 | ..... | ..... | 0.138 | 3.5 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.59 | 751.5 | 29.66 | 753.4 | 66.2 | 19.0 | 66 | NNE | ..... | ..... | 1 | ..... | 10 | W | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.13 | 740.0 | 29.69 | 754.1 | 63.7 | 17.6 | 63 | WSW | 3.8 | 1.7 | ..... | ..... | 8 | W | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nagasaki | | | | | | | | | | | | | | | | | | | |
| Tokei (Yeddo) | 29.50 | 749.3 | 29.57 | 751.1 | 58.3 | 14.6 | 89 | SSW | 7.3 | 3.3 | ..... | ..... | 9s | ..... | ..... | 0.005 | 0.13 | Cloudy | The Observatory. |
| Tokei (Yeddo) University | 29.46 | 748.3 | 29.56 | 750.8 | 60 | 15.6 | 88 | SSW | 6 | 2.7 | ..... | 1cs | 6ks | ..... | ..... | 0 | 0 | Fair. | Prof. P. V. Veeder. |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 69.4 | 20.8 | 37 | N | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy.. | L. Castillo, A. E. |
| Guadalajara | 25.04 | 636.1 | 30.09 | 764.3 | 48.2 | 9.0 | 57 | S | 0.9 | 0.4 | ..... | 0 | 5 | ..... | SW | 0 | 0 | ½ cloudy.... | Prof. L. Perez. |
| Guanajuato | ..... | ..... | ..... | ..... | 63.7 | 17.6 | 49 | NW | 0.9 | 0.4 | ..... | 1c | 0 | ..... | ..... | 0 | 0 | Hazy..... | Prof. V. Fernandez |
| Leon | 23.08 | 586.2 | 30.13 | 765.3 | 51.1 | 10.6 | 45 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy..... | Prof. M. Leal. |
| Mexico | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 56.7 | 13.7 | 47 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy..... | I. Orozco, M. D. |
| Puebla | 23.35 | 593.1 | 30.07 | 763.7 | 54.3 | 12.4 | 67 | N | 6.0 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy..... | M. V. de Leon, M. E. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Very hazy.. | Prof. B. Gonzalez. |
| Tlacotalpam | 29.82 | 757.5 | 29.83 | 757.8 | 75.2 | 24.0 | 83 | S | 5.1 | 2.3 | ..... | 0 | 0 | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Hazy..... | Prof. F. R. Bayly. |
| Vera-Cruz | 29.77 | 756.2 | 29.80 | 756.9 | 77.0 | 25.0 | 72 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Zacatecas | ..... | ..... | ..... | ..... | 57.2 | 14.0 | 54 | S | 0.9 | 0.4 | ..... | 5 | 0 | ..... | ..... | 0 | 0 | Very hazy.. | Prof. J. Rossell. |
| Puebla, (Catholic Institute) | 23.29 | 591.6 | 30.03 | 762.8 | 53.6 | 12.0 | 49 | NE | 0.2 | 0.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | ½ cloudy.... | J. A. Bonilla, M. E. |
| Morelia | 24.04 | 610.5 | ..... | ..... | 59.0 | 15.0 | 60 | S | 6.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy..... | P. Spina. [M.M. D. D |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Hazy..... | M. Tena, F. L. Param. |
| | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.1 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,519 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | | | | | | | | | | | | | | | | | | | |
| Groningen | 29.79 | 756.7 | 29.79 | 756.7 | 62.6 | 17.0 | ..... | S | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0.079 | 2.0 | ..... | |
| Helder | 29.75 | 755.7 | 29.81 | 757.1 | 62.1 | 16.7 | ..... | ESE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 29.78 | 756.4 | 29.78 | 756.4 | 58.3 | 14.6 | ..... | ESE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Utrecht | 29.76 | 755.9 | 29.76 | 755.9 | 62.2 | 16.8 | 72 | SW | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| | 29.74 | 755.4 | 29.79 | 756.6 | 61.5 | 16.4 | 65 | SSE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.028 | 0.7 | Very cloudy | H. v d Brink. |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer: Corrected for instrumental error and temperature. Inches. | Barometer: Corrected for instrumental error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.98 | 761.6 | 30.04 | 763.0 | 59.4 | 15.2 | 45 | NNE | 6.5 | 2.9 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 30.13 | 765.2 | 30.17 | 766.2 | 42.8 | 6.0 | 70 | NNE | 9 | 4 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 30.03 | 762.7 | 30.17 | 766.4 | 51.3 | 10.7 | 63 | SW | 2 | 1 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 30.18 | 766.6 | 30.23 | 767.7 | 30.9 | — 0.6 | 73 | SW | 4 | 2 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.10 | 764.6 | 30.29 | 769.4 | 63.7 | 17.6 | 92 | WSW | 3.1 | 1.4 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.20 | 741.7 | 30.23 | 767.8 | 61.7 | 16.5 | 46 | WNW | 9.8 | 4.4 | ..... | ..... | 9 | WNW | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos |
| Funchal, (Madeira) | 30.27 | 768.8 | 30.35 | 771.0 | 68.7 | 20.4 | 62 | SW | 6.9 | 3.1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.89 | 759.2 | 30.25 | 768.4 | 58.8 | 14.9 | 78 | SW | 19.9 | 8.9 | ..... | ..... | 8 | ..... | ..... | 0.020 | 0.5 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.29 | 769.4 | 30.36 | 771.2 | 66.2 | 19.0 | 87 | WSW | 3.8 | 1.7 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell: Height scale 0-9 | Sea or swell: Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.93 | 760.1 | 29.93 | 760.3 | 86.0 | 30.0 | ..... | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 1 | ..... | Blue sky | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Rio Douro, S. 25° 08′, E. 32° 37′ | ..... | ..... | 29.91 | 759.8 | 80.6 | 27.0 | ..... | NE | ..... | ..... | 4 | ..... | 4 | ..... | NE | 3 | NE | D. clouds | J. T. d'Oliveria, Com'd't. |
| Sado, Porto Praya, Cape Verde Islands. | 30.04* | 763.0* | 30.05* | 763.3* | 85.8 | 29.9 | ..... | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 2 | N | Blue sky | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, St. Paul de Loanda, Lower Guinea | 29.74 | 755.4 | 29.75 | 755.6 | ..... | ..... | ..... | WSW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 1 | ..... | D. clouds | F. Texeira da Silva, Com'd't. |
| Tejo, N. 22° 10′ E. 113° 32′ | ..... | ..... | 29.74 | 755.5 | 83.3 | 28.5 | ..... | SW | ..... | ..... | 4 | ..... | 6n;kn | ..... | SW | 1 | SW | ..... | F. J. Ferreira dos Amas, Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.50 | 749.4 | 29.92 | 760.0 | 59.2 | 15.1 | 52 | ENE | 7 | 3 | ..... | ..... | 2k | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.65 | 753.2 | 30.08 | 764.0 | 48.2 | 9.0 | 33 | E | 7 | 3 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Light clouds | Astronomical Obs. |
| Dorpat | 29.96 | 760.9 | 30.21 | 767.3 | 37.9 | 3.3 | 43 | NNE | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.13 | 765.2 | 30.14 | 765.6 | 35.2 | 1.8 | 55 | NNW | 18 | 8 | ..... | ..... | 10n;ks | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.83 | 757.7 | 30.17 | 766 3 | 32.9 | 0.5 | 94 | N | 18 | 8 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | ..... | Ch. Forsten. |
| Kieff | 29.19 | 741.4 | 29.82 | 757.5 | 50.4 | 10.2 | 59 | NNE | 16 | 7 | ..... | ..... | 4k;ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.67 | 753.6 | 29.74 | 755.4 | 59.0 | 15.0 | 78 | NW | 4 | 2 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.75 | 755.6 | 29.77 | 756.1 | 57.2 | 14.0 | 85 | SSE | 9 | 4 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.43 | 747.4 | 30.00 | 761.9 | 34.0 | 1.1 | 47 | N | 13 | 6 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.45 | 747.9 | 29.65 | 753.0 | 58.8 | 14.9 | 85 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | Blank | Blank | Light clouds | Meteorological Obs. |
| Archangel | 29.90 | 759.4 | 29.92 | 759.9 | 24.4 | — 4.2 | 59 | NNW | 22 | 10 | ..... | ..... | 3ks | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.43 | 722.0 | 29.81 | 757.1 | 65.3 | 18.5 | 54 | SE | 4 | 2 | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 29.95 | 760.6 | 29.86 | 758.5 | 57.4 | 14.1 | 56 | SSE | 16 | 7 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Krotkowo* | 29.19 | 741.3 | 29.67 | 753 5 | 37.2 | 2.9 | 92 | WNW | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light rain | Cand. Fatjanow. |
| Kasan | 29.34 | 745.3 | 29.62 | 752.3 | 35.2 | 1.8 | 90 | NNW | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Graupelnd. | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.68 | 728.4 | 29.63 | 752.7 | 38.7 | 3.7 | 64 | WSW | 13 | 6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.87 | 758.8 | 30.11 | 764.7 | 61.7 | 16.5 | 23 | E | 22 | 10 | ..... | ..... | 10cs | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.58 | 725.9 | 30.28 | 769.0 | 61.2 | 16.2 | 50 | NNE | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light clouds | Michelson. |
| Barnaul | 29.66 | 753.4 | 30.20 | 767.1 | 36.7 | 2.6 | 44 | SW | 22 | 10 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.43 | 747.6 | 29.76 | 755.8 | 47.3 | 8.5 | 87 | S | 11 | 5 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Raining | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 29.91 | 759.7 | 30.05 | 763.3 | 57.2 | 14.0 | 69 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.88 | 708.0 | 29.97 | 761.3 | 37.0 | 2 8 | 54 | NW | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.69 | 754 0 | 29.78 | 756.4 | 44.4 | 6.9 | 90 | W | 4 | 2 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 27.5 | — 2.5 | 68 | SE | 9 | 4 | ..... | ..... | 10s | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.73 | 755.2 | 29.84 | 757.9 | 60.8 | 16 | 43 | W | 7.2 | 3.20 | ..... | 0 | 1k | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.02 | 762.4 | 30.07 | 763.8 | 63.0 | 17.2 | 83 | NW | 4.6 | 2.07 | ..... | 2 | 6 | W | ..... | 0.146 | 3.7 | Almost cov. | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.11 | 688.5 | ..... | ..... | 51.1 | 10.6 | 78 | SW | 13.2 | 5.90 | ..... | ..... | 8 | ..... | ..... | 0.020 | 0.5 | Raining | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.86 | 707.7 | 30.10 | 764.5 | 56.1 | 13.4 | 43 | NW | 15.7 | 7.00 | ..... | 0 | 8 | ..... | ..... | Inap. | Inap. | Almost cov. | The Staff. |
| Murcia, Met. Obs'y | 29.88 | 759.0 | 30.03 | 762.7 | 73.4 | 23.0 | 35 | NNW | 4.8 | 2.14 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | Almost clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.17 | 741.0 | 30.08 | 763.9 | 55.6 | 13.1 | 74 | WSW | 11.2 | 5.00 | ..... | ..... | 10 | ..... | ..... | 0.315 | 8.0 | Covered | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.96 | 761.0 | 30.03 | 762.6 | 73.7 | 23.2 | 67 | ESE | 4.0 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J. |
| San Fernando, Naval Obs'y | 30.17 | 766.3 | 30.27 | 768.8 | 62.8 | 17.1 | 52 | W | 20.1 | 9.0 | ..... | 0 | 1 | ..... | W | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.89 | 759.2 | 29.98 | 761.5 | 75.9 | 24.4 | 74 | SW | 0 | 0 | ..... | ..... | 2c | 1k | E | E | 0 | 0 | Clear | Leonardo de Tejeda, Chief of Engineers. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATION. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.23 | 767.9 | 30.27 | 768.9 | 31.6 | — 0.2 | ..... | N | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.23 | 767.9 | 30.28 | 769.2 | 36.0 | 2.2 | 61 | S | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.19 | 766.9 | 30.24 | 768.2 | 40.3 | 4.6 | 53 | S | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 30.04 | 762.9 | 30.21 | 767 4 | 44.8 | 7.1 | 38 | ENE | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 30.08 | 764.1 | 30.14 | 765.6 | 47.5 | 8.6 | 43 | SE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 30.14 | 765.5 | 30.21 | 767.4 | 44.6 | 7.0 | 44 | SE | 3.4 | 1.5 | ..... | ..... | 10 | ..... | NNW | 0 | 0 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.41 | 721.7 | 29.86 | 758.5 | 46.0 | 7.8 | 76 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.567 | 14.4 | Raining | The Observatory. |
| Zurich | 28 16 | 715.2 | 29.82 | 757.3 | 48.2 | 9.0 | 87 | W | ..... | ..... | 1 | ..... | 10 | ..... | W | 0.589 | 14.8 | Raining | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —2.6 mm.; Thermometer, —5.0 cent.; Relative Humidity, +19 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.83 | 757.6 | 63 0 | 17.2 | 67 | SE | 6 | 2.5 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stéfanidès. |
| Valona | ..... | ..... | 29.79 | 756.6 | 66.7 | 19.3 | ..... | SW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0.71 | 18. | Rainy | A. Bertrand. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria.) Lee Obs'y | 29.70 | 754.4 | 29.82 | 757.4 | 75.9 | 24.4 | 52 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.32 | 744.7 | 29.62 | 752.3 | 51 | 10.6 | ..... | W | 8 | 3.6 | ..... | ..... | 8ks | ..... | W | 0.10 | 2.5 | Cloudy | W. R. Bigg. |
| *Chatham, N B | 29.36 | 745.7 | 29.42 | 747.3 | 41 | 5.0 | 96 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | S | 0.40 | 10.2 | Heavy rain | G. A. Blair. |
| Charlottetown, P. E. Island. | 29.51 | 749.5 | 29.55 | 750.6 | 39 | 3 9 | 91 | SE | 16 | 7.2 | ..... | ..... | 10n | ..... | ..... | 0.085 | 2.16 | Light rain | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.32 | 744.7 | 29.51 | 749.5 | 50.7 | 10.4 | 69 | W | ..... | ..... | 4 | ..... | 10s | ..... | ..... | 0.104 | 2.64 | Overcast | James Smith, M. A. |
| Dalhousie, N. B | 29.20 | 741.7 | ..... | ..... | 35 | 1.7 | 100 | E | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.12 | 3.0 | Raining | H. A. Johnson. |
| Esquimault, B. C | 29.78 | 756.4 | 29.83 | 757.7 | 48.8 | 9.3 | 93 | W | ..... | ..... | ..... | 3k | 0 | ..... | ..... | 0 | 0 | Fair | W. H. Bevis. |
| *Father Point, Quebec | 29.23 | 742.4 | 29.25 | 742.9 | 46 | 7.8 | 84 | SW | 14 | 6.3 | ..... | ..... | 10n | ..... | SW | 0.70 | 17.8 | Cloudy | J. McWilliams. |
| Fredericton, N. B | 29.38 | 746.2 | 29.45 | 748.0 | 42 6 | 5.9 | 92 | SE | 1 | 0.4 | ..... | ..... | 10s | ..... | ..... | 0.38 | 9.7 | Cloudy | Prof. Harrison. |
| *Fort Garry Manitoba | 29.06 | 738.1 | 29.88 | 758.9 | 47 | 8.3 | 93 | S | 4 | 1.8 | ..... | 2c | 2ks | S | S | 0 | 0 | Fair | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.74 | 730.0 | 29.85 | 758.2 | 44.9 | 7.2 | 100 | SE | ... | ..... | 2 | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | James Grant. |
| *Halifax, N. S | 29.51 | 749.5 | 29.64 | 752.8 | 40 | 4.4 | 99 | S | 19 | 8.5 | ..... | ..... | 10n | ..... | ..... | 0.386 | 9.80 | Heavy rain | F. Allison, M. A. |
| Hamilton, Ontario | 29.43 | 747.5 | 29.80 | 756.9 | 48 2 | 9.0 | 69 | SW | ..... | ..... | 3 | 10cs | ..... | ..... | ..... | 0 | 0 | Cloudy | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.93 | 760.2 | 29.96 | 761.0 | 35 | 1.7 | 80 | E | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Overcast | E. Weedon. |
| *Kingston, Ontario | 29.31 | 744.5 | 29.64 | 752.8 | 48 | 8.9 | 74 | W | 18 | 8.0 | ..... | ..... | 10ks | ..... | W | Inap. | Inap. | Cloudy | S. Woods, M. A. |
| Little Glace Bay, N. S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | S | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast | C. H. Rigby. |
| *Montreal, Quebec | 29.25 | 742.9 | 29.44 | 747.8 | 52 | 11.1 | 72 | W | 28 | 12.5 | ..... | ..... | 10ks | ..... | N | 0.01 | 0.3 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.03 | 737.3 | 29.73 | 755.1 | 43 | 6.1 | 67 | NW | 17 | 7.6 | ..... | 5k | 2n | NW | NW | 0 | 0 | Fair | Rev. R. Mosley. |
| Peterboro, Ontario | 28.94 | 735.1 | 29.69 | 754.1 | 42.7 | 5.9 | 83 | W | ..... | ..... | ..... | ..... | 10ks | ..... | ..... | 0.08 | 2.0 | Misty | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.14 | 740.1 | 29.82 | 757.4 | 52 | 11.1 | 73 | NW | 16 | 7.2 | ..... | 5k | 0 | NW | ..... | 0 | 0 | Fair | H. Morgan. |
| Port Hastings, N. S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Peter Grant. |
| Port Stanley, Ontario | 29.20 | 741.7 | 29.84 | 757.9 | 54 | 12.2 | 60 | W | 25 | 11.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | M. Payne. |
| *Quebec, Quebec | 29.329 | 744.77 | 29.32 | 744.7 | 49 | 9.4 | 93 | W | ..... | ..... | ..... | ..... | 10n | ..... | W | 0.24 | 6.1 | Clearing | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.17 | 740.9 | 29.63 | 752.6 | 42 | 5.6 | 79 | NW | 12 | 5.4 | ..... | ..... | 10s | ..... | NW | 0.02 | 0.5 | Cloudy | W. H. McIntyre. |
| St. Andrews, N. B | 29.37 | 746.0 | 29.42 | 747.3 | 45 | 7.2 | 91 | W | 1 | 0.4 | ..... | ..... | 10n | ..... | ..... | 0.39 | 9.9 | Raining | Dr. Gove. |
| St. John, N. B | 29.32 | 744.7 | 29.49 | 749.0 | 41 | 5.0 | 91 | SW | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0.780 | 19.81 | Heavy rain | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.12 | 739.6 | 29.85 | 758.2 | 41 | 5.0 | 82 | NW | 31 | 13.9 | ..... | 2k | 0 | W | ..... | 0 | 0 | Fair | K. Stewart. |
| Stayner, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Inap. | Inap. | ..... | R. J. Cole. |
| Stratford, Ontario | 28.60 | 726.4 | 29.90 | 759.4 | 42.0 | 5.6 | 79 | NW | 17 | 7.6 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Overcast | C. J. MacGregor, M. A. |
| *Sydney, C. B | 29.81 | 757.2 | 29.84 | 757.9 | 40 | 4.4 | 80 | S | 12 | 5.4 | ..... | 10k | 2n | W | SW | 0 | 0 | Cloudy | T. C. Hill. |
| *Toronto, Ontario | 29.40 | 746.7 | 29.79 | 756.7 | 46 | 7.8 | 67 | W | 22 | 9.8 | ..... | ..... | 10ks | ..... | NW | 0.04 | 1.0 | Cloudy | Magnetic Observatory |
| Windsor, N. S | 29.44 | 747.8 | 29.53 | 750.0 | 46.0 | 7.8 | 100 | S | 30 | 13.4 | ..... | 0? | 0? | ..... | ..... | 0.325 | 8.26 | Raining? | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 32.5 | 0.3 | 100 | E | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Cloudy | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the SECRETARY OF WAR.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.39 | 746.5 | 29.60 | 751.8 | 57 | 13.9 | 63 | W | 10 | 4.5 | ..... | ..... | 10ks | ..... | W | 0.33 | 8.4 | Cloudy | |
| Alpena, Michigan | 29.21 | 741.9 | 29.85 | 758.2 | 45 | 7.2 | 60 | NW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | |
| Atlantic City, New Jersey | 29.74 | 755.4 | 29.76 | 755.9 | 66 | 18.9 | 68 | W | 13 | 5.8 | ..... | 0 | Haze | ..... | Calm | Inap. | Inap. | Clear | |
| Augusta, Georgia | 29.86 | 758.4 | 30.04 | 763.0 | 67 | 19.4 | 84 | Calm | 0 | 0 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Baltimore, Maryland | 29.78 | 756.4 | 29.83 | 757.7 | 66 | 18.9 | 59 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Barnegat, New Jersey | 29.72 | 754.9 | 29.74 | 755.4 | 66 | 18.9 | 54 | NW | 20 | 8.9 | ..... | 0 | Haze | ..... | Calm | 0.01 | 0.3 | Clear | |
| Bismarck, Dakota | 27.92 | 709.2 | 29.77 | 756.1 | 46 | 7.8 | 84 | NE | 19 | 8.5 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Boise City, Idaho | 26.87 | 682.5 | 29.75 | 755.6 | 44 | 6.7 | 75 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Boston, Massachusetts | 29.41 | 747.0 | 29.56 | 750.8 | 63 | 17.2 | 62 | SW | 16 | 7.2 | ..... | 1k | Haze | SW | ..... | 0.02 | 0.5 | Clear | |
| Brackettville, Texas | 28.56 | 725.4 | 29.54 | 750.3 | 76 | 24.4 | 73 | SE | 1 | 0.4 | ..... | 8k | 0 | SE | ..... | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 28.77 | 730.7 | 29.76 | 755.9 | 45 | 7.2 | 92 | N | 6 | 2.7 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Brownsville, Texas | 29.70 | 754.4 | 29.77 | 756.1 | 78 | 25.6 | 82 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Buffalo, New York | 29.05 | 737.9 | 29.74 | 755.4 | 46 | 7.8 | 92 | SW | 16 | 7.2 | ..... | 5k | 0 | W | ..... | 0 | 0 | Fair | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 55 | 12.8 | 68 | SW | ..... | ..... | 1 | 2ck | 0 | W | ..... | 0.17 | 4.3 | Fair | |
| Burlington, Vermont | 29.26 | 743.2 | 29.50 | 749.3 | 53 | 11.7 | 60 | W | 10 | 4.5 | ..... | ..... | 10s | ..... | W | 0.05 | 1.3 | Cloudy | |
| Cairo, Illinois | 29.53 | 750.8 | 29.94 | 760.5 | 64 | 17.8 | 89 | SE | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0.43 | 10.9 | Cloudy | |
| Camp Grant, Arizona | 25.05 | 636.3 | 29.85 | 758.2 | 45 | 7.2 | 84 | N | ..... | ..... | 1 | ..... | 10n | ..... | Calm | 0.03 | 0.8 | Light rain | |
| Camp Verde, Arizona | 26.66 | 677.2 | 30.15 | 765.8 | 39 | 3.9 | 55 | Calm | ..... | ..... | 0 | 5c | 0 | Calm | ..... | 0.38 | 9.7 | Fair | |
| Campo, California | 27.26 | 692.4 | 29.83 | 757.7 | 37 | 2.8 | 90 | SW | 3 | 1.3 | ..... | ..... | 10n | ..... | SW | 1.24 | 31.5 | Light rain | |
| Cape Hatteras, N. Carolina | 29.92 | 760.0 | 29.92 | 760.0 | 65 | 18.3 | 94 | W | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | |
| Cape Henry, Virginia | 29.84 | 757.9 | 29.86 | 758.4 | 67 | 19.4 | 79 | SW | 12 | 5.4 | ..... | 0 | Haze | ..... | Calm | Inap. | Inap. | Clear | |
| Cape Lookout, N. Carolina | 29.94 | 760.5 | 29.96 | 761.0 | 65 | 18.3 | 94 | NW | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0.27 | 6.9 | Clear | |
| Cape May, New Jersey | 29.78 | 756.4 | 29.81 | 757.2 | 60 | 15.6 | 76 | W | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0.06 | 1.5 | Clear | |
| Charleston, South Carolina | 30.00 | 762.0 | 30.06 | 763.5 | 70 | 21.1 | 85 | W | 9 | 4.0 | ..... | 0 | Haze | ..... | Calm | Inap. | Inap. | Clear | |
| Cheyenne, Wyoming | 23.64 | 600.4 | 29.58 | 751.3 | 33 | 0.6 | 61 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.21 | 741.9 | 29.88 | 758.9 | 58 | 14.4 | 64 | N | 2 | 0.9 | ..... | 2c | Haze | W | ..... | 0 | 0 | Fair | |
| Cincinnati Ohio | 29.31 | 744.5 | 29.95 | 760.7 | 58 | 14.4 | 88 | SE | 4 | 1.8 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Cleveland, Ohio | 29.17 | 740.9 | 29.88 | 758.9 | 57 | 13.9 | 63 | W | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Concho, Texas | 27.80 | 706.1 | 29.38 | 746.2 | 70 | 21.1 | 79 | S | ..... | ..... | 1 | 5k | 0 | S | ..... | 0 | 0 | Cloudy | |
| Corsicana, Texas | 29.30 | 744.2 | 29.75 | 755.6 | 71 | 21.7 | 95 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.06 | 1.5 | Cloudy | |
| Davenport, Iowa | 29.24 | 742.7 | 29.86 | 758.4 | 58 | 14.4 | 64 | E | 5 | 2.2 | ..... | 4k | 7ks | SW | SW | 0 | 0 | Cloudy | |
| Deadwood, Dakota | 24.98 | 634.5 | ..... | ..... | 38 | 3.3 | 91 | SW | 1 | 0.4 | ..... | ..... | 10n | ..... | Calm | 0.92 | 23.4 | Light rain | |
| Denison, Texas | 28.98 | 736.1 | 29.74 | 755.4 | 72 | 22 2 | 85 | S | 12 | 5.4 | ..... | ..... | 10ks | ..... | S | 0.06 | 1.5 | Threatening | |
| Denver, Colorado | 24.38 | 619.2 | 29.60 | 751.8 | 44 | 6.7 | 16 | SW | 4 | 1.8 | ..... | 2cs | 0 | NW | ..... | 0 | 0 | Clear | |
| Detroit, Michigan | 29.22 | 742.2 | 29.88 | 758.9 | 53 | 11.7 | 67 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dodge City, Kansas | 27.02 | 686.3 | 29.18 | 741.2 | 67 | 19.4 | 79 | SW | 16 | 7.2 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.15 | 740.4 | 29.84 | 757.9 | 51 | 10.6 | 79 | S | 2 | 0.9 | ..... | ..... | 10ks | ..... | SE | 0.11 | 2.8 | Threatening | |
| Duluth, Minnesota | 29.21 | 741.9 | 29.88 | 758 9 | 46 | 7.8 | 77 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Eagle Pass, Texas | 28.97 | 735.8 | 29.67 | 753.6 | 75 | 23.9 | 90 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | S | Inap. | Inap. | Cloudy | |
| Eastport, Maine | 29.40 | 746.7 | 29.46 | 748.3 | 46 | 7.8 | 92 | SW | 15 | 6.7 | ..... | ..... | Fog | ..... | ..... | 0.33 | 8.4 | Foggy | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 67 | 19.4 | 38 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.12 | 739.6 | 29.82 | 757.4 | 54 | 12.2 | 74 | W | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Clear | |
| Escanaba, Michigan | 29.31 | 744.5 | 29.98 | 761.5 | 42 | 5.6 | 66 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Florence, Arizona | 28.23 | 717.0 | 29.83 | 757.7 | 49 | 9.4 | 93 | W | 2 | 0.9 | ..... | 2k | 0 | W | ..... | Inap. | Inap. | Fair | |
| Fort Bayard, New Mexico | 23.97 | 608.8 | 29.97 | 761.2 | 44 | 6.7 | 67 | NW | 8 | 3.6 | ..... | 0 | 5ks | ..... | W | 0 | 0 | Fair | |
| Fort Craig, New Mexico | 25.30 | 642.6 | 29.36 | 745.7 | 43 | 6.1 | 43 | E | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.02 | 635.5 | 29.98 | 761.5 | 63 | 17.2 | 29 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.22 | 742.2 | 29.73 | 755.1 | 70 | 21.1 | 90 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Fort Griffin, Texas | 29.45 | 748.0 | 29.66 | 753.4 | 71 | 21.7 | 80 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Fort St. Michael, Alaska | 29.71 | 754.6 | 29.74 | 755.4 | 8 | —13.3 | 100 | W | 39 | 17.4 | ..... | 10c | 0 | W | ..... | 0 | 0 | Cloudy | |
| Fort Sill, Indian Territory | 28.48 | 723.4 | 29.52 | 749.8 | 73 | 22.8 | 76 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Fair | |
| Galveston, Texas | 29.81 | 757.2 | 29.85 | 758.2 | 74 | 23.3 | 90 | S | 4 | 1.8 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Grand Haven, Michigan | 29.28 | 743.7 | 29.92 | 760.0 | 52 | 11.1 | 73 | NE | 5 | 2.2 | ..... | 8cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Indianapolis, Indiana | 29.16 | 740.7 | 29.92 | 760.0 | 61 | 16.1 | 66 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianola, Texas | 29.78 | 756.4 | 29.81 | 757.2 | 75 | 23.9 | 90 | SE | 21 | 9.4 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Jacksboro, Texas | 28.58 | 725.9 | 29.65 | 753.1 | 73 | 22.8 | 81 | S | 12 | 5.4 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Jacksonville, Florida | 30.05 | 763.3 | 30.08 | 764.0 | 74 | 23.3 | 81 | SE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.18 | 741.2 | 29.77 | 756.1 | 64 | 17.8 | 73 | S | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Key West, Florida | 29.99 | 761.7 | 30.03 | 762.7 | 76 | 24.4 | 64 | SE | 10 | 4.5 | ..... | 5c;k | 0 | NW;SE | ..... | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 29.86 | 758.4 | 29.88 | 758.9 | 64 | 17.8 | 100 | W | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0.86 | 21.8 | Clear | |
| Knoxville, Tennessee | 29.06 | 738.1 | 30.05 | 763.3 | 57 | 13.9 | 94 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0.08 | 2.0 | Dense fog | |
| La Crosse, Wisconsin | 29.13 | 739.9 | 29.86 | 758.4 | 52 | 11.1 | 79 | S | 7 | 3.1 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| La Mesilla, New Mexico | 25.91 | 658.1 | 30.06 | 763.5 | 45 | 7.2 | 60 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.29 | 744.0 | 29.61 | 752.1 | 78 | 25.6 | 82 | SE | 6 | 2.7 | ..... | 10k | 0 | S | ..... | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 28.84 | 732.0 | 29.62 | 752.3 | 66 | 18.9 | 74 | S | 12 | 5.4 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Los Angeles, California | 29.52 | 749.8 | 29.87 | 758.7 | 48 | 8.9 | 74 | W | 4 | 1.8 | ..... | 0 | 8s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Louisville, Kentucky | 29.42 | 747.3 | 29.97 | 761.2 | 59 | 15.0 | 82 | SE | 2 | 0.9 | ..... | 0 | Sm'e | ..... | Calm | Inap. | Inap. | Clear | |
| Lynchburg, Virginia | 29.25 | 742.9 | 29.90 | 759.4 | 70 | 21.1 | 48 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear | |
| Marquette, Michigan | 29.23 | 742.4 | 29.94 | 760.5 | 45 | 7.2 | 68 | NW | 4 | 1.8 | ..... | 1c | 0 | Calm | ..... | 0.02 | 0.5 | Clear | |
| Mason, Texas | 28.14 | 714.7 | 29.81 | 757.2 | 72 | 22.2 | 76 | S | 10 | 4.5 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Memphis, Tennessee | 29.63 | 752.6 | 29.94 | 760.5 | 68 | 20.0 | 90 | S | 4 | 1.8 | ..... | 2k | Haze | SW | Calm | 0.26 | 6.6 | Fair | |
| Milwaukee, Wisconsin | 29.20 | 741.7 | 29.92 | 760.0 | 59 | 10.0 | 79 | NE | 12 | 5.4 | ..... | 5cs | Haze | ..... | ..... | 0 | 0 | Fair | |
| Mobile, Alabama | 29.99 | 761.7 | 30.03 | 762.7 | 71 | 21.7 | 95 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Montgomery, Alabama | 29.82 | 757.7 | 30.06 | 763.5 | 67.5 | 19.7 | 92 | Calm | 0 | 0 | ..... | 8ck | Haze | Calm | Calm | 0 | 0 | Fair | |
| Morgantown, West Virginia | 28.90 | 734.0 | 29.92 | 760.0 | 63 | 17.2 | 62 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Mt. Washington, N. H. | 23.19 | 589.0 | 29.55 | 750.6 | 32 | 0.0 | 100 | NW | 90 | 40.2 | ..... | ..... | Fog | ..... | NW | 1.27 | 32.3 | Foggy | |
| Nashville, Tennessee | 29.47 | 748.5 | 30.00 | 762.0 | 61 | 16.1 | 88 | Calm | 0 | 0 | ..... | 10k | 0 | SW | ..... | 0.64 | 16.3 | Cloudy | |
| New Haven, Connecticut | 29.54 | 750.3 | 29.65 | 753.1 | 63 | 17.2 | 67 | W | 8 | 3.6 | ..... | 0 | Haze | ..... | Calm | Inap. | Inap. | Hazy | |
| New London, Connecticut | 29.60 | 751.8 | 29.64 | 752 8 | 61 | 16.1 | 77 | W | 7 | 3.1 | ..... | 0 | Haze | ..... | Calm | Inap. | Inap. | Clear | |
| New Orleans, Louisiana | 29.92 | 760.0 | 29.98 | 761.5 | 70 | 21.1 | 90 | SE | 4 | 1.8 | ..... | 8ck | 0 | Calm | ..... | 0 | 0 | Fair | |
| Newport, Rhode Island | 29.58 | 751.3 | 29.63 | 752.6 | 52 | 11.1 | 79 | SW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| New York, New York | 29.56 | 750.8 | 29.73 | 755.1 | 63 | 17.2 | 52 | W | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | Inap | Inap. | Clear | |
| Norfolk, Virginia | 29.85 | 758.2 | 29.90 | 759.4 | 66 | 18.9 | 84 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Clear | |
| North Platte, Nebraska | 26.58 | 675.1 | 29.04 | 737.6 | 50 | 10.0 | 58 | SW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.22 | 5.6 | Clear | |
| Olympia, Washington Ter. | 29.80 | 756.9 | 29.84 | 757.9 | 48 | 8.9 | 93 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Omaha, Nebraska | 28.48 | 723.4 | 29.50 | 749.3 | 63 | 17.2 | 78 | SE | 14 | 6.3 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Oswego, New York | 29.39 | 746.5 | 29.70 | 754.4 | 47 | 8.3 | 77 | NW | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Pembina, Dakota | 29.02 | 737.1 | 29.85 | 758.2 | 40 | 4.4 | 91 | SE | 4 | 1.8 | ..... | 2c | 0 | Calm | ..... | Inap. | Inap. | Clear | |
| Philadelphia, Pennsylvania | 29.73 | 755.1 | 29.78 | 756.4 | 66 | 18.9 | 59 | NW | 16 | 7.2 | ..... | 1cs | Haze | NW | Calm | 0.01 | 0.3 | Clear | |
| Phœnix, Arizona | 28.72 | 729.5 | 30.54 | 775.7 | 48 | 8.9 | 93 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.70 | 17.8 | Clear | |
| Pike's Peak, Colorado | 17.41 | 442.2 | 29.62 | 752.3 | 4 | —15.6 | 100 | SW | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.09 | 2.3 | Light snow | |
| Pioche, Nevada | 23.75 | 603.2 | 29.52 | 749.8 | 26 | — 3.3 | 100 | S | 13 | 5.8 | ..... | ..... | 10n | ..... | Calm | 0.40 | 10.2 | Light snow | |
| Pittsburg, Pennsylvania | 29.09 | 738.9 | 29.87 | 758.7 | 61 | 16.1 | 55 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Port Huron, Michigan | 29.24 | 742.7 | 29.89 | 759.2 | 52 | 11.1 | 60 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Portland, Maine | 29.41 | 747.0 | 29.46 | 748.3 | 57 | 13.9 | 87 | SW | 11 | 4.9 | ..... | 1k | Haze | W | ..... | 0.16 | 4.1 | Clear | |
| Portland, Oregon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.11 | 2.8 | ..... | |
| Prescott, Arizona | 24.59 | 624.6 | 29.95 | 760.7 | 27 | — 2.8 | 77 | S | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 1.04 | 26.4 | Clear | |
| Punta Rassa, Florida | 30.05 | 763.3 | 30.06 | 763.5 | 72 | 22.2 | 76 | E | 8 | 3.6 | ..... | 5c | Haze | Calm | W | 0 | 0 | Fair | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Red Bluff, California | 29.56 | 750.8 | 29.92 | 760.0 | 48 | 8.9 | 85 | Calm | 0 | 0 | ..... | ..... | 1on | ..... | Calm | 0.36 | 9.1 | Light rain... | |
| Rochester, New York | 29.09 | 738.9 | 29.69 | 754.1 | 52 | 11.1 | 66 | W | 18 | 8.0 | ..... | 10k | 0 | W | ..... | 0.16 | 4.1 | Cloudy..... | |
| Roseburg, Oregon | 29.40 | 746.7 | 29.97 | 761.2 | 50 | 10.0 | 79 | NW | 3 | 1.3 | ..... | ..... | 10s;ks | ..... | NW | 0.05 | 1.3 | Cloudy..... | |
| Sacramento, California | 29.82 | 757.4 | 29.90 | 759.4 | 49 | 9.4 | 85 | S | 4 | 1.8 | ..... | ..... | 10n | ..... | S | Inap. | Inap. | Light rain... | |
| St. Louis, Missouri | 29.32 | 744.7 | 29.88 | 758.9 | 62 | 16.7 | 88 | S | 8 | 3.6 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy ..... | |
| St. Marks, Florida | 30.06 | 763.5 | 30.08 | 764.0 | 69 | 20.6 | 90 | E | 5 | 2.2 | ..... | 0 | 2s | ..... | Calm | 0 | 0 | Fair ..... | |
| St. Paul, Minnesota | 28.98 | 736.1 | 29.80 | 756.9 | 49 | 9.4 | 77 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Salt Lake City, Utah | 25.32 | 643.1 | 29.66 | 753.4 | 39 | 3.9 | 55 | S | 14 | 6.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy ..... | |
| San Antonio, Texas | 29.07 | 738.4 | 29.63 | 752.6 | 73 | 22.8 | 95 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | E | Inap. | Inap. | Light rain... | |
| San Diego, California | 29.79 | 756.7 | 29.86 | 758.4 | 48 | 8.9 | 93 | E | 18 | 8.0 | ..... | ..... | 10n | ..... | Calm | 0.69 | 17.5 | Heavy rain. | |
| Sandusky, Ohio | 29.26 | 743.2 | 29.91 | 759.7 | 58 | 14.4 | 64 | W | 10 | 4.5 | ..... | 2c | 0 | W | ..... | 0 | 0 | Clear..... | |
| Sandy Hook, New Jersey | 29.70 | 754.4 | 29.73 | 755.1 | 63 | 17.2 | 67 | W | 21 | 9.4 | ..... | 0 | 0 | ..... | ..... | 0.10 | 2.5 | Clear..... | |
| San Francisco, California | 29.83 | 757.7 | 29.90 | 759.4 | 51 | 10.6 | 65 | NW | 6 | 2.7 | ..... | ..... | 10ks | ..... | N | 0 | 0 | Cloudy..... | |
| Santa Fé, New Mexico | 23.03 | 585.0 | 29.57 | 751.1 | 37 | 2.8 | 53 | W | 8 | 3.6 | ..... | 5k | 0 | Calm | ..... | 0 | 0 | Fair..... | |
| Savannah, Georgia | 29.97 | 761.2 | 30.06 | 763.5 | 74 | 23.3 | 76 | SW | 4 | 1.8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Hazy..... | |
| Shreveport, Louisiana | 29.64 | 752.8 | 29.85 | 758.2 | 73 | 22.8 | 90 | S | 8 | 3.6 | ..... | 0 | 8s | ..... | S | 0 | 0 | Fair..... | |
| Smithville, North Carolina | 29.98 | 761.5 | 30.01 | 762.2 | 70 | 21.1 | 85 | NW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear..... | |
| Springfield, Massachusetts | 29.41 | 747.0 | 29.54 | 750.3 | 62 | 16.7 | 67 | SW | 3 | 1.3 | ..... | 2k | 0 | NW | ..... | 0.08 | 2.0 | Fair..... | |
| Stockton, Texas | 26.74 | 679.2 | 29.74 | 755.4 | 56 | 13.3 | 62 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| Thatcher's Island, Mass | 29.49 | 749.0 | 29.51 | 750.3 | 50 | 10.0 | 93 | SW | 12 | 5.4 | ..... | 1k | 0 | W | ..... | 0.05 | 1.3 | Clear ..... | |
| Toledo, Ohio, | 29.22 | 742.2 | 29.88 | 758.9 | 61 | 16.1 | 61 | W | 10 | 4.5 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair ..... | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 55 | 12.8 | 87 | SW | ..... | ..... | 1 | ..... | 10ks | ..... | S | 0 | 0 | Cloudy..... | |
| Tybee Island, Georgia | 30.03 | 762.7 | 30.06 | 763.5 | 70 | 21.1 | 90 | W | 4 | 1.8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear..... | |
| Umatilla, Oregon | 29.38 | 746.2 | ..... | ..... | 53 | 11.7 | 67 | NW | 4 | 1.8 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair ..... | |
| Vicksburg, Mississippi | 29.72 | 754.9 | 29.97 | 761.2 | 70 | 21.1 | 95 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Virginia City, Montana | 23.89 | 606.8 | 29.37 | 746.0 | 35 | 1.7 | 70 | E | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0.11 | 2.8 | Cloudy ..... | |
| Visalia, California | 29.58 | 751.3 | 29.96 | 761.0 | 42 | 5.6 | 91 | Calm | 0 | 0 | ..... | 5c | 2s | NW | NW | 0.12 | 3.0 | Fair ..... | |
| Washington, D. C | 29.76 | 755.9 | 29.87 | 758.7 | 67 | 19.4 | 50 | NW | 5 | 2.2 | ..... | 2ck | 0 | NW | ..... | 0.06 | 1.5 | Fair..... | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 39 | 3.9 | 64 | N | ..... | ..... | 1 | 0 | 8ks | ..... | Calm | 0 | 0 | Threatening | |
| Wilmington, N. Carolina | 29.91 | 759.7 | 29.99 | 761.7 | 68 | 20.0 | 76 | NE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Winnemucca, Nevada | 25.40 | 645.2 | 29.76 | 755.9 | 33 | 0.6 | 79 | SW | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy..... | |
| Wood's Holl, Mass | 29.60 | 751.8 | 29.62 | 752.3 | 54 | 12.2 | 86 | SW | 8 | 3.6 | ..... | Haze | 0 | ..... | Calm | 0.05 | 1.3 | Clear..... | |
| Yankton, Dakota | 28.36 | 720.3 | 29.60 | 751.8 | 52 | 11.1 | 79 | E | 16 | 7.2 | ..... | ..... | 10s | ..... | SE | 0.60 | 15.2 | Cloudy..... | |
| Yuma, Arizona | 29.72 | 754.9 | 29.89 | 759.2 | 46 | 7.8 | 68 | E | 4 | 1.8 | ..... | 0 | 5ks | ..... | E | Inap. | Inap. | Fair... ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| York Factory, B. A | 30.13 | 765.3 | 30.18 | 766.6 | 22.0 | — 5.6 | 93 | NE | 4 | 1.8 | ..... | 4cs | 0 | SW | ..... | 0 | 0 | Fair ..... | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I | 29.98 | 761.5 | 30.00 | 762.0 | 75 | 23.9 | 63 | E | 3.6 | 1.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | 30.02 | 762.5 | 30.03 | 762.7 | 78 | 25.6 | 86 | Calm | ..... | ..... | ..... | 5c | 2s | Calm | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I | 29.85 | 758.2 | 29.93 | 760.2 | 80 | 26.7 | ..... | NE | 10 | 4.5 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair..... | F. M. Everett. |
| Paramaribo, D. Guiana, S. A | 29.96 | 761.0 | 29.96 | 761.0 | 83 | 28.8 | 79 | E | ..... | ..... | 2 | 5k | 7ks | E | ..... | 0.070 | 1.78 | ½ Cloudy.... | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dr. H. Groot. |
| Medellin, Colombia, S. A | 25.20 | 640.1 | ..... | ..... | 69.0 | 20.6 | 79 | Calm | ..... | ..... | 0 | 8cs | 2ks | ..... | ..... | 1.12 | 28.4 | ..... | Thomas Herran. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medillin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,156.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,550 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.8 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er. 0—10. | Clouds. Amount. Low'r. 0—10. | Clouds. Direction. Up'er. From— | Clouds. Direction. Low'r. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.85 | 758.2 | 51 | 10.6 | 48 | 8.9 | 78 | NW | 15 | 6.7 | .... | ..... | 10 | ..... | S | 0 | 0 | ..... | ..... | Overcast..... | |
| Navy Yard, Pensacola, Fla. | 30.18 | 766.6 | 72 | 22.2 | 72 | 22.2 | 95 | E | 12 | 5.4 | .... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Navy Yard, Portsmouth, N.H. | 29.59 | 751.6 | 70 | 21.1 | 60 | 16.1 | 76 | W | 7 | 3.1 | ..... | ..... | 2 | ..... | ..... | 0.3 | 8. | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan..... | 29.57* | 751.1* | 64.4 | 18.0 | 68.5 | 20.3 | 90 | SSW | ..... | ..... | 2 | ..... | 2k | ..... | SW | 0 | 0 | ..... | ..... | Fair ..... | |
| Adams. Panama..... | 29.98 | 761.5 | 84 | 28.9 | 83 | 28.3 | 87 | NNE | ..... | ..... | 1 | ..... | 2 | ..... | NNE | ..... | ..... | Smooth | ..... | Fair ..... | |
| Alliance, Villefranche, France..... | 29.59‡ | 751.6‡ | ..... | ..... | 60 | 15.6 | 71 | E | ..... | ..... | 1–2 | ..... | 7 | ..... | E | ..... | ..... | Light | S | Pleasant..... | |
| Ashuelot. Nagasaki, Japan..... | 29.84 | 757.9 | 61 | 16.1 | 54 | 12.2 | 87 | S | ..... | ..... | 1 | ..... | 10 | ..... | E | ..... | ..... | ..... | ..... | Misty..... | |
| Canonicus, New Orleans, La..... | 29.97 | 761.2 | 53 | 11.7 | 70 | 21.1 | 100 | E | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Colorado, New York, N. Y..... | 29.70‡ | 754.4‡ | ..... | ..... | 66 | 18.9 | 50 | WSW | 10 | 4.5 | ..... | ..... | 2 | ..... | W | 0.01 | 0.3 | ..... | ..... | Hazy..... | |
| Constellation, N. 50° 02′ W. 1° 35′..... | 29.92‡ | 760.0‡ | ..... | ..... | 48 | 8.9 | 85 | SSE | ..... | ..... | 3 | ..... | 2 | ..... | SE | ..... | ..... | Smooth | SE | Fair ..... | |
| Constitution, Havre, France..... | 29.70‡ | 754.4‡ | ..... | ..... | 58 | 14.4 | 70 | S | ..... | ..... | 3 | ..... | 4 | ..... | SW | ..... | ..... | ..... | ..... | Fair ..... | |
| Despatch, Constantinople, Turkey. | 29.83‡ | 757.7‡ | ..... | ..... | 65 | 18.3 | 68 | S | ..... | ..... | 1 | ..... | 5 | ..... | SW | ..... | ..... | ..... | ..... | Fair..... | |
| Franklin, Norfolk, Va..... | 29.99 | 761.7 | 69 | 20.6 | 68 | 20.0 | 74 | NW | 6 | 2.7 | ..... | ..... | 0 | ..... | ..... | 0.9 | 23. | ..... | ..... | Blue sky..... | |
| Gettysburg Valetta, Malta..... | 29.80‡ | 756.9‡ | ..... | ..... | 68 | 20.0 | 100 | WNW | ..... | ..... | 3 | ..... | 5 | ..... | Calm | 0 | 0 | ..... | ..... | Fair ..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.08 | 764.0 | 75 | 23.9 | 75 | 23.9 | 68 | NE | ..... | ..... | 5 | ..... | 2 | ..... | NE | ..... | ..... | Ground | NW | Clear ..... | |
| Hartford, Montevideo, Uraguay .... | 30.13 | 765.3 | 63 | 17.2 | 57 | 13.9 | 47 | SW | 13 | 5.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Mod'ate | SW | Clear..... | |
| Marion, Smyrna, Turkey..... | 29.86 | 758.4 | 68 | 20.0 | 68 | 20.0 | 74 | W | ..... | ..... | 2 | ..... | 8 | ..... | WNW | 0 | 0 | Smooth | ..... | Fair..... ..... | |
| Michigan, Erie, Pa..... ..... | 29.35 | 745.5 | 60 | 15.6 | 52 | 11.1 | 77 | WSW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Monocacy. Shanghai, China..... | 29.93‡ | 760.2‡ | ..... | ..... | 60 | 15.6 | 88 | E | ..... | ..... | 1 | ..... | 10 | ..... | SE | ..... | ..... | ..... | ..... | Cloudy..... | |
| New Hampshire, Port Royal, S. C..... | 30.25† | 768.3† | ..... | ..... | 72 | 22.2 | 85 | W | 12 | 5.4 | ..... | ..... | 2 | ..... | SW | ..... | ..... | ..... | ..... | Clear..... | |
| Omaha, Hampton Roads, Va..... | 29.96* | 761.0* | 65 | 18.3 | 64 | 17.8 | 89 | WNW | 3 | 1.3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Bright ..... | |
| Onward, Callao, Peru..... | 30.04† | 763.0† | ..... | ..... | 67 | 19.4 | 89 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, Havana, Cuba, W. I..... | 30.05‡ | 763.3‡ | ..... | ..... | 73 | 22.8 | 81 | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Palos, Shanghai, China..... | 30.00* | 762.0* | 67 | 19.4 | 58 | 14.4 | 94 | NE | ..... | ..... | 2 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Pensacola, N. 36° 30′, W. 137° 50′..... | 30.48 | 774.2 | 55 | 12.8 | 52 | 11.1 | 73 | NNE | 10 | 4.5 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Mod'ate | NW | Cloudy ..... | |
| Plymouth. N. 33° 52′ W. 71° 20′..... | 30.06‡ | 763.5‡ | ..... | ..... | 64 | 17.8 | 83 | SW | ..... | ..... | 6 | ..... | 10 | ..... | SW | ..... | ..... | Moda'te | SW | Raining..... | |
| Powhatan, Norfolk, Va..... | 29.91‡ | 759.7‡ | ..... | ..... | 66 | 18.9 | 94 | NW | 7.2 | 3.2 | ..... | ..... | 0 | ..... | ..... | 0.04 | 1.0 | ..... | ..... | Clear..... | |
| Ranger. Amoy, China..... | 30.02* | 762.5* | ..... | ..... | 70 | 21.1 | 95 | NE | ..... | ..... | 1–4 | ..... | ..... | ..... | Calm | ..... | ..... | Smooth | ..... | Raining..... | |
| Rio Bravo, Brownsville, Texas..... | 29.76 | 755.9 | 77 | 25.0 | 75 | 23.9 | 100 | S | ..... | ..... | 2 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Santee, Annapolis, Md..... | 29.81‡ | 757.2‡ | ..... | ..... | 68 | 20.0 | 51 | NW | ..... | ..... | 2 | ..... | 2 | ..... | NW | 0 | 0 | ..... | ..... | Clear..... | |
| Saratoga, Washington, D. C..... | 29.78 | 756.4 | 73 | 22.8 | 70 | 21.1 | 95 | WNW | ..... | ..... | 2 | ..... | 1 | ..... | Calm | Mod'ate | Mod'ate | ..... | ..... | Clear ..... | |
| St. Louis, League Island, Pa ..... | 29.79 | 756.7 | 71 | 21.7 | 65 | 18.3 | 63 | NW | 9 | 4.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Supply, Havre, France..... | 29.78 | 756.4 | 59 | 15.0 | 61 | 16.1 | 71 | SSW | ..... | ..... | 2 | ..... | 2 | ..... | S | ..... | ..... | ..... | ..... | Clear ..... | |
| Swatara, N. 23° 53′, W. 84° 25′..... | 30.00‡ | 762.0‡ | 82 | 27.8 | 77 | 25.0 | 82 | SE | ..... | ..... | 5 | ..... | 2 | ..... | S&E | ..... | ..... | Rough | E | Clear ..... | |
| Tennessee, N. 24° 48′, E. 36° 22′..... | 29.83* | 757.7* | ..... | ..... | 80 | 26.7 | 70 | WNW | 2 | 0.9 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Smooth | ..... | D. clouds..... | |
| Trenton, Villefranche, France ..... | 29.58‡ | 751.3‡ | 78 | 25.6 | 65 | 18.3 | 78 | E | ..... | ..... | 1 | ..... | 2 | ..... | W | 0.5 | 13. | ..... | ..... | Fair ..... | |
| Tuscarora, N. 16° 21′, W. 98° 37′... ... | 29.69 | 754.1 | | | 76 | 24.4 | 91 | NW | ..... | ..... | 1 | ..... | 8 | ..... | Calm | 0 | 0 | Long | WSW | Cloudy..... | |
| Vandalia, Villefranche, France..... | 29.62‡ | 752.3‡ | ..... | ..... | 60 | 15.6 | 71 | E | ..... | ..... | 1 | ..... | 2 | ..... | ENE | ..... | ..... | ..... | ..... | Clear ..... | |
| Wabash, Boston, Mass..... | 29.55‡ | 750.6‡ | ..... | ..... | 60 | 15.6 | 76 | WSW | 8 | 3.6 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Fair..... | |
| Wyoming, N. 49° 38′, W. 6° 24′..... | 29.87*† | 758.7*† | ..... | ..... | 67 | 19.4 | 23 | ESE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | Smooth | ..... | D clouds..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable; the position given is that at noon, local time, instead of that at 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | Character. | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Panama, N. 47° 20′, W. 125° 00 | | | 29.94* | 760.5* | | | | W | | | 4 | | 4 | | WSW | Rough | W | Clear. | Capt. Seabury. |
| S. S. City of Peking, N. 35° 04′, E. 146° 08′ | | | 29.77† | 756.1† | 61 | 16.1 | 77 | S | 15.0 | 6.7 | | | 8 | | SW | Small | WNW | D. clouds. | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio, N. 36° 38′, W. 141° 46′ | | | | | 52 | 11.1 | | NE | | | 4 | | 3 | | NNE | Long | NNE | D. clouds | Capt. Maury. |
| S. S. Colima, N. 35° 24′, W. 121° 32′ | | | 30.00† | 762.0† | 59 | 15.0 | 59 | NW | | | 4 | | 7 | | NW | Mod'ate | W | D. clouds | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WHITE STAR LINE MARINE SERIES.** Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York. | | | | | | | | | | | | | | | | | | | |
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. W. H. Thompson. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.** Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary. | | | | | | | | | | | | | | | | | | | |
| S. S. Belgic, N. 37° 21′, W. 125° 25′ | | | 30.07* | 763.8* | | | | NW | | | 6 | | k | | N | Mod'ate | NW | | Capt. John Metcalf. |
| S. S. Gaelic, N. 34° 00′, E. 142° 27′ | | | 29.47† | 748.5† | 60 | 15.6 | ?? | N | | | 4 | | k | | N | Swell | N | Overcast | Capt. W. H. Kidley |
| S. S. Oceanic, Pt. de Aguila | | | 30.25 | 768.3 | 70 | 21.1 | 90 | NNE | | | 3 | | 3 | | WNW | Smooth | NE | D. clouds | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.** Furnished by the coöperation of A. Schumacher & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Obser |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | Character. | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, Philadelphia, Pa | | | 29.81* | 757.2* | 65 | 18.3 | 63 | WSW | | | 5 | | 1 | | W | | | Cloudy† | Captain Sargent. |
| S. S. Ohio, N. 40° 36′, W. 59° 28′ | | | 30.06 | 763.5 | 57 | 13.9 | 90 | SSW | | | 4 | | 2 | | SSW | Light | S | Clear | Captain Morrison. |
| S. S. Pennsylvania, Liverpool | | | 29.57† | 751.1† | 59 | 15.0 | 100 | SE | | | 2 | | 6 | | SE | | | Partly clear | Captain Harris. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for elevation; instrumental error not known. †Corrected for temperature and elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |

**ALLAN LINE MARINE SERIES.**

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| S. S. Scandinavian, N. 37° 4′, W. 75° 38′ | | | 29.91 | 759.7 | 60 | 15.6 | | W | | | 2 | | 0 | | | Light | SE | Blue sky | Capt. W. Richardson. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.)**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, St. John, N. B | | | 29.44 | 747.8 | 45 | 7.2 | 100 | SSW | 10 | 4.5 | | | 10n | | S | Rough | | Light rain | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.71 | 754.6 | 14 | —10.0 | 93 | S | 0.3 | 0.1 | | | 10s | | | | | Cloudy | O. T. Sherman. |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg$^{d}$.) Chief Signal Officer. U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 22, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.12 | 765.0 | 64.9 | 18.3 | 74 | NE | ..... | ..... | 9 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair..... | Dr. Ollive. |
| Nemours | ..... | ..... | 30.07 | 763.6 | 64.4 | 18.0 | 71 | WNW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0.228 | 5.8 | Covered ..... | Michel. |
| Algiers | ..... | ..... | 29.91 | 759.6 | 66.2 | 19.0 | 66 | NNW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair ..... | Towillere. |
| La Calle | ..... | ..... | 29.90 | 759.4 | 64.4 | 18.0 | 65 | NW | ..... | ..... | 6 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair.. | Boulangeot. |
| Tunis | ..... | ..... | 29.81 | 757.1 | 65.8 | 18.8 | 50 | NW | ..... | ..... | 8 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy ..... | Jacques. |
| Sfax | ..... | ..... | 29.94 | 760.5 | 71.6 | 22.0 | ..... | W | ..... | ..... | 6 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy..... | Gau. |
| Saida | ..... | ..... | 30.19 | 766.7 | 59.9 | 15.5 | ..... | WNW | ..... | ..... | 5 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair . | Herbin. |
| Tebessa | ..... | ..... | 29.91 | 759.8 | ..... | ..... | ..... | NW | ..... | ..... | 8 | ..... | 7 | ..... | ..... | 0 | 0 | Very cloudy | Watrin. |
| Geriville | ..... | ..... | 30.12 | 765.1 | 66.9 | 19.4 | 74 | NW | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair.. | Lemaillot. |
| Laghouat | ..... | ..... | 30.08 | 764.1 | 60.4 | 15.8 | 46 | NW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy ..... | Bertrand. |
| Biskra | ..... | ..... | 29.99 | 761.7 | 81.7 | 27.6 | 37 | NW | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair..... | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.13 | 739.8 | 29.66 | 753.4 | 64.4 | 18.0 | 53 | NE | ..... | ..... | 5 | ..... | 8 | ..... | ..... | 0.134 | 3.4 | Thunder-storm.. | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.24 | 742.7 | 30.00 | 762.1 | 56.1 | 13.4 | 48 | NNE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbiski. |
| Eperies | 28.98 | 736.2 | 29.85 | 758.1 | 59.9 | 15.5 | 47 | N | ..... | ..... | 3 | 2cs | ..... | S | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.58 | 726.0 | 29.80 | 756.8 | 64.0 | 17.8 | 49 | ENE | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0.098 | 2.50 | ..... | Andreas Rospini. |
| Hermannstadt | 28.31 | 719.1 | 29.70 | 754.4 | 60.6 | 15.9 | 55 | ESE | ..... | ..... | 5 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.45 | 722.7 | 29.76 | 756.0 | 60.1 | 15.6 | 62 | E | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0.071 | 1.8 | ..... | Prof. C. Wagner |
| Lemberg | 29.01 | 736.9 | 30.00 | 762.0 | 52.0 | 11.1 | 55 | NE | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Dr. T. Stanecki. |
| Pola | 29.49 | 749.1 | 29.60 | 751.8 | 68.9 | 20.5 | 45 | E | ..... | ..... | 3 | ..... | 7cks | ..... | ..... | 0.756 | 19.2 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.37 | 746.0 | 29.83 | 757 6 | 60.6 | 15.9 | 44 | N | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.37 | 746.1 | 29.64 | 752.9 | 68.0 | 20.0 | 57 | Calm | ..... | ..... | 0 | ..... | 7 | ..... | ..... | ..... | ..... | Thunder-storm... | Karl Stancel. |
| Trieste | 29.56 | 750.8 | 29.66 | 753.4 | 69.8 | 21.0 | 41 | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear..... | P. Busin. |
| Vienna | 29.11 | 739.3 | 29.81 | 757.2 | 59.0 | 15.0 | 71 | Calm | ..... | ..... | 0 | ..... | 6 | ..... | ..... | 0.094 | 2.4 | Raining..... | I. R. Central Met.Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.36 | 720.3 | 29.85 | 758.2 | 54.1 | 12.3 | 79 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.083 | 2.1 | ..... | Prof. M. Passau. |
| Brussels | 29.63 | 752 5 | 29.82 | 757.5 | 59.5 | 15.3 | 73 | SW | ..... | ..... | 1 | ..... | 5 | ..... | SE;NE | 0 776 | 19.7 | ..... | Royal Observatory. |
| Furnes | 29.84 | 758.0 | 29.87 | 758.6 | 52 7 | 11.5 | 90 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.122 | 3.1 | ..... | M. E. de Cae. |
| Maeseyck | 29.73 | 755.1 | 29.85 | 758.3 | 63.7 | 17.6 | 66 | E | ..... | ..... | 0 | ..... | 6 | ..... | ..... | 0.016 | 0.4 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4? set. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

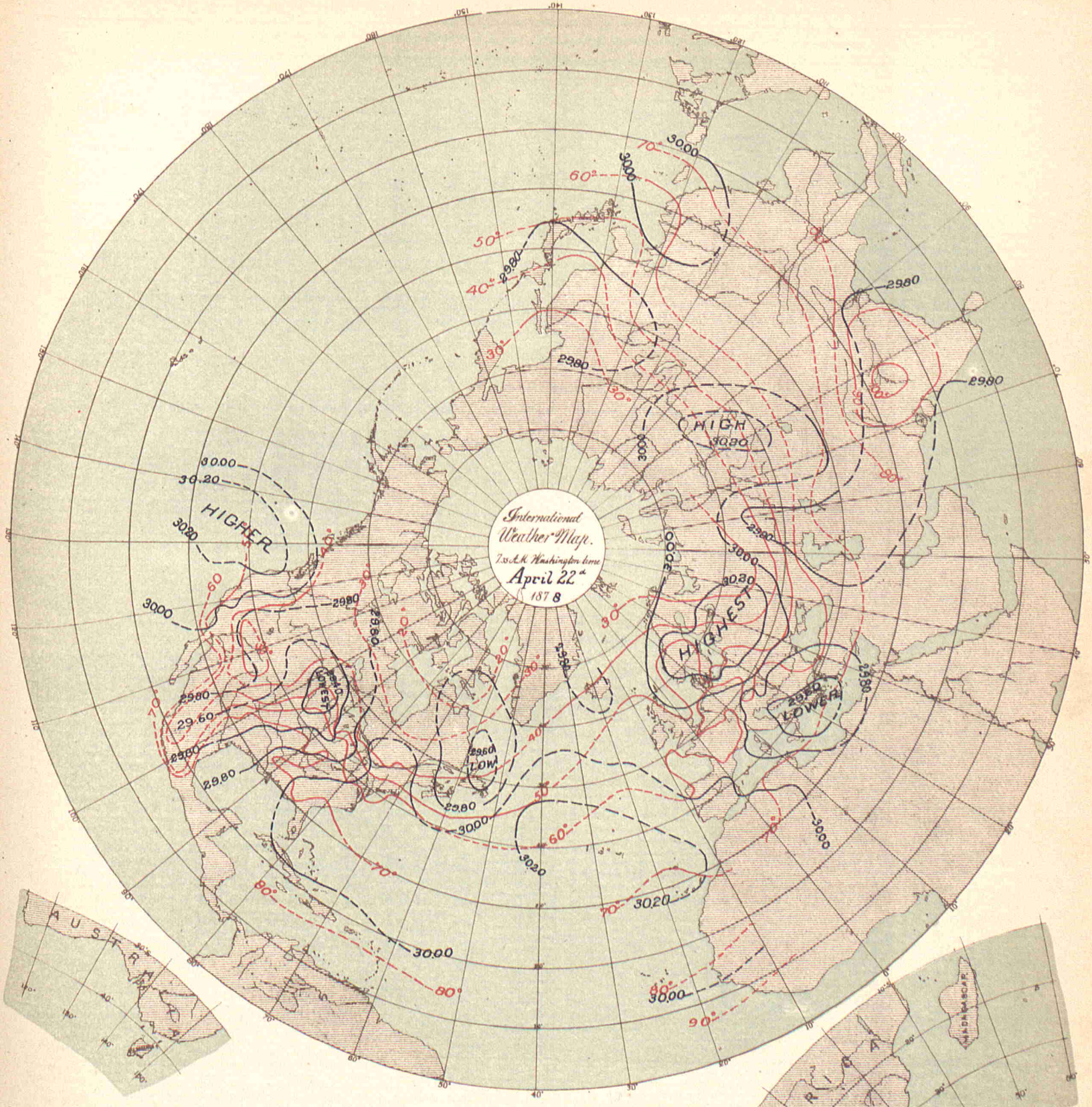
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.95 | 760 7 | 30.05 | 763.3 | 44.1 | 6.7 | ..... | SE | 9 | 4.0 | ..... | ..... | ..... | ..... | ..... | 0.020 | 0.51 | Dense fog.... | W. B swell. |
| Ardrossan | 29.85 | 758.2 | 29.87 | 758.7 | 59 | 15.0 | ..... | NE | ..... | ..... | 5 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.85 | 758.2 | 57.9 | 14.4 | ..... | SE | 18 | 8.0 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.84 | 757.9 | 59.9 | 15.5 | ..... | ESE | 16 | 7.2 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 29.76 | 755.9 | 56.7 | 13.7 | ..... | SE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | J. L. E. Dreyer. |
| Bradford, Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.01 | 0.3 | ..... | J. McLandsborough. |
| Bridgetown, (Barbados) | ..... | ..... | 29.92 | 760.0 | 84.0 | 28.9 | ..... | NE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.85 | 758.2 | 52.5 | 11.4 | ..... | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast..... | H. Todd. [H.C. |
| Cardington | ..... | ..... | 29.86 | 758.4 | 55.0 | 12.8 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John McLaren. |
| Chatham, School M. E. | 29.67 | 753.6 | 29.80 | 756.9 | 57.2 | 14.0 | ..... | SE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | Q. M. Serg., Geo. Stuart, R. E |
| Dartmoor | 28.18 | 715.8 | 29.64 | 752.8 | 51.0 | 10.6 | ..... | NW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | Fine..... | Alexander Watt. |
| Donaghadee | 29.83 | 757.7 | 29.86 | 758.4 | 55 | 12.8 | ..... | ESE | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | J. Mac Gowan. |
| Dover | 29.82 | 757.4 | 29.84 | 757.9 | 53 | 11.7 | ..... | NNE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | ¾ clouded... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.86 | 758.4 | 57.5 | 14.2 | ..... | ENE | 1.8 | 0.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Thomas Mackereth. |
| Falmouth, Observatory | 29.58 | 751.3 | 29.81 | 757.2 | 52.0 | 11.1 | ..... | ESE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff. |
| Fort Napier, (Natal) | 27.69 | 703.3 | 29.91 | 759.7 | 66.0 | 18.9 | ..... | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Pvt. G.Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.65 | 753.1 | 29.88 | 758.9 | 90.0 | 32.2 | ..... | W | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds.... | |
| Galway, Queen's College | ..... | ..... | 29.67 | 753.6 | 58 | 14.4 | ..... | SE | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D clouds.... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 30.07 | 763.8 | 30.13 | 765.3 | 65.4 | 18.6 | ..... | W | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | Gloomy..... | Corpl. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.71 | 754.6 | 29.91 | 759.7 | 50.1 | 10.1 | ..... | ENE | ..... | ..... | 6 | ..... | 9 | ..... | ..... | ..... | ..... | Squally..... | D. G. Maclean. |
| Great Yarmouth | 29.87 | 758.7 | 29.88 | 758.9 | 50 | 10.0 | ..... | ENE | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | Misty..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.67 | 753.6 | 29.84 | 757.9 | 58.1 | 14.5 | ..... | ENE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Cloudy..... | The Staff, for G. B. Airy. |
| Guernsey | 29.56 | 750.8 | 29.78 | 756.4 | 54 | 12.2 | ..... | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 29.78 | 756.4 | 57 | 13.9 | ..... | E | ..... | ..... | 2 | ..... | 3c | ..... | ..... | 0 | 0 | Fine..... | M. P. Moyle. |
| Holyhead | 29.76 | 755.9 | 29.82 | 757.4 | 55 | 12.8 | ..... | WNW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | John Tilston. |
| Jersey | 29.53 | 750.0 | 29.82 | 757.4 | 52.8 | 11.6 | ..... | S | ..... | ..... | 1 | ..... | 4 | ..... | ..... | Blank | Blank | D. clouds.... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 29.84 | 757.9 | 56.7 | 13.7 | ..... | E | 11 | 4.9 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Misty..... | The Staff. |
| Kingstown | 29.83 | 757.7 | 29.86 | 758.4 | 51 | 10.6 | ..... | SE | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.86 | 758.4 | 55.2 | 12.9 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.58 | 751.3 | 29.64 | 752.8 | 61.8 | 16.6 | ..... | NW | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | D clouds.... | Sgt. Fred. Travis, A. H. |
| Nairn | 29.84 | 757.9 | 29.93 | 760.2 | 59 | 15.0 | ..... | SE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ¾ clouded.... | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 30.05 | 763.3 | 75.5 | 24.2 | ..... | SE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | C. S. Duncombe. |
| Nottingham, Observatory | 29.69 | 754.1 | 29.88 | 758.9 | 55.1 | 12.8 | ..... | NE | ..... | ..... | 3 | ..... | 10k;d | ..... | NE | 0.002 | 0.05 | Overcast..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.33 | 745.0 | 29.85 | 758.2 | 55.5 | 13.1 | ..... | NE | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | Drizzling .... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.84 | 757.9 | 58 | 14.4 | ..... | E | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | Mr. Lucas. |
| Plymouth | 29.72 | 754.9 | 29.79 | 756.7 | 54.3 | 12.4 | ..... | SE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | John Merrifield. |
| Roche's Point | 29.70 | 754 4 | 29.74 | 755.4 | 53 | 11.7 | ..... | SE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Cloudy..... | W. Kennedy. |
| Saint Ann's Head | 29.65 | 753.1 | 29.81 | 757.2 | 52 | 11.1 | ..... | ESE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | John C. Walker. |
| Sandwick Manse, (Orkneys. | ..... | ..... | 30.02 | 762.5 | 49.2 | 9.6 | ..... | SSE | 28 | 12.5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty ..... | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.65 | 753.1 | 58.6 | 14.8 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | Blank | Blank | Gloomy..... | Sergt. W. H. Lyne. |
| Sheffield | ..... | ..... | ..... | ..... | ..... | ..... | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Foggy ..... | W. F. Cooper. |
| Silloth Rectory | 29.82 | 757.4 | 29.86 | 758.4 | 57.6 | 14.2 | 74 | S | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0.020 | 0.51 | D. clouds.... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.49 | 749.0 | 29.90 | 759.4 | 53.0 | 11.7 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 29.88 | 758.9 | 55 | 12.8 | ..... | Calm | ..... | ..... | 0 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded.... | John Sutherland. |
| Stratfield Turgiss | 29.63 | 752.6 | 29.85 | 758.2 | 55.0 | 12.8 | ..... | SE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | ½ clouded.... | Rev. C. H. Griffith, F.M |
| Thurso | ..... | ..... | 29.97 | 761.2 | 50 | 10.0 | ..... | SSE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 29.78 | 756.4 | 60 | 15.6 | ..... | SE | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds.... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 29.67 | 753.6 | 55.7 | 13.2 | ..... | SE | 26 | 11.6 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone |
| Hobart Town, (Tasmania) | ..... | ..... | 29.42 | 747.3 | 66.0 | 18.9 | 93 | NW | ..... | ..... | 5 | ..... | 5k | ..... | ..... | 0 | 0 | ..... | Francis Abbott, F.R.A.S |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.82 | 757.4 | 30.01 | 762.3 | 74.3 | 23.5 | 82 | SE | 16.0 | 7.2 | ..... | ..... | 10 | ..... | ..... | 0.39 | 9.9 | Raining..... | C. Meldrum. |
| Melbourne, Observatory | 29.78 | 756.4 | 29.87 | 758.7 | 60.2 | 15.7 | 76 | NW | 12 | 5.4 | ..... | ..... | 7 | ..... | N | 0.26 | 6.6 | Fine..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m.

| Marine Series. Vessels. | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|
| S. S. Algeria, N. 44° 20', W. 45° 5' | 5* | N | Blue sky..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S, Hibernia | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | Capt. C. C. Prehn. |
| S. S. Naid, N. 44° 5', W. 37° 20' | 5 | W | D. clouds..... | Capt. J. Smith. [R. |
| S. S. Peruvian, N. 44° 50' W. 52° 20' | 4 | SSW | D. clouds..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | Capt. Alex Simpson. |
| S. S. Yorkshire | ..... | ..... | ..... | Capt. H. Longley. |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | | | | | | | | | | | | | | | | | | | |
| San Jose | 26.22 | 666.0 | | | 73.4 | 23.0 | 79 | SE | | | 1 | 8pc | 1s | | | 0 | 0 | | Mr. Ansart. Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.19 | 766.9 | 30.24 | 768.1 | 46.9 | 8.3 | 60 | E | | | 6 | | 0 | | | | | | |
| Fanöe | 30.08 | 764.0 | 30.10 | 764.5 | 54.1 | 12.3 | 53 | ESE | | | 6 | | 1 | | | | | | |
| Godthaab, (Greenland) | 29.78 | 756.5 | 29.83 | 757.6 | 31.3 | — 0.4 | | S | | | 2 | | 10 | | | | | | |
| Stykkisholm, (Iceland) | 29.74 | 755.5 | 29.79 | 756.6 | 40.5 | 4.7 | 90 | Calm | | | 0 | | 8 | | | | | | |
| Thorshavn, (Farõe) | 29.91 | 759.6 | 29.94 | 760.5 | 47.5 | 8.6 | 95 | SSE | | | 4 | | 10 | | | | | | |
| Vestervig | 29.96 | 761.0 | 30.13 | 765.3 | 53.2 | 11.8 | 76 | E | | | 4 | | 0 | | | | | Foggy | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.32 | 744.6 | 29.87 | 758.6 | 59.0 | 15 | 72 | SW | | | 1 | | 5 | | | 0.004 | 0.1 | Cloudy | Collignon, Director. |
| Amiens, Normal School | | | | | | | | | | | | | | | | | | | Bonvarne, Director. |
| Avignon, Normal School | 29.72 | 755.0 | 29.80 | 757.0 | 63.3 | 17.4 | 52 | NNW | | | 6 | | 0 | | | 0 | 0 | Clear | Mr. Giraud, Director |
| Bar-sur-Seine | 29.33 | 744.9 | 29.87 | 758.8 | 58.8 | 14.9 | 50 | SW | | | 2 | | 8k | | S | 0.008 | 0.2 | Very cloudy | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 61.5 | 16.4 | 46 | SSE | | | 2 | | 8 | | SSE | 0 | 0 | Very cloudy | Normal School. |
| Besançon | 29.02 | 737.0 | 29.00 | 759.4 | 56.5 | 13.6 | 76 | N | | | 2 | | 10 | | N | 0.189 | 4.8 | Covered | Normal School. |
| Bourg-en-Bresse | 29.03 | 737.3 | 29.94 | 760.5 | 51.6 | 10.9 | 82 | NW | | | 2 | | 10n | | NW | 0.20 | 5. | Covered | Normal School. |
| Bourges, Normal School | 29.35 | 745.4 | 29.89 | 759.3 | 55.4 | 13 | 83 | SW | | | 2 | | 1 | | W | 0.020 | 0.5 | Slightly cl'dy | A. Wagner, Director. |
| Brest, Naval Observatory | 29.52 | 749.7 | 29.74 | 755.3 | 53.4 | 11.9 | 75 | N | | | 2 | | 10 | | NW | 0.039 | 1 00 | | The Staff. |
| Carcassonne, Normal School | 29.54 | 750.4 | 29.95 | 760.7 | 62.1 | 16.7 | 59 | W | | | 2 | | 10 | | W | 0.16 | 4. | Rainy | Vateau, Director. |
| Caen | | | | | | | | | | | | | | | | | | | Normal School. |
| Chartres, Normal School | 29.20 | 741.7 | 29.76 | 756.0 | 51.6 | 10.9 | 85 | NW | | | 3 | | 4 | | N | 0.114 | 2.9 | | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.57 | 751.0 | 29.88 | 759.0 | 59.7 | 15.4 | 55 | SW | | | 1 | | 10 | | | 0 | 0 | Covered | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.52 | 724.4 | 29.86 | 758.5 | 57.0 | 13.9 | 60 | NE | | | 2 | | 10 | | N | 0.024 | 0.6 | Covered | Alluard, Director. |
| Commercy, Normal School | 29.02 | 737.2 | 29.91 | 759.6 | 54.5 | 12.5 | 89 | W | | | 2 | | 10 | | W | 0.04 | 1. | Covered | Dr. Goulet, Director. |
| Commune de Grêasque* | 28.66 | 728.0 | 29.80 | 757.0 | 62.1 | 16.7 | 59 | W | | | 2 | | 2 | | SW | 0 | 0 | ¼ covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 29.67 | 753.6 | 29.88 | 759.0 | 56.5 | 13.6 | 71 | W | | | 2 | | 8 | | W | 0 | 0 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.55 | 750.6 | 29.86 | 758.4 | 55.9 | 13.3 | 55 | W | | | 2 | | 8 | | WSW | 0 | 0 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.00 | 736.5 | 29.91 | 759.8 | 53.2 | 11.8 | 80 | S | | | 3 | | 10 | | S | 0.08 | 2. | Covered | Voudez, Director. |
| Lorient, Naval Observatory | 29.72 | 755.0 | 29.82 | 757.5 | 60.1 | 15.6 | 73 | SW | | | 4 | | 8 | | SW | 0.142 | 3 6 | ¾ Covered | T. Carré, Director. |
| Mâcon, Normal School | 29.09 | 738.9 | 29.74 | 755.5 | 50.7 | 10.4 | 81 | W | | | 2 | | 10 | | | 0.059 | 1.5 | Covered | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | 28.83 | 732.2 | 29.86 | 758.5 | 56.8 | 13.8 | 69 | NW | | | 1 | | 10 | | NW | 0 | 0 | Covered | Normal School. |
| Nismes, Normal School | 29.72 | 755.0 | 29.93 | 760.2 | 57.2 | 14 | 80 | N | | | 2 | | 8 | | S | 0 | 0 | Very cloudy | Boyer, Director. |
| Orleans, Normal School | 29.31 | 744.4 | 29.68 | 753.9 | 68.9 | 20.5 | 77 | NW | | | 2 | | 10 | | | 0 | 0 | Covered | Bernard, Director. |
| Paris, Observatory | 29.62 | 752.3 | 29.85 | 758.3 | 59.2 | 15.1 | 49 | SSW | | | 2 | | 5 | | S | 0 | 0 | Cloudy | National Observatory. |
| Privas | 28.78 | 731.1 | 29.84 | 757.9 | 57.2 | 14 | 75 | NNW | | | 6 | | 10 | | NNW | 0.12 | 3. | Covered | Normal School |
| Puy de Dome (Summit) | | | | | | | | | | | | | | | | | | | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.89 | 759.1 | 29.92 | 759.9 | 60.4 | 15.8 | 48 | SW | | | 3 | | 2 | | SW | 0.20 | 5. | ¾ Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.74 | 755.4 | 29.83 | 757.6 | 61.9 | 16.6 | 46 | SSE | | | 2 | | 2 | | SE | 0.063 | 1.6 | Slightly cl'dy | F. Lucard, Director |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | M. H. Hercouet |
| Tarbes, Normal School | 28.91 | 734.2 | 29.97 | 761.3 | 60.8 | 16 | 69 | SSW | | | 2 | | 10 | | | 0 | 0 | Covered | T. Hugues, Director |
| Villefranche | | | | | | | | | | | | | | | | | | | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.79 | 756.6 | 29.82 | 757.3 | 81.0 | 27.2 | | | | | | | | | | 0.24 | 6. | | L'Abbé Marchési. |
| Lyons | | | 29.95 | 760.7 | 54.1 | 12.3 | 67 | | | | | | 9 | | | | | Rainy | M. Jeys. |
| Marseilles, Observatory | | | 29.72 | 755.0 | 65.1 | 18.4 | 42 | NW | | | 3 | | 1 | | | 0 | 0 | | The Staff. |
| Mont-Louis | 24.74 | 628.3 | 30.05 | 763.3 | 47.1 | 8.4 | 38 | NW | 9.3 | 4.17 | | | 3 | | NW | 0.008 | 0.2 | | Mr. Falguère. |
| Nice | | | 29.74 | 755.5 | 61.2 | 16.2 | 89 | SW | | | 3 | | 4 | | | 0 | 0 | Cloudy | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.58 | 751.2 | 29.85 | 758.2 | 60.4 | 15.8 | 59 | S | | | 2 | 4c | | SSE | | 0 | 0 | | Marié Davy, Director |
| Perpignan | | | 29.91 | 759.8 | 61.3 | 16.3 | 45 | NW | 22.4 | 10.00 | | | 3 | | NW | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.36 | 568.0 | | | 31.6 | — 0.2 | | WNW | | | 2 | | 10 | | | 0.429 | 10.9 | Cloudy | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.69 | 754.2 | 29.86 | 758.4 | 60.8 | 16.0 | 47 | WSW | | | 2 | | 3 | | | 0 | 0 | | E. Renou. |
| Toulouse, Observatory | 29.28 | 743.6 | 30.00 | 761.9 | 56.7 | 13.7 | 62 | WSW | | | 3 | | 5 | | | 0.128 | 3.25 | | The Staff. |
| Tours | 29.66 | 753.4 | 29.86 | 758.4 | 59.0 | 15.0 | 50 | W | | | 1 | | 7 | | W | 0.043 | 1.1 | | C. Marquet. |
| Versailles, (near Paris) | | | 29.87 | 758.6 | 59.0 | 15.0 | 52 | W | | | 1 | | 7 | | | 0 | 0 | Cloudy | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.10 | 764.4 | 30.12 | 765.0 | 54.3 | 12.4 | 78 | WNW | 8.3 | 3.7 | | | 0 | | | 0.012 | 0.3 | Clear | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Grêasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,368 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.97 | 735.9 | 29.81 | 757.1 | 64.6 | 18.1 | 76 | E | | | 3 | | 8 | E | | 0.08 | 2. | Rain & graupel. | Prof. Dr. Hoh. |
| Berlin | 29.87 | 758.8 | 30.04 | 763.1 | 60 4 | 15.8 | 37 | E | | | 4 | | 1 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.50 | 749.4 | 30.04 | 762.9 | 59.9 | 15.5 | 50 | E | | | 4 | | 4 | ESE | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.43 | 747.6 | 29.86 | 758.4 | 58.1 | 14.5 | 75 | SW | | | 1 | | 10 | | | 0.079 | 2.0 | | Albert Senz. |
| Cassel | 29.37 | 746.0 | 29.96 | 761.0 | 64.0 | 17.8 | 58 | ENE | | | 4 | | 5 | E | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.69 | 754.1 | 29.85 | 758.2 | 59.2 | 15.1 | 75 | E | | | 2 | | 9n | | | 0.04 | 1. | Raining | Director Lose. |
| Emden | 29.92 | 760.0 | 29.96 | 760.9 | 63.5 | 17.5 | 58 | E | | | 3 | | 1 | | | 0 | 0 | | Prof. Prestel. |
| Frankfort on the Main | 29.54 | 750.2 | 29.89 | 759.3 | 64.0 | 17.8 | 52 | SSE | | | 1 | | 6 | | | Inap. | Inap. | | Physical Society. |
| Friedrichshafen | 28.45 | 722.7 | 29.87 | 758.8 | 56.1 | 13.4 | 76 | S | | | 2 | | 5 | NE | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 29.96 | 761.0 | 30.03 | 762.8 | 61.5 | 16.4 | 54 | E | | | 5 | | 6k | | | 0 | 0 | Fair | Captain F. Hegemann. |
| Kiel | 30.07 | 763.8 | 30.09 | 764.2 | 51.3 | 10.7 | 63 | E | | | 6 | | 0 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 30.19 | 766.7 | 30.27 | 768.8 | 52.2 | 11.2 | 39 | E | | | 4 | | 0 | | | 0 | 0 | | Prof. E Luther. |
| Köslin | | | 30.13 | 765.4 | 57.0 | 13.9 | | E | | | 6 | | 0 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.55 | 750.5 | 29.96 | 761.0 | 63.7 | 17.6 | 52 | E | | | 6 | | 4 | E | | 0 | 0 | | Prof. Bruhns. |
| Memel, Naval School | 30.26 | 769.0 | 30.32 | 770.2 | 48.2 | 9.0 | 31 | E | | | 2 | | 0 | | | | | | Reinbrecht von Skalweit. |
| Neufahrwasser | 30.24 | 768.2 | 30.26 | 768.6 | 48.6 | 9.2 | 57 | ENE | | | 4 | | 0 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.83 | 757.6 | 30.11 | 764.9 | 56.3 | 13.5 | 41 | E | | | 6 | | 2 | | | 0 | 0 | | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.34 | 745.1 | 29.87 | 758.8 | 61.9 | 16.6 | 72 | Calm | | | 0 | | 8 | SW | | 0.144 | 3.65 | | Dr. Schur. |
| Stuttgart | 28.91 | 734.4 | 29.85 | 758.1 | 56.3 | 13.5 | 80 | E | | | 1 | | 8 | E | | 0.142 | 3.6 | Raining | Prof. Schoder. |
| Treves, (Trier) | 29.24 | 742.6 | 29.75 | 755.7 | 57.9 | 14.4 | 80 | NW | | | 2 | | 10 | | | 0.098 | 2.50 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.34 | 719.8 | 29.80 | 756.8 | 60.6 | 15.9 | 58 | S | 7 | 3 | | | 6ck | | E | 0.087 | 2.2 | | Dr. Von Bebber. |
| Wustrow, Naval School | 30.16 | 766.0 | 30.20 | 767.0 | 51.4 | 10.8 | 61 | ENE | | | 6 | | 2 | | | 0 | 0 | | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.13 | 740.0 | 29.52 | 749.8 | 69.3 | 20.7 | | S | | | 2.5 | | | | | | | ½ clear | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.74 | 755.4 | 29.79 | 756.7 | 81.8 | 27.7 | 79 | SW | 30? | 13.4? | | | 5 | | | 0 | 0 | D. clouds | |
| Deesa | 29.31 | 744.5 | 29.77 | 756.2 | 96.3 | 35.7 | 26 | W | | | | | 4 | WNW | | 0 | 0 | D. clouds | |
| Bombay | 29.79 | 756.7 | 29.83 | 757.7 | 84.2 | 29.0 | 75 | NW | 19 | 8.5 | | | 4 | | SSE | 0 | 0 | D. clouds | |
| Poona | 27.79 | 705.9 | 29.74 | 755.4 | 92.1 | 33.4 | 38 | NNW | | | | | 0 | | | 0 | 0 | Dust-whirl. | |
| Lahore | 29.00 | 736.5 | 29.72 | 754.8 | 94.1 | 34.5 | 20 | N | 4.7 | 2.1 | | | 6 | | | 0 | 0 | Cloudy | |
| Belgaum | 27.29 | 693.0 | 29.76 | 756.0 | 87.9 | 31.1 | 62 | W | 13 | 5.8 | | | 1 | | ENE | 0 | 0 | Misty | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.80 | 731.5 | 29.67 | 753.6 | 92.8 | 33.8 | 24 | Calm | 0.3 | 0.1 | | | 0 | | | 0 | 0 | | |
| Agra | 29.16 | 740.7 | 29.70 | 754.4 | 100.6 | 38.1 | 18 | W | | | | | | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.66 | 727.9 | 29.66 | 753.3 | 99 | 37.2 | 24 | S | 5.5 | 2.5 | | | 8 | | E | 0 | 0 | D. clouds | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.29 | 744.0 | 29.65 | 753.1 | 97.3 | 36.3 | 36 | SW | 1.8 | 0.8 | | | 7 | | NNW | 0 | 0 | D. clouds | |
| Allahabad | 29.34 | 745.2 | 29.64 | 752.8 | 97.2 | 36.2 | 28 | Calm | 1.4 | 0.6 | | | 8 | W | | 0 | 0 | D. clouds | |
| Patna | 29.50 | 749.2 | 29.67 | 753.6 | 99 | 37.2 | 21 | E | 1.0 | 0.4 | | | 4 | E | E | 0 | 0 | D. clouds | |
| Hazaribagh | 27.73 | 704.4 | 29.68 | 753.9 | 92.8 | 33.8 | 19 | Calm | 5.2 | 2.3 | | | 10 | | | 0 | 0 | Thunder; lightn'g | |
| Cuttack | 29.67 | 753.7 | 29.75 | 755.7 | 90.1 | 32.3 | 50 | S | 8.8 | 3.9 | | | 3 | | | 0 | 0 | D. clouds | |
| Calcutta (Alipore) | 29.73 | 755.1 | 29.75 | 755.6 | 87.4 | 30.8 | 67 | S | 11 | 4.9 | | | 4 | W | | 0 | 0 | D. clouds | |
| Goalpara | 29.39 | 746.6 | 29.79 | 756.7 | 67.3 | 19.6 | 89 | E | 7.3 | 3.3 | | | 10 | | | 0.93 | 23.6 | Thunder storm. | |
| Chittagong | 29.75 | 755.6 | 29.84 | 757.9 | 84.7 | 29.3 | 69 | SSW | 7.4 | 3.3 | | | | | | 0 | 0 | Misty | |
| Sibsagar | 29.60 | 751.7 | 29.94 | 760.4 | 73.9 | 23.3 | 83 | ENE | 2.6 | 1.2 | | | 10 | W | W | 0.64 | 16.3 | D. clouds | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.38 | 720.8 | 29.70 | 754.4 | 95.5 | 35.3 | 29 | SW | 5.7 | 2.6 | | | 4 | NE | | 0 | 0 | D. clouds | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.28 | 743.7 | 29.69 | 754.0 | 67.8 | 19.9 | 28 | NE | 2.5 | 1.1 | ..... | ..... | 4 | ..... | ..... | 0.087 | 2.2 | ..... | Prof. Giovanni Codig. |
| Padua | 29.56 | 750.9 | 29.67 | 753.6 | 67.3 | 19.6 | 50 | E | 13.0 | 5.8 | ..... | ..... | 7 | NE | ..... | 0.260 | 6.6 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.48 | 748.7 | 29.67 | 753.5 | 68.7 | 20.4 | 46 | E | 4.9 | 2.2 | ..... | ..... | 3 | E | ..... | 0.457 | 11.6 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.39 | 721.1 | 29.69 | 754.1 | 66.2 | 19.0 | 46 | SW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0.283 | 7.2 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.24 | 742.7 | 29.75 | 755.7 | 66.4 | 19.1 | ..... | NW | ..... | ..... | 1 | ..... | 3 | NW | ..... | 0.626 | 15.9 | ..... | Prof. Schiaparelli. |
| Moncalieri | 28.90 | 734.0 | 29.80 | 756.8 | 53.1 | 11.7 | 79 | NNW | 6.9 | 3.1 | ..... | ..... | 10 | NE | ..... | 0.217 | 5.5 | ..... | Prof. P. F. Denza. |
| Mondovi | 27.91 | 708.9 | 29.81 | 757.1 | 49.1 | 9.5 | 87 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.957 | 24.3 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.51 | 749.5 | 29.73 | 755.1 | 65.5 | 18.6 | 57 | SW | ..... | ..... | 2 | ..... | 9 | SW | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.54 | 750.3 | 29.71 | 754.6 | 63.1 | 17.3 | 55 | N | 7.4 | 3.3 | ..... | ..... | 6 | SW | ..... | 0.055 | 1.4 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.41 | 747.1 | 29.73 | 755.1 | 64.8 | 18.2 | 62 | NNW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.752 | 19.1 | ..... | Prof. P. Pigorini. |
| Florence | 29.38 | 746.3 | 29.63 | 752.7 | 68.0 | 20.0 | 42 | N | ..... | ..... | 2 | ..... | 7 | N | ..... | 0.039 | 1.0 | ..... | Cav. F. Meucci. |
| Leghorn | 29.57 | 751.0 | 29.65 | 753.1 | 62.8 | 17.1 | 67 | N | 0.7 | 0.3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 29.61 | 752.0 | 29.65 | 753.2 | 61.0 | 16.1 | 74 | NW | 12.5 | 5.6 | ..... | ..... | 9 | E | ..... | 0.638 | 16.2 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.11 | 713.9 | 29.65 | 753.0 | 56.5 | 13.6 | 65 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 1.555 | 39.5 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.50 | 749.4 | 29.61 | 752.2 | 67.3 | 19.6 | 56 | NNE | ..... | ..... | 4 | ..... | 6 | NE | ..... | 0.138 | 3.5 | ..... | Avv. P. Ponticelli. |
| Rome | 29.43 | 747.6 | 29.61 | 752.0 | 68.4 | 20.2 | 48 | NNW | 3.1 | 1.4 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrar |
| Naples, O. U. | 29.38 | 746.2 | 29.58 | 751.2 | 63.3 | 17.4 | 60 | NW | ..... | ..... | 1 | ..... | 10 | NW | ..... | 0.024 | 0.6 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 58.6 | 14.8 | 80 | N | 4.9 | 2.2 | ..... | ..... | 8 | N | ..... | 0.098 | 2.5 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.50 | 749.2 | 29.69 | 754.1 | 60.8 | 16.0 | 56 | NW | ..... | ..... | 6 | ..... | 7 | N | ..... | 0.394 | 10.0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 28.69 | 728.8 | 29.57 | 751.0 | 57.6 | 14.2 | 76 | SW | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0.728 | 18.5 | ..... | Prof. F. D. Conti. |
| Palermo | 29.34 | 745.3 | 29.60 | 751.7 | 55.4 | 13.0 | 86 | WNW | 7.4 | 3.3 | ..... | ..... | 10 | ..... | ..... | 0.827 | 21.0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.42 | 747.2 | 29.49 | 749.1 | 67.6 | 19.8 | 64 | W | ..... | ..... | 6 | ..... | 8 | WSW | ..... | 0.004 | 0.1 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.04 | 737.5 | 29.59 | 751.6 | 59.5 | 15.3 | 70 | WNW | 6.9 | 3.1 | ..... | ..... | 9 | NW | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nagasaki | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Tokei (Yeddo) | 29.69 | 754.1 | 29.76 | 755.9 | 51.7 | 10.9 | 83 | NE | 9.7 | 4.3 | ..... | ..... | 10n | ..... | ..... | 0.075 | 1.91 | Light rain.. | The Observatory. |
| Tokei (Yeddo) University.. | 29.65 | 753.1 | 29.75 | 755.6 | 51.3 | 10.7 | 90 | ENE | 8.5 | 3.8 | ..... | 10cs | ..... | ..... | ..... | 0 | 0 | Cloudy..... | Prof. P. V. Veeder. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 68.9 | 20.5 | 33 | N | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy... | L. Castillo, A. E. |
| Guadalajara | 24.96 | 633.9 | 29.99 | 761.7 | 47.3 | 8.5 | 42 | S | 0.9 | 0.4 | ..... | 0 | 7 | ..... | SW | 0 | 0 | Cloudy..... | Prof. L. Perez. |
| Guanajuato | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 61.5 | 16.4 | 38 | NNW | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy ..... | Prof. M. Leal. |
| Mexico | 23.04 | 585.3 | 30.07 | 763.6 | 59.0 | 15.0 | 47 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Blue sky..... | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 55.6 | 13.1 | 43 | Calm | 0 | 0 | ..... | 5c | 0 | SW | ..... | 0 | 0 | ½ cloudy.... | M. V. de Leon, M. E. |
| Puebla | 23.31 | 592.2 | 30.02 | 762.5 | 52.3 | 11.3 | 70 | S | 5.4 | 2.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy.. | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 29.69 | 754.2 | 29.70 | 754.5 | 79.6 | 26.5 | 69 | S | 15.4 | 6.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy..... | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 29.68 | 754.0 | 29.71 | 754.7 | 77.0 | 25.0 | 76 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy... | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 55.4 | 13.0 | 45 | SW | 4.9 | 2.2 | ..... | 5 | 0 | ..... | ..... | 0 | 0 | ½ cloudy .... | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.28 | 591.3 | 30.02 | 762.4 | 53.6 | 12.0 | 41 | E | 0.7 | 0.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy ..... | P. Spina. [M.M. D. D |
| Morelia | 23.98 | 609.0 | ..... | ..... | 50.0 | 10.0 | 52 | SW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy ..... | M. Tena, F. L. Param. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 818 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.86 | 758.5 | 29.86 | 758.5 | 62.6 | 17.0 | ..... | S | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0.035 | 0.9 | ..... | |
| Groningen | 29.89 | 759.1 | 29.94 | 760.5 | 61.0 | 16.1 | ..... | E | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 29.89 | 759.2 | 29.89 | 759.2 | 59.0 | 15.0 | ..... | ENE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.087 | 2.2 | ..... | |
| Hellevoetsluis | 29.86 | 758.5 | 29.86 | 758 5 | 64.0 | 17.8 | 75 | ESE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.82 | 757.3 | 29.86 | 758.5 | 66.7 | 19.3 | 53 | ESE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0.217 | 5.5 | Cloudy..... | H. v d Brink. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.17 | 766.2 | 30.22 | 767.6 | 54.3 | 12.4 | 54 | WNW | 9.6 | 4.3 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 30.20 | 767.1 | 30.24 | 768.1 | 43.2 | 6.2 | 60 | SSW | 18 | 8 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 30.15 | 765.9 | 30.30 | 769.6 | 56.3 | 13.5 | 45 | SSW | 7 | 3 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.96 | 761.0 | 30.00 | 762.1 | 33.8 | 1.0 | 81 | SW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | 1.024 | 26.0 | Rain & snow | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.07 | 763.7 | 30.26 | 768.5 | 64.4 | 18.0 | 86 | W | 10.5 | 4.7 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.08 | 738.5 | 30.10 | 764.4 | 63.7 | 17.6 | 78 | WNW | 16.8 | 7.5 | ..... | ..... | 8 | WNW | ..... | 0.106 | 2.7 | ..... | Dr. A. M. R. dos Santos |
| Funchal, (Madeira) | 30.20 | 767.1 | 30.29 | 769.3 | 69.8 | 21.0 | 70 | SW | 4.9 | 2.2 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.79 | 756.7 | 30.15 | 765.8 | 62.6 | 17.0 | 87 | WNW | 15.0 | 6.7 | ..... | ..... | 10 | ..... | ..... | 0.272 | 6.9 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.23 | 767.7 | 30.30 | 769.5 | 66.6 | 19.2 | 88 | WSW | 3.8 | 1.7 | ..... | ..... | 10 | ..... | ..... | 0.008 | 0.2 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.87 | 758.8 | 29.88 | 759.0 | 81.5 | 27.5 | ..... | SSE | ..... | ..... | 2 | ..... | 1 | ..... | SSE | 1 | ..... | Blue sky | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Rio Douro, S. 25° 08′, E. 32° 37′ | ..... | ..... | 30.02 | 762.6 | 84.2 | 29.0 | ..... | SE | ..... | ..... | 2 | ..... | 6 | ..... | SE | 1 | ..... | D. clouds | J. T. d'Oliveria, Com'd't. |
| Sado, Porto Praya, Cape Verde Islands. | 30.02* | 762.5* | 30.03* | 762.8* | 84.2 | 29.0 | ..... | NNE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 2 | N | Blue sky | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, S. 8° 58′ 5″, E. 12° 0′ 8″ | 29.72 | 755.0 | 29.73 | 755.1 | ..... | ..... | ..... | SW | ..... | ..... | 3 | ..... | 5 | ..... | SW | 3 | SW | D. clouds | F. Texeira da Silva, Com'd't. |
| Tejo, N. 22° 10′ E. 113° 32′ | ..... | ..... | 29.95 | 760.8 | 77.9 | 25.5 | ..... | ESE | ..... | ..... | 2 | ..... | 3n;kn | ..... | ESE | 1 | ESE | ..... | F. J. Ferreina, dos Amas, Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.72 | 754.8 | 30.14 | 765.6 | 53.4 | 11.9 | 44 | E | 18 | 8 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.90 | 759.5 | 30.34 | 770.5 | 45.0 | 7.2 | 37 | ENE | 4 | 2 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Light clouds | Astronomical Obs. |
| Dorpat | 30.15 | 765.7 | 30.40 | 772.1 | 41.9 | 5.5 | 42 | SW | 2 | 1 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.35 | 770.8 | 30.36 | 771.2 | 33.8 | 1.0 | 51 | W | 11 | 5 | ..... | ..... | 3s | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.91 | 759.7 | 30.24 | 768.2 | 35.6 | 2.0 | 91 | SW | 13 | 6 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | ..... | Ch. Forsten. |
| Kieff | 29.48 | 748.7 | 30.13 | 765.3 | 42.6 | 5.9 | 43 | NE | 13 | 6 | ..... | ..... | 6k | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.89 | 759.2 | 29.96 | 761.0 | 50.4 | 10.2 | 60 | NE | 22 | 10 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.85 | 758.2 | 29.87 | 758.7 | 54.9 | 12.7 | 93 | NE | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Foggy | Lagorio. |
| Moscow | 29.75 | 755.6 | 30.33 | 770.3 | 29.5 | — 1.4 | 43 | N | 13 | 6 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.70 | 754.3 | 29.90 | 759.5 | 46.4 | 8.0 | 42 | ENE | 22 | 10 | ..... | ..... | 5ck | ..... | ..... | Blank | Blank | ..... | Meteorological Obs. |
| Archangel | 30.07 | 763.8 | 30.09 | 764.3 | 27.3 | — 2.6 | 54 | WNW | 18 | 8 | ..... | ..... | 2cs | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.41 | 721.5 | 29.79 | 756.6 | 65.5 | 18.6 | 50 | SW | 9 | 4 | ..... | ..... | 7ks | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 29.78 | 756.4 | 29.70 | 754.3 | 66.0 | 18.9 | 39 | W | 2 | 1 | ..... | ..... | 10s;n | ..... | ..... | Blank | Blank | ..... | Sebastianof. |
| Krotkowo* | 29.47 | 748.5 | 29.96 | 760.9 | 32.9 | 0.5 | 42 | N | 16 | 7 | ..... | ..... | 8k | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.67 | 753.7 | 29.95 | 760.8 | 30.4 | — 0.9 | 61 | N | 2 | 1 | ..... | ..... | 9k | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.82 | 731.9 | 29.78 | 756.4 | 35.1 | 1.7 | 52 | W | 11 | 5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.55 | 750.6 | 29.79 | 756.7 | 76.3 | 24.6 | 29 | SSW | 4 | 2 | ..... | ..... | 1cs | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.34 | 719.8 | 30.00 | 762.0 | 68.7 | 20.4 | 40 | NW | 4 | 2 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.80 | 756.9 | 30.33 | 770.4 | 46.8 | 8.2 | 32 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.91 | 759.8 | 30.25 | 768.4 | 34.2 | 1 2 | 77 | S | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 29.81 | 757.2 | 29.95 | 760.8 | 66.9 | 19.4 | 24 | NW | 2 | 1 | ..... | ..... | 1cs | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.61 | 701.3 | 29.64 | 752.9 | 48.2 | 9.0 | 40 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.66 | 753.3 | 29.76 | 755.8 | 37.9 | 3.3 | 78 | NE | 2 | 1 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 27.1 | — 2.7 | 72 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.74 | 755.4 | 29.85 | 758.1 | 64.0 | 17.8 | 54 | SW | 4.6 | 2.06 | ..... | 4c;ck | 0 | NW | ..... | 0 | 0 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.91 | 759.7 | 29.97 | 761.1 | 68.2 | 20.1 | 58 | E | 2.9 | 1.30 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.04 | 686.7 | ..... | ..... | 51.8 | 11.0 | 85 | SW | 5.4 | 2.43 | ..... | ..... | 8 | ..... | ..... | 0.354 | 9.0 | Raining | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.83 | 706.9 | 30.04 | 762.9 | 61.9 | 16.6 | 55 | W | 16.4 | 7.33 | ..... | 0 | 10 | ..... | ..... | 0 | 0 | Almost cov. | The Staff. |
| Murcia, Met. Obs'y | 29.83 | 757.6 | 29.97 | 761.3 | 77.0 | 25.0 | 45 | NW | 3.4 | 1.53 | ..... | 1 | 5 | ESE | ..... | 0 | 0 | Cloudy | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.01 | 736.9 | 29.90 | 759.5 | 57.0 | 13.9 | 97 | SSW | 14.3 | 6.39 | ..... | ..... | 10 | ..... | ..... | 0.059 | 1.5 | Misty | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.95 | 760.7 | 30.02 | 762.4 | 75.1 | 23.9 | 69 | ESE | 11.6 | 5.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J. |
| San Fernando, Naval Obs'y | 30.08 | 763.9 | 30.18 | 766.5 | 65.8 | 18.8 | 81 | WSW | 16.2 | 7.2 | ..... | 0 | 10 | ..... | W | 0.030 | 0.8 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.88 | 759.0 | 29.97 | 761.3 | 77.5 | 25.3 | 76 | NW | 0 | 0 | ..... | 4ck | 5ck | NW | NW | 0 | 0 | Cloudy | Leonardo de Tejeda, Chief of Engineers. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0-10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.83 | 757.7 | 30.06 | 763.5 | 50 | 10.0 | 65 | N | 4 | 1.8 | ..... | 1c | 0 | W | ..... | 0 | 0 | Clear | |
| Alpena, Michigan | 29.28 | 743.7 | 29.93 | 760.2 | 40 | 4.4 | 91 | E | 10 | 4.5 | ..... | ..... | 10n | ..... | E | 0.29 | 7.4 | Light rain | |
| Atlantic City, New Jersey | 30.08 | 764.0 | 30.10 | 764.5 | 54 | 12.2 | 79 | E | 7 | 3.1 | ..... | 8ck | 0 | Calm | ..... | 0 | 0 | Fair | |
| Augusta, Georgia | 29.88 | 758.9 | 30.06 | 763.5 | 69 | 20.6 | 85 | S | 1 | 0.4 | ..... | Haze | 8ks | Calm | SE | 0 | 0 | Cloudy | |
| Baltimore, Maryland | 30.06 | 763.5 | 30.11 | 764.8 | 60 | 15.6 | 60 | SE | 8 | 3.6 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Fair | |
| Barnegat, New Jersey | 30.08 | 764.0 | 30.11 | 764.8 | 54 | 12.2 | 79 | SE | 5 | 2.2 | ..... | 10ck;k | 0 | W | ..... | 0 | 0 | Cloudy | |
| Bismarck, Dakota | 27.54 | 699.5 | 29.39 | 746.5 | 46 | 7.8 | 100 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | NE | 0.52 | 13.2 | Cloudy | |
| Boise City, Idaho | 27.00 | 685.8 | 29.88 | 758.9 | 39 | 3.9 | 81 | SE | 4 | 1.8 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Boston, Massachusetts | 29.88 | 758.9 | 30.03 | 762.7 | 50 | 10.0 | 52 | NW | 11 | 4.9 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Brackettville, Texas | 28.48 | 723.4 | 29.44 | 747.8 | 76 | 24.4 | 86 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 28.40 | 721.3 | 29.35 | 745.5 | 50 | 10.0 | 100 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.06 | 1.5 | Cloudy | |
| Brownsville, Texas | 29.57 | 751.1 | 29.64 | 752.8 | 78 | 25.6 | 86 | S | 14 | 6.3 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Buffalo, New York | 29.28 | 743.7 | 29.98 | 761.5 | 49 | 9.4 | 71 | NE | 7 | 3.1 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 42 | 5.6 | 91 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Burlington, Vermont | 29.82 | 757.4 | 30.09 | 764.3 | 41 | 5.0 | 65 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cairo, Illinois | 29.42 | 747.3 | 29.79 | 756.7 | 70 | 21.1 | 85 | S | 10 | 4.5 | ..... | ..... | 10s | ..... | S | 0.09 | 2.3 | Cloudy | |
| Camp Grant, Arizona | 25.07 | 636.8 | 29.87 | 758.7 | 60 | 15.6 | 2 | N | ..... | ..... | 1 | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Camp Verde, Arizona | 26.64 | 676.6 | 30.12 | 765.0 | 41 | 5.0 | 57 | NW | ..... | ..... | 1 | 8c | 0 | E | ..... | 0.22 | 5.6 | Fair | |
| Campo, California | 27.38 | 695.4 | 29.95 | 760.7 | 35 | 1.7 | 90 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.16 | 4.1 | Cloudy | |
| Cape Hatteras, N. Carolina | 30.06 | 763.5 | 30.06 | 763.5 | 67 | 19.4 | 95 | S | 12 | 5.4 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Cape Henry, Virginia | 30.02 | 762.5 | 30.04 | 763.0 | 60 | 15.6 | 88 | NE | 16 | 7.2 | ..... | 8cs | Haze | N | ..... | 0 | 0 | Fair | |
| Cape Lookout, N. Carolina | 30.06 | 763.5 | 30.08 | 764.0 | 67 | 19.4 | 95 | SW | 8 | 3.6 | ..... | 1cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Cape May, New Jersey | 30.09 | 764.3 | 30.12 | 765.0 | 56 | 13.3 | 74 | SE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 30.04 | 763.0 | 30.11 | 764.8 | 72 | 22.2 | 85 | SW | 3 | 1.3 | ..... | 0 | 2ks | ..... | E | 0 | 0 | Fair | |
| Cheyenne, Wyoming | 23.70 | 602.0 | 29.64 | 752.8 | 35 | 1.7 | 53 | NW | 16 | 7.2 | ..... | 0 | 5s | ..... | NW | 0 | 0 | Fair | |
| Chicago, Illinois | 28.94 | 735.1 | 29.58 | 751.3 | 67 | 19.4 | 89 | SW | 13 | 5.8 | ..... | ..... | 10s | ..... | SW | 0.04 | 1.0 | Cloudy | |
| Cincinnati Ohio | 29.18 | 741.2 | 29.80 | 756.9 | 69 | 20.6 | 75 | S | 4 | 1.8 | ..... | 10k | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Cleveland, Ohio | 29.15 | 740.4 | 29.85 | 758.2 | 57 | 13.9 | 58 | SE | 16 | 7.2 | ..... | ..... | 10ks | ..... | SW | 0 | 0 | Threatening | |
| Concho, Texas | 27.70 | 703.6 | 29.30 | 744.2 | 67 | 19.4 | 74 | W | ..... | ..... | 1 | 8k | 0 | W | ..... | 0.16 | 4.1 | Cloudy | |
| Corsicana, Texas | 29.18 | 741.2 | 29.62 | 752.3 | 73 | 22.8 | 90 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Davenport, Iowa | 28.96 | 735.6 | 29.56 | 750.8 | 67 | 19.4 | 89 | S | 10 | 4.5 | ..... | ..... | 10s | ..... | S | 0.80 | 20.3 | Cloudy | |
| Deadwood, Dakota | 24.97 | 634.2 | ..... | ..... | 34 | 1.1 | 90 | SE | 1 | 0.4 | ..... | ..... | 10n | ..... | Calm | 0.84 | 21.3 | Light snow | |
| Denison, Texas | 28.87 | 733.3 | 29.62 | 752.3 | 73 | 22.8 | 85 | S | 10 | 4.5 | ..... | ..... | 10ks | ..... | SW | 0.22 | 5.6 | Cloudy | |
| Denver, Colorado | 24.46 | 621.3 | 29.68 | 753.9 | 36 | 2.2 | 21 | SE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Detroit, Michigan | 29.12 | 739.6 | 29.76 | 755.9 | 57 | 13.9 | 58 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | SW | 0.02 | 0.5 | Cloudy | |
| Dodge City, Kansas | 27.06 | 687.3 | 29.30 | 744.2 | 47 | 8.3 | 48 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Dubuque, Iowa | 28.85 | 732.8 | 29.50 | 749.3 | 69 | 20.6 | 85 | SW | 10 | 4.5 | ..... | ..... | 8ks;fg. | ..... | SW;Calm | 0.32 | 8.1 | Cloudy | |
| Duluth, Minnesota | 28.92 | 734.6 | 29.69 | 751.8 | 39 | 3.9 | 91 | NE | 28 | 12.5 | ..... | ..... | 10n | ..... | NE | 0.45 | 11.4 | Light rain | |
| Eagle Pass, Texas | 28.81 | 731.8 | 29.48 | 748.8 | 75 | 23.9 | 90 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Eastport, Maine | 29.78 | 756.4 | 29.85 | 758.2 | 47 | 8.3 | 55 | N | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 66 | 18.9 | 35 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.18 | 741.2 | 29.88 | 758.9 | 58 | 14.4 | 53 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| Escanaba, Michigan | 29.13 | 739.9 | 29.78 | 756.4 | 44 | 6.7 | 92 | E | 20 | 8.9 | ..... | ..... | 10n | ..... | E | 0.67 | 17.0 | Light rain | |
| Florence, Arizona | 28.23 | 717.0 | 29.83 | 757.7 | 50 | 10.0 | 93 | W | 2 | 0.9 | ..... | 2k | 5ks | W | W | 0.45 | 11.4 | Clearing | |
| Fort Bayard, New Mexico | 23.90 | 607.0 | 29.90 | 759.4 | 38 | 3.3 | 46 | Calm | 0 | 0 | ..... | 7k | 0 | ..... | ..... | 0 | 0 | Cloudy | |
| Fort Craig, New Mexico | 25.24 | 641.1 | 29.31 | 744.5 | 39 | 3.9 | 55 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 24.95 | 633.7 | 29.91 | 759.7 | 62 | 16.7 | 29 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.08 | 738.6 | 29.58 | 751.3 | 71 | 21.7 | 90 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | S | 0.03 | 0.8 | Cloudy | |
| Fort Griffin, Texas | 28.35 | 720.1 | 29.55 | 750.6 | 72 | 22.2 | 76 | SE | 12 | 5.4 | ..... | ..... | 8s | ..... | S | 0 | 0 | Threatening | |
| Fort St. Michael, Alaska | 29.81 | 757.2 | 29.84 | 757.9 | 14 | —10.0 | 100 | SW | 3 | 1.3 | ..... | ..... | 10s | ..... | SW | Inap. | Inap. | Cloudy | |
| Fort Sill, Indian Territory | 28.39 | 721.1 | 29.43 | 747.5 | 67 | 19.4 | 74 | E | 32 | 14.3 | ..... | ..... | 10n | ..... | SE | 0.46 | 11.7 | Heavy rain | |
| Galveston, Texas | 29.69 | 754.1 | 29.73 | 755.1 | 74 | 23.3 | 90 | SE | 12 | 5.4 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Grand Haven, Michigan | 29.02 | 737.1 | 29.64 | 752.8 | 60 | 15.6 | 77 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Threatening | |
| Indianapolis, Indiana | 28.99 | 736.3 | 29.73 | 755.1 | 70 | 21.1 | 80 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Indianola, Texas | 29.65 | 753.1 | 29.67 | 753.6 | 75 | 23.9 | 90 | SE | 19 | 8.5 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Jacksboro, Texas | 28.53 | 724.6 | 29.59 | 751.6 | 72 | 22.2 | 90 | SW | 6 | 2.7 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Jacksonville, Florida | 30.06 | 763.5 | 30.09 | 764.3 | 75 | 23.9 | 77 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.03 | 737.3 | 29.69 | 751.8 | 64 | 17.8 | 100 | S | 28 | 12.5 | ..... | ..... | 10n | ..... | Calm | 0.20 | 5.1 | Heavy rain | |
| Key West, Florida | 30.00 | 762.0 | 30.03 | 762.7 | 77 | 25.0 | 65 | SE | 13 | 5.8 | ..... | 5k | 0 | SE | ..... | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 30.04 | 763.0 | 30.06 | 763.5 | 59 | 15.0 | 88 | NE | 1 | 0.4 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Knoxville, Tennessee | 29.01 | 736.8 | 29.99 | 761.7 | 63 | 17.2 | 89 | Calm | 0 | 0 | ..... | 2ck | Haze | SW | ..... | 0 | 0 | Fair | |
| La Crosse, Wisconsin | 28.81 | 731.8 | 29.51 | 749.5 | 56 | 13.3 | 87 | E | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0.84 | 21.3 | Cloudy | |
| La Mesilla, New Mexico | 25.85 | 656.6 | 30.09 | 762.0 | 45 | 7.2 | 60 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.15 | 740.4 | 29.47 | 748.5 | 78 | 25.6 | 78 | SE | 10 | 4.5 | ..... | 10k | 0 | S | ..... | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 28.69 | 728.7 | 29.48 | 748.8 | 63 | 17.2 | 78 | SW | 6 | 2.7 | ..... | ..... | 10ks | ..... | W | 0.08 | 2.0 | Cloudy | |
| Los Angeles, California | 29.62 | 752.3 | 29.93 | 761.0 | 46 | 7.8 | 77 | N | 7 | 3.1 | ..... | 0 | 1s | ..... | Calm | 0.01 | 0.3 | Clear | |
| Louisville, Kentucky | 29.29 | 744.0 | 29.82 | 757.4 | 70 | 21.1 | 75 | S | 7 | 3.1 | ..... | 5k | 5s | S | S | 0 | 0 | Cloudy | |
| Lynchburg, Virginia | 29.39 | 746.5 | 30.05 | 763.3 | 65 | 18.3 | 58 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.08 | 738.6 | 29.77 | 756.1 | 46 | 7.8 | 84 | E | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.06 | 1.5 | Light rain | |
| Mason, Texas | 28.01 | 711.4 | 29.65 | 753.1 | 74 | 23.3 | 76 | S | 12 | 5.4 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Threatening | |
| Memphis, Tennessee | 29.52 | 749.8 | 29.82 | 757.4 | 71 | 21.7 | 85 | S | 8 | 3.6 | ..... | Haze | Haze | Calm | Calm | 0.40 | 10.2 | Hazy | |
| Milwaukee, Wisconsin | 28.93 | 734.8 | 29.65 | 753.1 | 46 | 7.8 | 100 | NE | 25 | 11.2 | ..... | ..... | 10n | ..... | ..... | 0.97 | 24.6 | Heavy rain | |
| Mobile, Alabama | 29.92 | 760.0 | 29.96 | 761.0 | 73 | 22.8 | 90 | SE | 4 | 1.8 | ..... | 5k | 2s | S | S | Inap. | Inap. | Fair | |
| Montgomery, Alabama | 29.78 | 756.4 | 30.01 | 762.2 | 69.5 | 20.8 | 84 | SE | 9 | 4.0 | ..... | 10c | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Morgantown, West Virginia | 28.89 | 733.8 | 29.92 | 760.0 | 58 | 14.4 | 70 | Calm | 0 | 0 | ..... | 0 | 8s | ..... | SW | 0 | 0 | Fair | |
| Mt. Washington, N. H. | 23.61 | 599.7 | 29.97 | 761.2 | 16 | — 8.9 | 66 | NW | 45 | 20.1 | ..... | 0 | 0 | ..... | ..... | 0.50 | 12.7 | Clear | |
| Nashville, Tennessee | 29.36 | 745.7 | 29.87 | 758.7 | 71 | 21.7 | 75 | SE | 5 | 2.2 | ..... | 8ck | 0 | SW | ..... | 0.02 | 0.5 | Fair | |
| New Haven, Connecticut | 29.98 | 761.5 | 30.10 | 764.5 | 58 | 14.4 | 58 | W | 4 | 1.8 | ..... | 5c | Haze | Calm | Calm | 0 | 0 | Fair | |
| New London, Connecticut | 30.02 | 762.5 | 30.07 | 763.8 | 56 | 13.3 | 63 | W | 4 | 1.8 | ..... | 5cs | Haze | NW | Calm | 0 | 0 | Fair | |
| New Orleans, Louisiana | 29.83 | 757.7 | 29.88 | 758.9 | 74 | 23.3 | 90 | SE | 5 | 2.2 | ..... | 5k | 0 | SE | ..... | 0.08 | 2.0 | Fair | |
| Newport, Rhode Island | 30.00 | 762.0 | 30.06 | 763.5 | 52 | 11.1 | 66 | Calm | 0 | 0 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| New York, New York | 29.92 | 760.0 | 30.09 | 764.3 | 54 | 12.2 | 54 | SW | 4 | 1.8 | ..... | 10c | Haze | W | Calm | 0 | 0 | Cloudy | |
| Norfolk, Virginia | 30.00 | 762.0 | 30.06 | 763.5 | 67 | 19.4 | 60 | E | 6 | 2.7 | ..... | 8cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| North Platte, Nebraska | 26.69 | 677.9 | 29.22 | 742.2 | 40 | 4.4 | 73 | W | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 30.03 | 762.7 | 30.06 | 763.5 | 43 | 6.1 | 83 | S | 4 | 1.8 | ..... | 0 | 2s | ..... | Calm | 0.01 | 0.3 | Fair | |
| Omaha, Nebraska | 28.37 | 720.6 | 29.39 | 746.5 | 57 | 13.9 | 75 | SW | 4 | 1.8 | ..... | 10k | 0 | SW | ..... | 0.04 | 1.0 | Cloudy | |
| Oswego, New York | 29.76 | 755.9 | 30.08 | 764.0 | 47 | 8.3 | 70 | E | 4 | 1.8 | ..... | 8c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Pembina, Dakota | 28.66 | 728.0 | 29.47 | 748.5 | 44.5 | 6.9 | 88 | E | 15 | 6.7 | ..... | ..... | 10n | ..... | E | 0.13 | 3.3 | Light rain | |
| Philadelphia, Pennsylvania | 30.06 | 763.5 | 30.11 | 764.8 | 57 | 13.9 | 63 | Calm | 0 | 0 | ..... | 2cs | 2s | N | N | 0 | 0 | Fair | |
| Phœnix, Arizona | 28.77 | 730.7 | 30.60 | 777.2 | 50 | 10.0 | 79 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.40 | 442.0 | 29.61 | 752.1 | 2 | —16.7 | 72 | W | 22 | 9.8 | ..... | 0 | 0 | ..... | ..... | 0.20 | 5.1 | Clear | |
| Pioche, Nevada | 23.83 | 605.3 | 29.60 | 751.8 | 29 | — 1.7 | 94 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | NW | 0.02 | 0.5 | Fair | |
| Pittsburg, Pennsylvania | 29.12 | 739.6 | 29.91 | 759.7 | 57 | 13.9 | 63 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Port Huron, Michigan | 29.19 | 741.4 | 29.84 | 757.9 | 48 | 8.9 | 85 | E | 14 | 6.3 | ..... | ..... | 10n | ..... | Calm | 0.29 | 7.4 | Light rain | |
| Portland, Maine | 29.96 | 761.0 | 30.01 | 762.2 | 49 | 9.4 | 51 | N | 10 | 4.5 | ..... | 1k | Haze | Calm | ..... | Inap. | Inap. | Clear | |
| Portland, Oregon | 30.08 | 764.0 | 30.19 | 766.8 | 46 | 7.8 | 77 | NW | 2 | 0.9 | ..... | ..... | 10ks | ..... | W | 6 | 0 | Cloudy | |
| Prescott, Arizona | 24.55 | 623.6 | 29.91 | 759.7 | 31 | 1.1 | 79 | NW | 2 | 0.9 | ..... | 0 | 8s | ..... | NE | 0.27 | 6.9 | Fair | |
| Punta Rassa, Florida | 30.05 | 763.3 | 30.06 | 763.5 | 73 | 22.8 | 81 | E | 8 | 3.6 | ..... | 2ck | Haze | W | Calm | 0 | 0 | Fair | |

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.83 | 757.7 | 30.06 | 763.5 | 50 | 10.0 | 65 | N | 4 | 1.8 | ..... | 1c | 0 | W | ..... | 0 | 0 | Clear | |
| Alpena, Michigan | 29.28 | 743.7 | 29.93 | 760.2 | 40 | 4.4 | 91 | E | 10 | 4.5 | ..... | ..... | 10n | ..... | E | 0.29 | 7.4 | Light rain | |
| Atlantic City, New Jersey | 30.08 | 764.0 | 30.10 | 764.5 | 54 | 12.2 | 79 | E | 7 | 3.1 | ..... | 8ck | 0 | Calm | ..... | 0 | 0 | Fair | |
| Augusta, Georgia | 29.88 | 758.9 | 30.06 | 763.5 | 69 | 20.6 | 85 | S | 1 | 0.4 | ..... | Haze | 8ks | Calm | SE | 0 | 0 | Cloudy | |
| Baltimore, Maryland | 30.06 | 763.5 | 30.11 | 764.8 | 60 | 15.6 | 60 | SE | 8 | 3.6 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Fair | |
| Barnegat, New Jersey | 30.08 | 764.0 | 30.11 | 764.8 | 54 | 12.2 | 79 | SE | 5 | 2.2 | ..... | 10ck;k | 0 | W | ..... | 0 | 0 | Cloudy | |
| Bismarck, Dakota | 27.54 | 699.5 | 29.39 | 746.5 | 46 | 7.8 | 100 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | NE | 0.52 | 13.2 | Cloudy | |
| Boise City, Idaho | 27.00 | 685.8 | 29.88 | 758.9 | 39 | 3.9 | 81 | SE | 4 | 1.8 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Boston, Massachusetts | 29.88 | 758.9 | 30.03 | 762.7 | 50 | 10.0 | 52 | NW | 11 | 4.9 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Brackettville, Texas | 28.48 | 723.4 | 29.44 | 747.8 | 76 | 24.4 | 86 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 28.40 | 721.3 | 29.35 | 745.5 | 50 | 10.0 | 100 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.06 | 1.5 | Cloudy | |
| Brownsville, Texas | 29.57 | 751.1 | 29.64 | 752.8 | 78 | 25.6 | 86 | S | 14 | 6.3 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Buffalo, New York | 29.28 | 743.7 | 29.98 | 761.5 | 49 | 9.4 | 71 | NE | 7 | 3.1 | ..... | ..... | 10s | ..... | W | 0 | 0 | Cloudy | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 42 | 5.6 | 91 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Burlington, Vermont | 29.82 | 757.4 | 30.09 | 764.3 | 41 | 5.0 | 65 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cairo, Illinois | 29.42 | 747.3 | 29.79 | 756.7 | 70 | 21.1 | 85 | S | 10 | 4.5 | ..... | ..... | 10s | ..... | S | 0.09 | 2.3 | Cloudy | |
| Camp Grant, Arizona | 25.07 | 636.8 | 29.87 | 758.7 | 60 | 15.6 | 2 | N | ..... | ..... | 1 | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Camp Verde, Arizona | 26.64 | 676.6 | 30.12 | 765.0 | 41 | 5.0 | 57 | NW | ..... | ..... | 1 | 8c | 0 | E | ..... | 0.22 | 5.6 | Fair | |
| Campo, California | 27.38 | 695.4 | 29.95 | 760.7 | 35 | 1.7 | 90 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.16 | 4.1 | Cloudy | |
| Cape Hatteras, N. Carolina | 30.06 | 763.5 | 30.06 | 763.5 | 67 | 19.4 | 95 | S | 12 | 5.4 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Cape Henry, Virginia | 30.02 | 762.5 | 30.04 | 763.0 | 60 | 15.6 | 88 | NE | 16 | 7.2 | ..... | 8cs | Haze | N | ..... | 0 | 0 | Fair | |
| Cape Lookout, N. Carolina | 30.06 | 763.5 | 30.08 | 764.0 | 67 | 19.4 | 95 | SW | 8 | 3.6 | ..... | 1cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Cape May, New Jersey | 30.09 | 764.3 | 30.12 | 765.0 | 56 | 13.3 | 74 | SE | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 30.04 | 763.0 | 30.11 | 764.8 | 72 | 22.2 | 85 | SW | 3 | 1.3 | ..... | 0 | 2ks | ..... | E | 0 | 0 | Fair | |
| Cheyenne, Wyoming | 23.70 | 602.0 | 29.64 | 752.8 | 35 | 1.7 | 53 | NW | 16 | 7.2 | ..... | 0 | 5s | ..... | NW | 0 | 0 | Fair | |
| Chicago, Illinois | 28.94 | 735.1 | 29.58 | 751.3 | 67 | 19.4 | 89 | SW | 13 | 5.8 | ..... | ..... | 10s | ..... | SW | 0.04 | 1.0 | Cloudy | |
| Cincinnati, Ohio | 29.18 | 741.2 | 29.80 | 756.9 | 69 | 20.6 | 75 | S | 4 | 1.8 | ..... | 10k | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Cleveland, Ohio | 29.15 | 740.4 | 29.85 | 758.2 | 57 | 13.9 | 58 | SE | 16 | 7.2 | ..... | ..... | 10ks | ..... | SW | 0 | 0 | Threatening | |
| Concho, Texas | 27.70 | 703.6 | 29.30 | 744.2 | 67 | 19.4 | 74 | W | ..... | ..... | 1 | 8k | 0 | W | ..... | 0.16 | 4.1 | Cloudy | |
| Corsicana, Texas | 29.18 | 741.2 | 29.62 | 752.3 | 73 | 22.8 | 90 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Davenport, Iowa | 28.96 | 735.6 | 29.56 | 750.8 | 67 | 19.4 | 89 | S | 10 | 4.5 | ..... | ..... | 10s | ..... | S | 0.80 | 20.3 | Cloudy | |
| Deadwood, Dakota | 24.97 | 634.2 | ..... | ..... | 34 | 1.1 | 90 | SE | 1 | 0.4 | ..... | ..... | 10n | ..... | Calm | 0.84 | 21.3 | Light snow | |
| Denison, Texas | 28.87 | 733.3 | 29.62 | 752.3 | 73 | 22.8 | 85 | S | 10 | 4.5 | ..... | ..... | 10ks | ..... | SW | 0.22 | 5.6 | Cloudy | |
| Denver, Colorado | 24.46 | 621.3 | 29.68 | 753.9 | 36 | 2.2 | 21 | SE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Detroit, Michigan | 29.12 | 739.6 | 29.76 | 755.9 | 57 | 13.9 | 58 | SE | 10 | 4.5 | ..... | ..... | 10s | ..... | SW | 0.02 | 0.5 | Cloudy | |
| Dodge City, Kansas | 27.06 | 687.3 | 29.30 | 744.2 | 47 | 8.3 | 48 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Dubuque, Iowa | 28.85 | 732.8 | 29.50 | 749.3 | 69 | 20.6 | 85 | SW | 10 | 4.5 | ..... | ..... | 8ks;fg. | ..... | SW;Calm | 0.32 | 8.1 | Cloudy | |
| Duluth, Minnesota | 28.92 | 734.6 | 29.89 | 751.8 | 39 | 3.9 | 91 | NE | 28 | 12.5 | ..... | ..... | 10n | ..... | NE | 0.45 | 11.4 | Light rain | |
| Eagle Pass, Texas | 28.81 | 731.8 | 29.48 | 748.8 | 75 | 23.9 | 90 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Eastport, Maine | 29.78 | 756.4 | 29.85 | 758.2 | 47 | 8.3 | 55 | N | 17 | 7.6 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 66 | 18.9 | 35 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.18 | 741.2 | 29.88 | 758.9 | 58 | 14.4 | 53 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| Escanaba, Michigan | 29.13 | 739.9 | 29.78 | 756.4 | 44 | 6.7 | 92 | E | 20 | 8.9 | ..... | ..... | 10n | ..... | E | 0.67 | 17.0 | Light rain | |
| Florence, Arizona | 28.23 | 717.0 | 29.83 | 757.7 | 50 | 10.0 | 93 | W | 2 | 0.9 | ..... | 2k | 5ks | W | W | 0.45 | 11.4 | Clearing | |
| Fort Bayard, New Mexico | 23.90 | 607.0 | 29.90 | 759.4 | 38 | 3.3 | 46 | Calm | 0 | 0 | ..... | 7k | 0 | ..... | ..... | 0 | 0 | Cloudy | |
| Fort Craig, New Mexico | 25.24 | 641.1 | 29.31 | 744.5 | 39 | 3.9 | 55 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 24.95 | 633.7 | 29.91 | 759.7 | 62 | 16.7 | 29 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.08 | 738.6 | 29.58 | 751.3 | 71 | 21.7 | 90 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | S | 0.03 | 0.8 | Cloudy | |
| Fort Griffin, Texas | 28.35 | 720.1 | 29.55 | 750.6 | 72 | 22.2 | 76 | SE | 12 | 5.4 | ..... | ..... | 8s | ..... | S | 0 | 0 | Threatening | |
| Fort St. Michael, Alaska | 29.81 | 757.2 | 29.84 | 757.9 | 14 | —10.0 | 100 | SW | 3 | 1.3 | ..... | ..... | 10s | ..... | SW | Inap. | Inap. | Cloudy | |
| Fort Sill, Indian Territory | 28.39 | 721.1 | 29.43 | 747.5 | 67 | 19.4 | 74 | E | 32 | 14.3 | ..... | ..... | 10n | ..... | SE | 0.46 | 11.7 | Heavy rain | |
| Galveston, Texas | 29.69 | 754.1 | 29.73 | 755.1 | 74 | 23.3 | 90 | SE | 12 | 5.4 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| Grand Haven, Michigan | 29.02 | 737.1 | 29.64 | 752.8 | 60 | 15.6 | 77 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Threatening | |
| Indianapolis, Indiana | 28.99 | 736.3 | 29.73 | 755.1 | 70 | 21.1 | 80 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Indianola, Texas | 29.65 | 753.1 | 29.67 | 753.6 | 75 | 23.9 | 90 | SE | 19 | 8.5 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Jacksboro, Texas | 28.53 | 724.6 | 29.59 | 751.6 | 72 | 22.2 | 90 | SW | 6 | 2.7 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Jacksonville, Florida | 30.06 | 763.5 | 30.09 | 764.3 | 75 | 23.9 | 77 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.03 | 737.3 | 29.69 | 751.8 | 64 | 17.8 | 100 | S | 28 | 12.5 | ..... | ..... | 10n | ..... | Calm | 0.20 | 5.1 | Heavy rain | |
| Key West, Florida | 30.00 | 762.0 | 30.03 | 762.7 | 77 | 25.0 | 65 | SE | 13 | 5.8 | ..... | 5k | 0 | SE | ..... | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 30.04 | 763.0 | 30.06 | 763.5 | 59 | 15.0 | 88 | NE | 1 | 0.4 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Knoxville, Tennessee | 29.01 | 736.8 | 29.99 | 761.7 | 63 | 17.2 | 89 | Calm | 0 | 0 | ..... | 2ck | Haze | SW | ..... | 0 | 0 | Fair | |
| La Crosse, Wisconsin | 28.81 | 731.8 | 29.51 | 749.5 | 56 | 13.3 | 87 | E | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0.84 | 21.3 | Cloudy | |
| La Mesilla, New Mexico | 25.85 | 656.6 | 30.00 | 762.0 | 45 | 7.2 | 60 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.15 | 740.4 | 29.47 | 748.5 | 78 | 25.6 | 78 | SE | 10 | 4.5 | ..... | 10k | 0 | S | ..... | 0 | 0 | Cloudy | |
| Leavenworth, Kansas | 28.69 | 728.7 | 29.43 | 748.8 | 63 | 17.2 | 78 | SW | 6 | 2.7 | ..... | ..... | 10ks | ..... | W | 0.08 | 2.0 | Cloudy | |
| Los Angeles, California | 29.62 | 752.3 | 29.96 | 761.0 | 46 | 7.8 | 77 | N | 7 | 3.1 | ..... | 0 | 1s | ..... | Calm | 0.01 | 0.3 | Clear | |
| Louisville, Kentucky | 29.29 | 744.0 | 29.82 | 757.4 | 70 | 21.1 | 75 | S | 7 | 3.1 | ..... | 5k | 5s | S | S | 0 | 0 | Cloudy | |
| Lynchburg, Virginia | 29.39 | 746.5 | 30.05 | 763.3 | 65 | 18.3 | 58 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 29.08 | 738.6 | 29.77 | 756.1 | 46 | 7.8 | 84 | E | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.06 | 1.5 | Light rain | |
| Mason, Texas | 28.01 | 711.4 | 29.65 | 753.1 | 74 | 23.3 | 76 | S | 12 | 5.4 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Threatening | |
| Memphis, Tennessee | 29.52 | 749.8 | 29.82 | 757.4 | 71 | 21.7 | 85 | S | 8 | 3.6 | ..... | Haze | Haze | Calm | Calm | 0.40 | 10.2 | Hazy | |
| Milwaukee, Wisconsin | 28.93 | 734.8 | 29.65 | 753.1 | 46 | 7.8 | 100 | NE | 25 | 11.2 | ..... | ..... | 10n | ..... | ..... | 0.97 | 24.6 | Heavy rain | |
| Mobile, Alabama | 29.92 | 760.0 | 29.96 | 761.0 | 73 | 22.8 | 90 | SE | 4 | 1.8 | ..... | 5k | 2s | S | S | Inap. | Inap. | Fair | |
| Montgomery, Alabama | 29.78 | 756.4 | 30.01 | 762.2 | 69.5 | 20.8 | 84 | SE | 9 | 4.0 | ..... | 10c | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Morgantown, West Virginia | 28.89 | 733.8 | 29.92 | 760.0 | 58 | 14.4 | 70 | Calm | 0 | 0 | ..... | 0 | 8s | ..... | SW | 0 | 0 | Fair | |
| Mt. Washington, N. H. | 23.61 | 599.7 | 29.97 | 761.2 | 16 | — 8.9 | 66 | NW | 45 | 20.1 | ..... | 0 | 0 | ..... | ..... | 0.50 | 12.7 | Clear | |
| Nashville, Tennessee | 29.36 | 745.7 | 29.87 | 758.7 | 71 | 21.7 | 75 | SE | 5 | 2.2 | ..... | 8ck | 0 | SW | ..... | 0.02 | 0.5 | Fair | |
| New Haven, Connecticut | 29.98 | 761.5 | 30.10 | 764.5 | 58 | 14.4 | 58 | W | 4 | 1.8 | ..... | 5c | Haze | Calm | Calm | 0 | 0 | Fair | |
| New London, Connecticut | 30.02 | 762.5 | 30.07 | 763.8 | 56 | 13.3 | 63 | W | 4 | 1.8 | ..... | 5cs | Haze | NW | Calm | 0 | 0 | Fair | |
| New Orleans, Louisiana | 29.83 | 757.7 | 29.88 | 758.9 | 74 | 23.3 | 90 | SE | 5 | 2.2 | ..... | 5k | 0 | SE | ..... | 0.08 | 2.0 | Fair | |
| Newport, Rhode Island | 30.00 | 762.0 | 30.06 | 763.5 | 52 | 11.1 | 66 | Calm | 0 | 0 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| New York, New York | 29.92 | 760.0 | 30.09 | 764.3 | 54 | 12.2 | 54 | SW | 4 | 1.8 | ..... | 10c | Haze | W | Calm | 0 | 0 | Cloudy | |
| Norfolk, Virginia | 30.00 | 762.0 | 30.06 | 763.5 | 67 | 19.4 | 60 | E | 6 | 2.7 | ..... | 8cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| North Platte, Nebraska | 26.69 | 677.9 | 29.22 | 742.2 | 40 | 4.4 | 73 | W | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 30.03 | 762.7 | 30.06 | 763.5 | 43 | 6.1 | 83 | S | 4 | 1.8 | ..... | 0 | 2s | ..... | Calm | 0.01 | 0.3 | Fair | |
| Omaha, Nebraska | 28.37 | 720.6 | 29.39 | 746.5 | 57 | 13.9 | 75 | SW | 4 | 1.8 | ..... | 10k | 0 | SW | ..... | 0.04 | 1.0 | Cloudy | |
| Oswego, New York | 29.76 | 755.9 | 30.08 | 764.0 | 47 | 8.3 | 70 | E | 4 | 1.8 | ..... | 8c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Pembina, Dakota | 28.66 | 728.0 | 29.47 | 748.5 | 44.5 | 6.9 | 88 | E | 15 | 6.7 | ..... | ..... | 10n | ..... | E | 0.13 | 3.3 | Light rain | |
| Philadelphia, Pennsylvania | 30.06 | 763.5 | 30.11 | 764.8 | 57 | 13.9 | 63 | Calm | 0 | 0 | ..... | 2cs | 2s | N | N | 0 | 0 | Fair | |
| Phœnix, Arizona | 28.77 | 730.7 | 30.60 | 777.2 | 50 | 10.0 | 79 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.40 | 442.0 | 29.61 | 752.1 | 2 | —16.7 | 72 | W | 22 | 9.8 | ..... | 0 | 0 | ..... | ..... | 0.20 | 5.1 | Clear | |
| Pioche, Nevada | 23.83 | 605.3 | 29.60 | 751.8 | 29 | — 1.7 | 94 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | NW | 0.02 | 0.5 | Fair | |
| Pittsburg, Pennsylvania | 29.12 | 739.6 | 29.91 | 759.7 | 57 | 13.9 | 63 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Port Huron, Michigan | 29.19 | 741.4 | 29.84 | 757.9 | 48 | 8.9 | 85 | E | 14 | 6.3 | ..... | ..... | 10n | ..... | Calm | 0.29 | 7.4 | Light rain | |
| Portland, Maine | 29.96 | 761.0 | 30.01 | 762.2 | 49 | 9.4 | 51 | N | 10 | 4.5 | ..... | 1k | Haze | Calm | ..... | Inap. | Inap. | Clear | |
| Portland, Oregon | 30.08 | 764.0 | 30.19 | 766.8 | 46 | 7.8 | 77 | NW | 2 | 0.9 | ..... | ..... | 10ks | ..... | W | 0 | 0 | Cloudy | |
| Prescott, Arizona | 24.55 | 623.6 | 29.91 | 759.7 | 34 | 1.1 | 79 | NW | 2 | 0.9 | ..... | 0 | 8s | ..... | NE | 0.27 | 6.9 | Fair | |
| Punta Rassa, Florida | 30.05 | 763.3 | 30.06 | 763.5 | 73 | 22.8 | 81 | E | 8 | 3.6 | ..... | 2ck | Haze | W | Calm | 0 | 0 | Fair | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Red Bluff, California | 29.65 | 753.1 | 30.02 | 762.5 | 48 | 8.9 | 85 | N | 2 | 0.9 | | 0 | Haze | | Calm | 0.01 | 0.3 | Clear | |
| Rochester, New York | 29.42 | 747.3 | 30.04 | 763.0 | 46 | 7.8 | 69 | E | 8 | 3.6 | | 10ck | 0 | W | | 0 | 0 | Cloudy | |
| Roseburg, Oregon | 29.61 | 752.1 | 30.19 | 766.8 | 45 | 7.2 | 84 | Calm | 0 | 0 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Sacramento, California | 29.94 | 760.5 | 30.02 | 762.5 | 48 | 8.9 | 89 | Calm | 0 | 0 | | 10ck | 0 | N | | Inap. | Inap. | Cloudy | |
| St. Louis, Missouri | 29.18 | 741.2 | 29.72 | 754.9 | 70 | 21.1 | 90 | W | 16 | 7.2 | | | 10n | | W | 0.41 | 10.4 | Light rain | |
| St. Marks, Florida | 30.03 | 762.7 | 30.05 | 763.3 | 70 | 21.1 | 95 | SE | 4 | 1.8 | | 0 | 5s | | SE | 0 | 0 | Fair | |
| St. Paul, Minnesota | 28.60 | 726.4 | 29.38 | 746.2 | 54 | 12.2 | 86 | E | 22 | 9.8 | | | 10s | | Calm | 0.25 | 6.3 | Cloudy | |
| Salt Lake City, Utah | 25.45 | 646.4 | 29.78 | 756.4 | 39 | 3.9 | 82 | Calm | 0 | 0 | | | 10s | | W | 0.23 | 5.8 | Cloudy | |
| San Antonio, Texas | 28.93 | 734.8 | 29.48 | 748.8 | 74 | 23.3 | 95 | S | 4 | 1.8 | | | 10s | | S | Inap. | Inap. | Cloudy | |
| San Diego, California | 28.94 | 735.1 | 30.01 | 762.2 | 45 | 7.2 | 92 | NE | 4 | 1.8 | | 0 | 0 | | | 0.12 | 3.0 | Clear | |
| Sandusky, Ohio | 29.17 | 740.9 | 29.82 | 757.4 | 59 | 15.0 | 65 | S | 18 | 8.0 | | | 10n | | SW | 0.05 | 1.3 | Light rain | |
| Sandy Hook, New Jersey | 30.07 | 763.8 | 30.10 | 764.5 | 62 | 16.7 | 61 | SW | 4 | 1.8 | | 5c | 0 | NW | | 0 | 0 | Fair | |
| San Francisco, California | 29.96 | 761.0 | 30.02 | 762.5 | 52 | 11.1 | 86 | W | 2 | 0.9 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Santa Fé, New Mexico | 23.01 | 584.4 | 29.55 | 750.6 | 30 | — 1.1 | 57 | E | 2 | 0.9 | | 0 | 0 | | | 0 | 0 | Clear | |
| Savannah, Georgia | 29.99 | 761.7 | 30.08 | 764.0 | 75 | 23.9 | 72 | SW | 4 | 1.8 | | 2c;ck | Haze | E | Calm | 0 | 0 | Fair | |
| Shreveport, Louisiana | 29.56 | 750.8 | 29.77 | 756.1 | 73 | 22.8 | 90 | SE | 4 | 1.8 | | | 10s | | S | 0 | 0 | Cloudy | |
| Smithville, North Carolina | 30.06 | 763.5 | 30.10 | 764.5 | 70 | 21.1 | 90 | SW | 6 | 2.7 | | 1c | 0 | W | | 0 | 0 | Clear | |
| Springfield, Massachusetts | 29.87 | 758.7 | 30.00 | 762.0 | 55 | 12.8 | 62 | Calm | 0 | 0 | | 2c | 0 | W | | 0 | 0 | Fair | |
| Stockton, Texas | 26.68 | 677.7 | 29.68 | 753.9 | 54 | 12.2 | 43 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.96 | 761.0 | 30.01 | 762.2 | 49 | 9.4 | 59 | NW | 16 | 7.2 | | 0 | 0 | | | 0 | 0 | Clear | |
| Toledo, Ohio | 29.09 | 738.9 | 29.74 | 755.4 | 61 | 16.1 | 61 | S | 8 | 3.6 | | Haze | 5s | Calm | S | 0 | 0 | Fair | |
| Tucson, Arizona | | | | | 46 | 7.8 | 92 | NW | | | 1 | | 10n | | NW | 0.03 | 0.8 | Light rain | |
| Tybee Island, Georgia | 30.05 | 763.3 | 30.08 | 764.0 | 71 | 21.7 | 85 | S | 4 | 1.8 | | 5k | Haze | S | Calm | 0 | 0 | Fair | |
| Umatilla, Oregon | 29.60 | 751.8 | | | 47 | 8.3 | 48 | SW | 28 | 12.5 | | 0 | 0 | | | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.64 | 752.8 | 29.89 | 759.2 | 69 | 20.6 | 95 | SE | 5 | 2.2 | | Haze | 0 | Calm | | 0 | 0 | Clear | |
| Virginia City, Montana | 24.03 | 610.4 | 29.51 | 749.5 | 35 | 1.7 | 70 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Visalia, California | 29.66 | 753.4 | 30.04 | 763.0 | 49 | 9.4 | 85 | Calm | 0 | 0 | | | 10s | | N | 0 | 0 | Cloudy | |
| Washington, D. C. | 29.99 | 761.7 | 30.10 | 764.5 | 61 | 16.1 | 55 | E | 4 | 1.8 | | 8cs | 0 | W | | 0 | 0 | Cloudy | |
| Wickenburg, Arizona | | | | | 38 | 3.3 | 72 | W | | | 1 | 2c | 0 | Calm | | 0.20 | 5.1 | Fair | |
| Wilmington, N. Carolina | 30.00 | 762.0 | 30.08 | 764.0 | 68 | 20.0 | 90 | SW | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Winnemucca, Nevada | 25.52 | 648.2 | 29.88 | 758.9 | 41 | 5.0 | 74 | SW | 4 | 1.8 | | | 10s | | SW | 0 | 0 | Cloudy | |
| Wood's Holl, Mass | 29.98 | 761.5 | 30.04 | 763.0 | 60 | 15.6 | 55 | NW | 8 | 3.6 | | Haze | 0 | Calm | | 0 | 0 | Clear | |
| Yankton, Dakota | 28.20 | 716.3 | 29.44 | 747.8 | 50 | 10.0 | 72 | SW | 10 | 4.5 | | 0 | 0 | | | Inap | Inap. | Clear | |
| Yuma, Arizona | 29.79 | 756.7 | 29.96 | 761.0 | 44 | 6.7 | 91 | Calm | 0 | 0 | | 0 | 0 | | | 0.02 | 0.5 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| St. Paul's Island, Alaska | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 29.91 | 759.7 | 29.97 | 761.2 | 23.0 | — 5.0 | 87 | S | 9 | 4.0 | | 2c | 2s | SW | | 0 | 0 | Fair | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 29.96 | 761.0 | 29.98 | 761.5 | 76 | 24.4 | 65 | E | 6.0 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.13 | 765.3 | 30.14 | 765.5 | 77 | 25.0 | 82 | Calm | 0 | 0 | | 8c | 2s | Calm | N | 0 | 0 | | James Gall. |
| Navassa, W. I. | 29.88 | 758.9 | 29.96 | 761.0 | 78 | 25.6 | | NE | 5 | 2.2 | | | | | | 0 | 0 | Fair | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | 29.94 | 760.5 | 29.94 | 760.5 | 84 | 28.9 | 79 | E | | | 3 | | 8ks | | | 0.650 | 16.51 | Cloudy | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | | | | | | | | | | | | | | | | | | | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.22 | 640.6 | | | 68.5 | 20.3 | 88 | Calm | | | 0 | 4cs;k | 4s;ks | | | 0.26 | 6.6 | | Thomas Herran. |

NOTE.--The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m., Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,156.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,550 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.07 | 763 8 | 48 | 8.9 | 48 | 8.9 | 100 | NW | 5 | 2.2 | ..... | ..... | 2 | ..... | NW | 0 | 0 | ..... | ..... | Fair..... | |
| Navy Yard, Pensacola, Fla. | 30.11 | 764.8 | 74 | 23.3 | 74 | 23.3 | 95 | ENE | 18 | 8.0 | ..... | ..... | 8 | ..... | NE | 0 | 0 | ..... | ..... | Cloudy..... | |
| Navy Yard, Portsmouth, N.H | 30.07 | 763.8 | 72 | 22.2 | 49 | 9.4 | 50 | WNW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Naval Hospital, Yokohama, Japan | 29.71* | 754.6* | 60 | 15.6 | 54.5 | 12.5 | 84 | E | ..... | ..... | 4 | ..... | 10ks;n | ..... | SW | Slight | Slight | ..... | ..... | Light rain.. | |
| Adams. Panama | 30.00 | 762.0 | 82 | 27.8 | 81 | 7.2 | 91 | NW | ..... | ..... | 1 | ..... | 8 | ..... | NW | ..... | ..... | Smooth | ..... | Fair ..... | |
| Alliance. Villefranche, France | 29.74‡ | 755.4‡ | ..... | ..... | 66 | 18.9 | 54 | NW | ..... | ..... | 0-1 | ..... | 4 | ..... | W | ..... | ..... | Light | S | Pleasant..... | |
| Ashuelot. Nagasaki, Japan | 29.89 | 759.2 | 57 | 13.9 | 54 | 12.2 | 93 | WSW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Canonicus, New Orleans, La | 29.94 | 760.5 | 53 | 11.7 | 73 | 22.8 | 95 | ESE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Colorado, New York, N. Y. | 30.07‡ | 763.8‡ | ..... | ..... | 57 | 13.9 | 52 | SW | 2 | 0.9 | ..... | ..... | 5 | ..... | NW | 0 | 0 | ..... | ..... | Hazy..... | |
| Constellation, N. 49° 35′ W. 0° 05′ | 29.90‡ | 759.4‡ | ..... | ..... | 51 | 10.6 | 86 | SSW | ..... | ..... | 1 | ..... | 8 | ..... | S | ..... | ..... | Smooth | S | Cloudy..... | |
| Constitution, Havre, France | 29.81‡ | 757.2‡ | ..... | ..... | 59 | 15.0 | 70 | SSE | ..... | ..... | 1 | ..... | 9 | ..... | Calm | ..... | ..... | ..... | ..... | Cloudy..... | |
| Despatch, Constantinople, Turkey. | 29.68‡ | 753.9‡ | ..... | ..... | 54 | 12.2 | 93 | NE | ..... | ..... | 2 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Rainy..... | |
| Franklin, Norfolk, Va | 30.18 | 766.6 | 68 | 20.0 | 67 | 19.4 | 60 | E | 5 | 2.2 | ..... | ..... | 5 | ..... | E | 0 | 0 | ..... | ..... | D. clouds..... | |
| Gettysburg Valetta, Malta | 29.80 | 756.9‡ | ..... | ..... | 65 | 18.3 | 89 | NW | ..... | ..... | 7 | ..... | 8 | ..... | NW | Blank | Blank | ..... | ..... | Threatening | |
| Guard, Porto Grande, Cape Verde Islands. | 30.04 | 763.0 | 75 | 23.9 | 74 | 23.3 | 76 | NE | ..... | ..... | 3 | ..... | 5 | ..... | NE | ..... | ..... | Ground | NW | Fair..... | |
| Hartford, Montevideo, Uraguay | 30.12 | 765.0 | 61 | 16.1 | 57 | 13.9 | 69 | N | 10 | 4.5 | ..... | ..... | 8 | ..... | W | 0 | 0 | Smooth | ..... | Cloudy..... | |
| Marion, Smyrna, Turkey | 29.62 | 752.3 | 68 | 20.0 | 69 | 20.6 | 52 | S | ..... | ..... | 6 | ..... | 10 | ..... | S | Light | Light | Chop | S | Cloudy..... | |
| Michigan, Erie, Pa | 29.40 | 746.7 | 65 | 18.3 | 57 | 13.9 | 63 | E | ..... | ..... | 1 | ..... | 10 | ..... | E | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monocacy, Shanghai, China | 30.12‡ | 765.0‡ | ..... | ..... | 60 | 15.6 | 71 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| New Hampshire, Port Royal, S. C | 30.32† | 770.1† | ..... | ..... | 72 | 22.2 | 85 | SW | 5<br>1 | 2.2<br>0.4 | ..... | ..... | 5 | ..... | SE | ..... | ..... | ..... | ..... | Fair ..... | |
| Omaha, Hampton Roads, Va | 30.11* | 764.8* | 66 | 18.9 | 62 | 16.7 | 88 | ENE | ..... | ..... | ..... | ..... | 2 | ..... | ENE | ..... | ..... | ..... | ..... | Bright..... | |
| Onward, Callao, Peru | 30.03† | 762.7† | ..... | ..... | 69 | 20.6 | 90 | Calm | ..... | ..... | 0 | ..... | 5 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee. Havana, Cuba, W. I. | 30.05‡ | 763.3‡ | ..... | ..... | 75 | 23.9 | 86 | ESE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Palos, Shanghai, China | 30.18* | 766.6* | 69 | 20.6 | 58 | 14.4 | 76 | SW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear. ..... | |
| Pensacola, N. 36° 40′, W. 135° 10′ | 30.46 | 773.7 | 55 | 12.8 | 51 | 10.6 | 72 | N | 10 | 4.5 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | Mod'ate | NW | Cloudy..... | |
| Plymouth. N. 32° 43′ W. 69° 35′ | 30.10‡ | 764.5‡ | ..... | ..... | 65 | 18.3 | 94 | W | ..... | ..... | 1 | ..... | 10 | ..... | NW | ..... | ..... | Smooth | ..... | Cloudy..... | |
| Powhatan, Norfolk, Va | 30.11‡ | 764.8‡ | ..... | ..... | 66 | 18.9 | 100 | SE | 10.8 | 4.8 | ..... | ..... | 5 | .... | ..... | 0 | 0 | ..... | ..... | Pleasant..... | |
| Ranger. Amoy, China | 30.16* | 766.1* | ..... | ..... | 66 | 18.9 | 84 | NE | ..... | ..... | 2 | ..... | 7 | .. ..... | Calm | ..... | ..... | Smooth | ..... | D. clouds..... | |
| Rio Bravo, Brownsville, Texas | 29.64 | 752.8 | 78 | 25.6 | 78 | 25.6 | 95 | SSE | ..... | ..... | 2 | ..... | 10 | ..... | Calm | .... .... | ..... | ..... | ..... | Cloudy..... | |
| Santee, Annapolis, Md | 30.09‡ | 764.3‡ | ..... | ..... | 62 | 16.7 | 61 | SE | ..... | ..... | 2 | ..... | 5 | ..... | NW | 0 | 0 | ..... | ..... | ..... | |
| Saratoga, Washington, D. C | 30.02 | 762.5 | 66 | 18.9 | 66 | 18 9 | 100 | E | ..... | ..... | 2 | ..... | 1 | ..... | Calm | 0 | 0 | ..... | ..... | Clear..... | |
| St. Louis, League Island, Pa | 30.04 | 763.0 | 65 | 18.3 | 67 | 13.9 | 63 | E | 5 | 2.2 | ..... | ..... | 2 | ..... | SE | 0 | 0 | ..... | ..... | Clear..... | |
| Supply, Havre, France | 29.92 | 760.0 | 60 | 15.6 | 58 | 14.4 | 70 | Var. | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Swatara, N. 23° 54′, W. 82° 45′ | 30.01‡ | 762.2‡ | ..... | ..... | 78 | 25.6 | 78 | SE | ..... | ..... | 5 | ..... | 5 | ..... | S&E | ..... | ..... | Rough | S&E | Fair ..... | |
| Tennessee, N. 27° 04′, E. 34° 33′ | 29.85* | 758.2* | 80 | 26.7 | 77 | 25.0 | 69 | NW | 2 | 0.9 | ..... | ..... | 0 | .... .... | ..... | ..... | ..... | Smooth | .... .... | Blue sky..... | |
| Trenton, Villefranche, France | 29.70‡ | 754.4‡ | ..... | ..... | 62 | 16.7 | 77 | W | ..... | ..... | 0-2 | ..... | 8 | ..... | E | 0 | 0 | ..... | ..... | Fair ..... | |
| Tuscarora, N. 16° 21′, W. 98° 37′ | 29.70 | 754.4 | 75 | 23.9 | 76 | 24.4 | 86 | NE | ..... | ..... | 0-1 | ..... | 2 | ..... | Calm | 0 | 0 | Long | WSW | Clear..... | |
| Vandalia, Villefranche, France | 29.78‡ | 756.4‡ | ..... | ..... | 65 | 18.3 | 72 | W | ..... | ..... | 1 | ..... | 8 | ..... | WNW | ..... | ..... | ..... | ..... | Fair ..... | |
| Wabash, Boston, Mass | 30.03‡ | 762.7‡ | ..... | ..... | 52 | 11.1 | 60 | WNW | 11 | 4.9 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Fair..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable; the position given is that at noon, local time, instead of that at 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Panama, N. 43° 16′, W. 125° 00′ | | | 30.22* | 767.6* | | | | WNW | | | 3 | | 7? | | SW | Mod'ate | WNW | Clear?..... | Capt. Cobb. |
| S. S. City of Peking, N. 35° 02′, E. 142° 25′ | | | 29.81† | 757.2† | 56 | 13.3 | 81 | NNW | 26.0 | 11.6 | | | 6 | | W | Small | NNW | D. clouds. ... | Capt. Seabury. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Tokio, N. 36° 52′, W. 136° 01′ | | | | | 53 | 11.7 | | NNE | | | 3 | | 4 | | NNE | Long | N | D. clouds..... | Capt. Dearborn. |
| S. S. Colima, N. 31° 24′, W. 119° 2′ | | | 30.05† | 763.3† | 61 | 16.1 | 77 | NW | | | 3 | | 5 | | NW | Mod'ate | W | D. clouds..... | Capt. Maury. |
| S. S. Costalica | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. W. H. Thompson. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, N. 37° 2′, W. 180° 21′ | | | 30.35* | 770.9* | | | | NW | | | 5 | | k | | N | Mod'ate | NW | Fine..... | Capt. John Metcalf. |
| S. S. Gaelic, N. 37° 47′, E. 146° 40′ | | | 29.67† | 753.6† | 52 | 11.1 | ?? | NE | | | 4 | | c | | NE | Smooth | N | D. clouds.... | Capt. W. H. Kidley |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andresse |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig, N. 49° 48′, W. 0° 39′ | | | 29.88 | 758.9 | 61.0 | 16.1 | 66 | W | | | 2 | | 5 | | SE | Light sea. | W | Overcast.... | |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Obser |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | Character | Direction From— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, Philadelphia, Pa | | | 30.07* | 763.8* | 54 | 12.2 | 100 | SE | | | 2 | | 4 | | NW | | | Cloudy | Captain Sargent. |
| S. S. Ohio, N. 41° 23′, W. 52° 55′ | | | 29.98 | 761.5 | 59.3 | 15.2 | 91 | S | | | 5 | | 10? | | S | Mod'ate | S | Clear? | Captain Morrison. |
| S. S. Pennsylvania, Liverpool | | | 29.81† | 757.2† | 65 | 18.3 | 100 | SE | | | 2 | | 8 | | SE | | | Partly clear | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for elevation; instrumental error not known. †Corrected for temperature and elevation, instrumental error not known.

## RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
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## ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| S. S. Scandinavian, N. 38° 27′, W. 70° 52′ | | | 30.14 | 765.5 | 53.5 | 11.9 | | N | | | 4 | | 8c | | N | Moderate; cross | N;S | D. clouds | Capt. W. Richardson. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

## MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, St. John, N. B. | | | 29.74 | 755.4 | 46 | 7.8 | 62 | NW | 17 | 7.6 | | | 2k | | NW | | | Clear | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.80 | 756.9 | 13 | —10.6 | 96 | E | 0.5 | 0.2 | | | 10s | | | | | Light snow | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg$^{d}$.) Chief Signal Officer. U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 23, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.02 | 762.5 | 65.5 | 18.6 | 88 | NE | ..... | ..... | 7 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Dr. Ollive. |
| Nemours | ..... | ..... | 29.93 | 760.1 | 71.2 | 21.8 | 51 | NNW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Michel. |
| Algiers | ..... | ..... | 29.76 | 756.0 | 82.4 | 28.0 | 36 | W | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Towiliere. |
| La Calle | ..... | ..... | 29.82 | 757.3 | 70.5 | 21.4 | 49 | WNW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Boulangeot. |
| Tunis | ..... | ..... | 29.93 | 760.3 | 71.1 | 21.7 | 41 | NW | ..... | ..... | 5 | ..... | 9 | ..... | ..... | 0 | 0 | Covered | Jacques. |
| Sfax | ..... | ..... | 29.94 | 760.5 | 71.6 | 22.0 | ..... | WNW | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Gau. |
| Saida | ..... | ..... | 30.12 | 765.1 | 75.7 | 24.3 | ..... | WSW | ..... | ..... | 1 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Herbin. |
| Tebessa | ..... | ..... | 29.88 | 759.0 | ..... | ..... | ..... | NW | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Watrin. |
| Geriville | ..... | ..... | 30.06 | 763.4 | 64.8 | 18.2 | 72 | NW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Lemaitlot. |
| Laghouat | ..... | ..... | 30.02 | 762.4 | 72.0 | 22.2 | 34 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Bertrand. |
| Biskra | ..... | ..... | 29.97 | 761.3 | 76.6 | 24.8 | 48 | NW | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.33 | 745.0 | 29.87 | 758.8 | 58.6 | 14.8 | 63 | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.008 | 0.2 | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.28 | 743.6 | 30.05 | 763.2 | 53.1 | 11.7 | 52 | NNE | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbiski. |
| Eperies | 29.14 | 740.2 | 30.02 | 762.4 | 57.2 | 14.0 | 40 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.69 | 728.7 | 29.95 | 760.6 | 52.5 | 11.4 | 81 | SW. | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.071 | 1.80 | ..... | Andreas Rospini. |
| Hermannstadt | 28.56 | 725.3 | 29.99 | 761.8 | 48.6 | 9.2 | 47 | ESE | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.40 | 721.3 | 29.71 | 754.5 | 60.4 | 15.8 | 64 | ESE | ..... | ..... | 6 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner |
| Lemberg | 29.14 | 740.2 | 30.15 | 765.8 | 46.6 | 8.1 | 56 | E | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Dr. T. Stanecki. |
| Pola | 29.62 | 752.3 | 29.73 | 755.1 | 65.8 | 18.8 | 47 | E | ..... | ..... | 5 | ..... | 2cs | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.54 | 750.2 | 30.00 | 761.9 | 58.5 | 14.7 | 33 | S | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.63 | 752.5 | 29.91 | 759.6 | 57.2 | 14.0 | 76 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.250 | 6.35 | ..... | Karl Stancel. |
| Trieste | 29.67 | 753.7 | 29.78 | 756.3 | 64.8 | 18.2 | 47 | ENE | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | Almost clear | P. Busin. |
| Vienna | 29.20 | 741.7 | 29.91 | 759.6 | 60.8 | 16.0 | 51 | ESE | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.13 | 714.6 | 29.61 | 752.1 | 56.8 | 13.8 | 68 | SSE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.106 | 2.7 | ..... | Prof. M. Passau. |
| Brussels | 29.39 | 746.4 | 29.58 | 751.4 | 59.7 | 15.4 | 83 | SSE | ..... | ..... | 1 | 2 | 8 | ..... | ESE | 0.177 | 4.5 | ..... | Royal Observatory. |
| Furnes | 29.60 | 751.7 | 29.62 | 752.3 | 58.8 | 14.9 | 84 | NNE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.346 | 8.8 | Foggy | M. E. de Cae. |
| Maeseyck | 29.51 | 749.6 | 29.64 | 752.8 | 64.6 | 18.1 | 52 | ESE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0.150 | 3.8 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4? feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

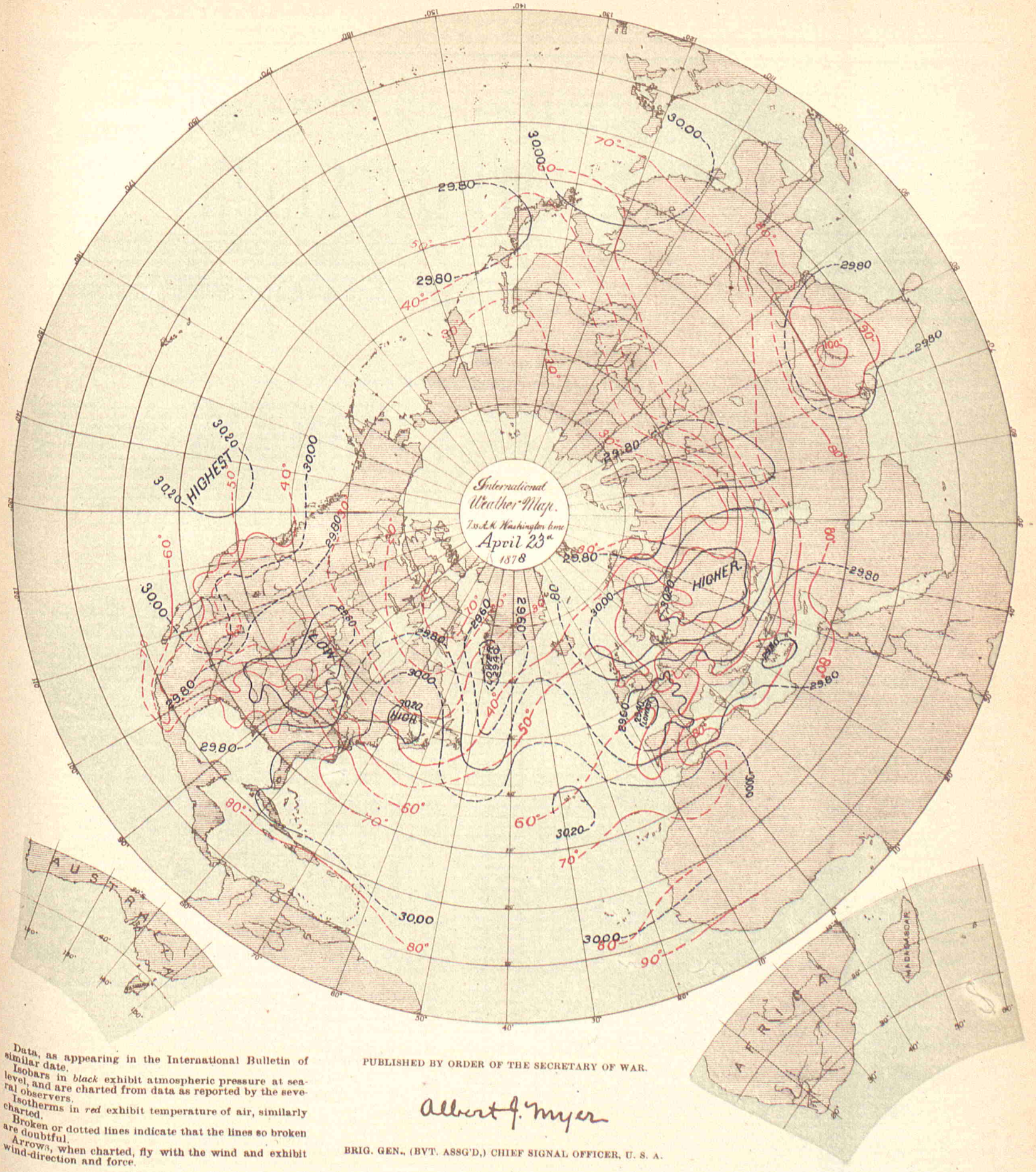
| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humility. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.92 | 760.0 | 30.02 | 762.5 | 45.4 | 7.4 | ..... | ENE | 12 | 5.4 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | Overcast | W. B swell. |
| Ardrossan | 29.81 | 757.2 | 29.82 | 757.4 | 52 | 11.1 | ..... | ENE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.78 | 756.4 | 50.0 | 10.0 | ..... | NNE | 12 | 5.4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.68 | 753.9 | 56.3 | 13.5 | ..... | ENE | 26 | 11.6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 29.71 | 754.6 | 51.0 | 10.6 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | J. L. E. Dreyer. |
| Bradford, Yorkshire | 29.33 | 745.0 | 29.72 | 754.9 | 49.6 | 9.8 | ..... | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.01 | 0.3 | Overcast | J. McLandsborough. |
| Bridgetown, (Barbados) | ..... | ..... | 29.94 | 760.5 | 83.0 | 28.3 | ..... | NE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.64 | 752.8 | 52.0 | 11.1 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | H. Todd. [H. C. |
| Cardington | ..... | ..... | 29.65 | 753.1 | 52.9 | 11.1 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | John McLaren. |
| Chatham, School M. E | 29.50 | 749.3 | 29.64 | 752.8 | 51.2 | 10.7 | ..... | E | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast | Q. M. Serg., Geo. Stuart, R. E |
| Dartmoor | 28.13 | 714.5 | 29.59 | 751.6 | 46.6 | 8.1 | ..... | E | ..... | ..... | 8 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Alexander Watt. |
| Donaghadee | 29.75 | 755.6 | 29.78 | 756.4 | 50 | 10.0 | ..... | E | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | J. Mac Gowan. |
| Dover | 29.55 | 750.6 | 29.58 | 751.3 | 54 | 12.2 | ..... | NE | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | ¾ clouded | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.69 | 754.1 | 53.8 | 12.1 | ..... | NE | 2.2 | 1.0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | Thomas Mackereth. |
| Falmouth, Observatory | 29.23 | 742.4 | 29.46 | 748.0 | 49.5 | 9.7 | ..... | NE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.93 | 709.4 | 30.15 | 765.8 | 65.0 | 18.3 | ..... | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.61 | 752.1 | 29.84 | 757.9 | 90.0 | 32.2 | ..... | W | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's College | ..... | ..... | 29.66 | 753.4 | 56 | 13.3 | ..... | NE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.83 | 757.7 | 29.88 | 758.9 | 68.2 | 20.1 | ..... | W | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Corpl. Wm. Allen, A. H. C. |
| Glasgow, Observatory | 29.66 | 753.4 | 29.87 | 758.7 | 47.7 | 8.7 | ..... | ENE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | D. G. Maclean. |
| Great Yarmouth | 29.67 | 753.6 | 29.67 | 753.6 | 50 | 10.0 | ..... | E | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.43 | 747.5 | 29.60 | 751.8 | 56.9 | 13.8 | ..... | E | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | Cloudy | The Staff, for G. B. Airy. |
| Guernsey | 29.18 | 741.8 | 29.40 | 746.7 | 50 | 10.0 | ..... | NE | ..... | ..... | 5 | ..... | 8 | ..... | ..... | ..... | ..... | Raining | Dr. S. E. Hoskins, F. R. S. |
| Helston | ..... | ..... | 29.45 | 748.0 | 54 | 12.2 | ..... | E | ..... | ..... | 4 | ..... | 8k | ..... | ..... | 0.13 | 3.3 | Raining | M. P. Moyle. |
| Holyhead | 29.63 | 752.6 | 29.68 | 753.9 | 52 | 11.1 | ..... | ENE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Misty | John Tilston. |
| Jersey | 29.13 | 739.9 | 29.42 | 747.3 | 51.1 | 10.6 | ..... | E | ..... | ..... | 5 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast | J. Fisher. |
| Kew, Observatory | ..... | ..... | 29.60 | 751.8 | 56.0 | 13.3 | ..... | E | 20 | 8.9 | ..... | ..... | 9kd | ..... | ..... | ..... | ..... | Misty | The Staff. |
| Kingstown | 29.68 | 753.9 | 29.71 | 754.6 | 50 | 10.0 | ..... | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Misty | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.66 | 753.4 | 53.6 | 12.0 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling | Wm. J. Harrison, F. G. S. |
| Malta, (Mediterranean) | 29.80 | 756.9 | 29.87 | 758.7 | 63.0 | 17.2 | ..... | NW | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Sgt. Fred. Travis, A. H. |
| Nairn | 29.90 | 759.4 | 29.99 | 761.7 | 48 | 8.9 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Clear | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 30.09 | 764.3 | 76.8 | 24.9 | ..... | NE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.51 | 749.5 | 29.70 | 754.4 | 55.2 | 12.9 | ..... | NE | ..... | ..... | 3 | ..... | 10d | ..... | NE | 0.066 | 1.67 | Raining | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.15 | 740.4 | 29.67 | 753.6 | 51.2 | 10.7 | ..... | ENE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.61 | 752.1 | 55 | 12.8 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | Mr. Lucas. |
| Plymouth | 29.39 | 746.5 | 29.47 | 748.5 | 49.5 | 9.7 | ..... | ENE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | John Merrifield. |
| Roche's Point | 29.57 | 751.1 | 29.62 | 752.3 | 58 | 14.4 | ..... | ENE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Cloudy | W. Kennedy. |
| Saint Ann's Head | 29.40 | 746.7 | 29.56 | 750.8 | 55 | 12.8 | ..... | E | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Squally | John C. Walker. |
| Sandwick Manse, (Orkneys | ..... | ..... | 30.06 | 763.5 | 49.5 | 9.7 | ..... | SE | 22 | 9.8 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.60 | 752.3 | 55.0 | 12.8 | ..... | NNW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Sergt. W. H. Lyne. |
| Sheffield | 29.56 | 750.8 | 29.74 | 755.4 | 51.9 | 11.1 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.01 | 0.3 | Showery | W. F. Cooper. |
| Silloth Rectory | 29.77 | 756.1 | 29.80 | 756.9 | 49.1 | 9.5 | 86 | NE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0 | 0 | D. clouds | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.33 | 745.0 | 29.74 | 755.4 | 51.0 | 10.6 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 29.93 | 760.2 | 54 | 12.2 | ..... | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Clear | John Sutherland. |
| Stratfield Turgiss | 29.32 | 744.7 | 29.53 | 750.0 | 57.3 | 14.1 | ..... | SE | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | Showery | Rev. C. H. Griffith, F. M |
| Thurso | ..... | ..... | 30.02 | 762.5 | 50 | 10.0 | ..... | SE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 29.52 | 749.8 | 52 | 11.1 | ..... | E | ..... | ..... | 7 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 29.66 | 753.4 | 54.1 | 12.3 | ..... | NNE | 27 | 12.1 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Misty | The Staff. |
| **Sub-Series.** | | | | | | | | | | | | | | | | | | | |
| Ualf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.72 | 754.9 | 64.0 | 17.8 | 88 | NW | ..... | ..... | 5 | ..... | 4k | ..... | ..... | 0 | 0 | ..... | Francis Abbott, F. R. A. S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.81 | 757.2 | 30.00 | 761.9 | 79.5 | 26.4 | 67 | SE | 16.5 | 7.4 | ..... | 0 | 1 | ..... | ..... | 2.36 | 59.9 | Squally | C. Meldrum. |
| Melbourne, Observatory | 30.02 | 762.5 | 30.11 | 764.8 | 53.0 | 11.7 | 86 | W | 6 | 2.7 | ..... | ..... | 4 | ..... | ..... | 0.02 | 0.5 | Fine | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m.

## MARINE SERIES.

| VESSELS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humility. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Algeria, N. 47° 0′, W. 37° 25′ | ..... | ..... | 30.06 | 763.5 | 58 | 14.4 | ..... | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 5* | N;8W | Overcast | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. E. Monland. |
| Ship Camperdown | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. C. Prehn. |
| S. S. Naid, N. 44° 15′, W. 35° 10′ | ..... | ..... | 30.18 | 766.6 | 56 | 13.3 | ..... | SSE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 3 | NW | Overcast | Capt. J. Smith. |
| S. S. Peruvian, N. 46° 50′ W. 44° 30′ | ..... | ..... | 29.65 | 753.1 | 47 | 8.3 | ..... | SSW | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 4 | SSW | Misty | Capt. W. H. Smith, R. N. [R. |
| Royal Alice | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Alex Simpson. |
| S. S. Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Longley. |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San Jose | 26.22 | 666.0 | ..... | ..... | 71.6 | 22 0 | 71 | E | ..... | ..... | 1 | ..... | Haze | ..... | ..... | 0 | 0 | ..... | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.10 | 764.4 | 30.14 | 765.6 | 51.8 | 11.0 | 54 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Fanöe | 29.96 | 760.9 | 29.98 | 761.4 | 57.4 | 14.1 | 50 | ESE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Godthaab, (Greenland) | 29.34 | 745.1 | 29.38 | 746.2 | 33.4 | 0.8 | 71 | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Stykkisholm, (Iceland) | 29.67 | 753.6 | 29.71 | 754.7 | 39.0 | 3.9 | 90 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Thorshavn, (Faröe) | 30.01 | 762.3 | 30.05 | 763.2 | 49.5 | 9.7 | 91 | WSW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | |
| Vestervig | 29.86 | 758.5 | 30.03 | 762.8 | 56.5 | 13.6 | 40 | E | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.10 | 739.0 | 29.65 | 753.0 | 48.2 | 9 | 86 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.08 | 2. | Covered | Collignon, Director. |
| Amiens, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bonvarne, Director. |
| Avignon, Normal School | 29.62 | 752.3 | 29.70 | 754.3 | 57.2 | 14 | 86 | SE | ..... | ..... | 1 | ..... | 10 | ..... | SSE | ..... | ..... | Rainy | Mr. Giraud, Director |
| Bar-sur-Seine | 29.02 | 737.2 | 29.57 | 751.0 | 57.7 | 14.3 | 54 | S | ..... | ..... | 2 | ..... | 10n | ..... | S | 0.031 | 0.8 | Covered | C. Saillard. |
| Beaumette Obs'y (Angers) | ..... | ..... | ..... | ..... | 63.0 | 17.2 | 49 | SE | ..... | ..... | 2 | ..... | 5 | ..... | S | 0 | 0 | Cloudy | Normal School. |
| Beauvais | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Albert Cheux. |
| Besançon | 28.78 | 731.0 | 29.65 | 753.2 | 59.2 | 15.1 | 62 | S | ..... | ..... | 2 | ..... | 10 | ..... | S | 0.051 | 1.3 | Covered | Normal School. |
| Bourg-en-Bresse | 28.83 | 732.2 | 29.74 | 755.3 | 55.2 | 12.9 | 81 | S | ..... | ..... | 2 | ..... | 10n | ..... | S | ..... | ..... | Raining | Normal School. |
| Bourges, Normal School | 29.06 | 738.0 | 29.60 | 751.8 | 57.2 | 14 | 78 | SE | ..... | ..... | 2 | ..... | 5 | ..... | SE | 0 | 0 | Cloudy | A. Wagner, Director. |
| Brest, Naval Observatory | 29.08 | 738.7 | 29.30 | 744.2 | 58.5 | 14.7 | 78 | SW | ..... | ..... | 2 | ..... | 10 | ..... | SW | 0.157 | 4.00 | ..... | The Staff. |
| Carcassonne, Normal School | 29.27 | 743.5 | 29.69 | 754.0 | 54.3 | 12.4 | 87 | W | ..... | ..... | 2 | ..... | 10 | ..... | W | 0.059 | 1.5 | Rainy | Vateau, Director. |
| Caen | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| Chartres, Normal School | 28.98 | 736.2 | 29.54 | 750.4 | 52.7 | 11.5 | 95 | SW | ..... | ..... | 2 | ..... | 10 | ..... | SW | 0.071 | 1.8 | Covered | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.30 | 744.3 | 29.61 | 752.2 | 62.6 | 17.0 | 73 | S | ..... | ..... | 4 | ..... | 10 | ..... | N | 0 | 0 | Covered | T. Leloup, Director. |
| Clermont-Fd., Puy de D.Obs | 28.21 | 716.4 | 29.53 | 750.0 | 56.7 | 13.7 | 64 | SE | ..... | ..... | 2 | ..... | 10 | ..... | SW | 0.047 | 1.2 | Covered | Alluard, Director. |
| Commercy, Normal School | 28.80 | 731.6 | 29.67 | 753.5 | 58.3 | 14.6 | 93 | ESE | ..... | ..... | 2 | ..... | 10 | ..... | ESE | 0.04 | 1. | Covered | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.61 | 726.8 | 29.76 | 755.8 | 57.0 | 13.9 | 58 | SW | ..... | ..... | 2 | ..... | 10 | ..... | SW | 0 | 0 | Covered | M. Kina. |
| Grenoble | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| La Roche-sur-Yon, N. School | 29.27 | 743.4 | 29.48 | 748.7 | 57.2 | 14.0 | 74 | SW | ..... | ..... | 4 | ..... | 8 | ..... | W | 0.181 | 4.6 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.17 | 740.8 | 29.47 | 748.5 | 53.4 | 11.9 | 86 | S | ..... | ..... | 2 | ..... | 8 | ..... | SE | 0.213 | 5.4 | Very cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 28.78 | 730.9 | 29.68 | 753.9 | 55.4 | 13 | 86 | ..... | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.008 | 0.2 | Covered | Voudez, Director. |
| Lorient, Naval Observatory | 29.28 | 743.8 | 29.38 | 746.3 | 59.7 | 15.4 | 76 | SW | ..... | ..... | 4 | ..... | 8 | ..... | S | 0.220 | 5.6 | ¾ Covered | T. Carré, Director. |
| Mâcon, Normal School | 28.89 | 733.8 | 29.60 | 751.7 | 50.7 | 10.4 | 70 | WSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.04 | 1. | Covered | M. Marchal, Director. |
| Metz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. A. Schuster, Dir. |
| Mirecourt | 28.57 | 725.7 | 29.59 | 751.6 | 58.5 | 14.7 | 61 | SW | ..... | ..... | 4 | ..... | 8 | ..... | SW | 0 | 0 | Very cloudy | Normal School. |
| Nismes, Normal School | 29.42 | 747.2 | 29.62 | 752.4 | 57.2 | 14 | 84 | S | ..... | ..... | 4 | ..... | 8 | ..... | S | 1.02 | 26. | Very cloudy | Boyer, Director. |
| Orleans, Normal School | 29.14 | 740.2 | 29.51 | 749.6 | 70.7 | 21.5 | 87 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.08 | 2. | Covered | Bernard, Director. |
| Paris, Observatory | 29.28 | 743.8 | 29.52 | 749.9 | 61.5 | 16.4 | 44 | SE | ..... | ..... | 2 | ..... | 8 | ..... | SE | 0 | 0 | Almost cov'd | National Observatory. |
| Privas | 28.68 | 728.4 | 29.73 | 755.2 | 55.8 | 13.2 | 87 | N | ..... | ..... | 2 | ..... | 10 | ..... | N | 1.57 | 40. | Covered | Normal School |
| Puy de Dome (Summit) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.49 | 749.1 | 29.52 | 749.9 | 51.4 | 10.8 | 95 | SW | ..... | ..... | 6 | ..... | 8 | ..... | SW | 0 | 0 | ¾ covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.42 | 747.3 | 29.51 | 749.5 | 64.4 | 18.0 | 44 | SE | ..... | ..... | 4 | ..... | 2 | ..... | SE | 0 | 0 | Slightly cl'dy | F. Lucard, Director |
| Saint Malo (Port) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. H. Hercouet |
| Tarbes, Normal School | 28.52 | 724.4 | 29.58 | 751.2 | 60.8 | 16 | 69 | WSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.51 | 13. | Raining | T. Hugues, Director |
| Villefranche | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Vilot, Director |
| SUB-SERIES. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort de France, Martinique | 29.79 | 756.6 | 29.82 | 757.3 | 81.0 | 27.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.39 | 10. | ..... | L'Abbé Marchési. |
| Lyons | ..... | ..... | 29.69 | 754.1 | 55.6 | 13.1 | 68 | ..... | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.31 | 8. | Rainy | M. Jeys. |
| Marseilles, Observatory | ..... | ..... | 29.69 | 754.0 | 63.5 | 17.5 | 54 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.445 | 11.30 | Raining | The Staff. |
| Mont-Louis | 24.49 | 622 0 | 29.80 | 757.0 | 46.4 | 8.0 | 72 | SSW | 18.6 | 8.33 | ..... | ..... | 5 | ..... | SSW | 0.055 | 1.4 | ..... | Mr. Falguère. |
| Nice | ..... | ..... | 29.76 | 756.0 | 62.4 | 16.9 | 90 | SW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Rainy | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.23 | 742.5 | 29.51 | 749.5 | 63.3 | 17.4 | 52 | SE | ..... | ..... | 3 | ..... | 8 | ..... | ESE | 0 | 0 | ..... | Marié Davy, Director |
| Perpignan | ..... | ..... | 29.61 | 752.2 | 62.8 | 17.1 | 67 | E | 7.4 | 3.33 | ..... | ..... | 8 | ..... | WNW | 0.161 | 4.1 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.14 | 562.3 | ..... | ..... | 33.1 | 0.6 | ..... | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.941 | 23.9 | Snowy | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.36 | 745.8 | 29.53 | 750.0 | 62.6 | 17.0 | 44 | SE | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0.004 | 0.1 | Cloudy | E. Renou. |
| Toulouse, Observatory | 28.96 | 735.6 | 29.67 | 753.7 | 52.7 | 11.5 | 74 | SE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.437 | 11.10 | ..... | The Staff. |
| Tours | ..... | ..... | ..... | ..... | ..... | ..... | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | SSW | 0.173 | 4.4 | ..... | C. Marquet. |
| Versailles, (near Paris) | ..... | ..... | 29.52 | 749.8 | 63.0 | 17.2 | 43 | SE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.002 | 0.05 | Covered | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.11 | 764.9 | 30.14 | 765.6 | 58.3 | 14.6 | 71 | SW | 7.4 | 3.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,368 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.85 | 732.9 | 29.69 | 754.1 | 67.1 | 19.5 | 57 | SE | | | 7 | | 0 | | | 0.071 | 1.8 | | Prof. Dr. Hoh. |
| Berlin | 29.81 | 757.2 | 29.98 | 761.5 | 60.1 | 15.6 | 33 | SE | | | 4 | | 0 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.51 | 749.5 | 30.04 | 763.0 | 55.9 | 13.3 | 45 | E | | | 3 | | 0 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.22 | 742.1 | 29.63 | 752.7 | 62.4 | 16.9 | 63 | E | | | 1 | | 5 | | | 0.130 | 3.3 | Light clouds | Albert Senz. |
| Cassel | 29.24 | 742.6 | 29.84 | 757.9 | 66.9 | 19.4 | 45 | E | | | 4 | | 2 | E | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.48 | 748.7 | 29.64 | 752.8 | 69.4 | 20.8 | 37 | E | | | 3 | | 3 | | | 0.51 | 13. | | Director Lose. |
| Emden | 29.76 | 755.9 | 29.80 | 756.8 | 63.1 | 17.3 | 42 | E | | | 4 | | 0 | | | 0 | 0 | | Prof. Prestel. |
| Frankfort on the Main | 29.34 | 745.1 | 29.69 | 754.0 | 68.0 | 20 | 28 | ESE | | | 5 | | 2 | | | 0.343 | 8.7 | | Physical Society. |
| Friedrichshafen | 28.24 | 717.4 | 29.66 | 753.3 | 55.0 | 12.8 | 78 | WSW | | | 3 | | 5 | SW | | | | Light rain | M. Wilhelm. |
| Hamburg | 29.86 | 758.4 | 29.93 | 760.2 | 60.1 | 15.6 | 41 | ESE | | | 5 | | 0 | | | 0 | 0 | Clear. | Captain F. Hegemann. |
| Kiel | 29.95 | 760.7 | 29.97 | 761.2 | 58.3 | 14.6 | 40 | E | | | 6 | | 0 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 30.15 | 765.8 | 30.23 | 767.9 | 57.6 | 14.2 | 38 | SE | | | 4 | | 2 | | | 0 | 0 | | Prof. E Luther |
| Köslin | | | 30.10 | 764.4 | 58.6 | 14.8 | | E | | | 4 | | 0 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.48 | 748 8 | 29.90 | 759.4 | 61.5 | 16.4 | 52 | E | | | 5 | | 1 | | | 0 | 0 | | Prof. Bruhns. |
| Memel, Naval School | 30.25 | 768.3 | 30.30 | 769.5 | 48.2 | 9.0 | 56 | W | | | 1 | | 3c | | | | | | Reinbrecht von Skalweit. |
| Neufahrwasser | 30.20 | 767.1 | 30.22 | 767.5 | 50.4 | 10.2 | 64 | E | | | 3 | | 2 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.84 | 758.0 | 30.13 | 765 4 | 53.8 | 12.1 | 45 | N | | | 8 | | 0 | | | 0 | 0 | | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.12 | 739.6 | 29.65 | 753.1 | 63.9 | 17.7 | 66 | Calm | | | 0 | | 10 | | | 0 | 0 | | Dr. Schur. |
| Stuttgart | 28.72 | 729.6 | 29.64 | 752.9 | 61.2 | 16.2 | 62 | SE | | | 1 | | 4 | W | | 0.094 | 2.4 | Thunder-storm | Prof. Schoder. |
| Treves, (Trier) | 29.02 | 737.2 | 29.54 | 750.3 | 64.0 | 17.8 | 57 | SE | | | 6 | | 10 | | | 0.001 | 0.04 | Foggy | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.22 | 716.7 | 29.66 | 753.3 | 63.3 | 17.4 | 42 | ESE | 9 | 4 | | | 2ck | | ESE | 0 | 0 | | Dr. Von Bebber. |
| Wustrow, Naval School | 30.09 | 764.2 | 30.13 | 765.2 | 56.8 | 13.8 | 50 | ESE | | | 5 | | 0 | | | 0 | 0 | | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.21 | 742.0 | 29.60 | 751.9 | 64.8 | 18.2 | | S | | | 2.0 | | | | | | | ⅛ clear | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.75 | 755.5 | 29.80 | 756.8 | 82.7 | 28.2 | 77 | WSW | 28? | 12.5? | | | 3 | | | 0 | 0 | D. clouds | |
| Deesa | 29 30 | 744.3 | 29.76 | 756.0 | 96.7 | 35.9 | 33 | W | | | | | 1 | WNW | | 0 | 0 | D. clouds | |
| Bombay | 29.80 | 756.8 | 29.83 | 757.8 | 84.5 | 29.2 | 74 | WNW | 16 | 7.2 | | | 2 | SSW | | 0 | 0 | D. clouds | |
| Poona | 27.80 | 706.0 | 29.75 | 755.5 | 91.8 | 33.2 | 27 | NW | | | | | | | | 0 | 0 | Dust-whirl | |
| Lahore | 29.02 | 737.0 | 29.75 | 755.6 | 86.0 | 30.0 | 35 | N | 3.9 | 1.7 | | | 7 | | | Inap. | Inap. | Raining | |
| Belgaum | 27.28 | 692.9 | 29.76 | 755.9 | 87.0 | 30.6 | 53 | W | 10 | 4.5 | | | 1 | | | 0 | 0 | Misty | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.83 | 732.3 | 29.71 | 754.7 | 88.8 | 31.6 | 32 | Calm | 1 | 0.4 | | | 9 | | | 0 | 0 | | |
| Agra | 29.12 | 739.6 | 29.66 | 753.3 | 100.6 | 38.1 | 16 | N | | | | | 1 | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.69 | 728.7 | 29.70 | 754.3 | 98.5 | 36.9 | 27 | SSE | 3.9 | 1.7 | | | 4 | | NE | 0 | 0 | D. clouds | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.31 | 744.5 | 29.67 | 753.6 | 95.8 | 35.4 | 39 | SW | 4.4 | 2.0 | | | 7 | | SW | 0 | 0 | D. clouds | |
| Allahabad | 29.36 | 745.7 | 29.66 | 753.? | 100.? | 38.2 | 22 | Calm | 0.9 | 0.4 | | | 2 | | | 0 | 0 | D. clouds | |
| Patna | 29.53 | 750.0 | 29.70 | 754.5 | 97.8 | 36.6 | 33 | E | 2.7 | 1.2 | | | 4 | E | E | 0 | 0 | D. clouds | |
| Hazaribagh | 27.76 | 705.1 | 29.74 | 755.4 | 86.3 | 30.2 | 29 | SW | 7.7 | 3.4 | | | 10 | | SW | 0 | 0 | Thunder; lightn'g | |
| Cuttack | 29.79 | 754.4 | 29.78 | 756.4 | 87.1 | 30.6 | 57 | WSW | 9.5 | 4.2 | | | 4 | | | 0 | 0 | D. clouds | |
| Calcutta (Alipore) | 29.71 | 755.5 | 29.76 | 756.0 | 86.7 | 30.4 | 69 | SSW | 13 | 5.8 | | | 10 | | W | 0 | 0 | Thunder; lightn'g | |
| Goalpara | 29.46 | 748.2 | 29.85 | 758.3 | 71.6 | 22.0 | 88 | E | 9.9 | 4.4 | | | 9 | | S | 0.57 | 14.5 | Gloomy | |
| Chittagong | 29.80 | 756.9 | 29.89 | 759.3 | 84.9 | 29.4 | 72 | WSW | 8.5 | 3.8 | | | 10 | | | 0 | 0 | Raining | |
| Sibsagar | 29.61 | 752.2 | 29.96 | 760.9 | 73 | 22.8 | 84 | ENE | 3.3 | 1.5 | | | 10 | W | W | 0.09 | 2.3 | Gloomy | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.38 | 720.8 | 29.70 | 754.3 | 96 | 35.6 | 28 | NW | 4.9 | 2.2 | | | | | | 0 | 0 | Blue sky | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.34 | 745.1 | 29.74 | 755.4 | 63.0 | 17.2 | 49 | E | 11.9 | 5.3 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. Giovanni Codig. |
| Padua | 29.63 | 752.6 | 29.74 | 755.3 | 63.5 | 17.5 | 52 | E | 14.3 | 6.4 | ..... | ..... | 6 | SSW | ..... | 0.016 | 0.4 | ..... | Prof. Dott. Lorenzloni |
| Vicenza | 29.56 | 750.7 | 29.74 | 755.5 | 63.9 | 17.7 | 57 | NE | 2.5 | 1.1 | ..... | ..... | 7 | E | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.43 | 722 2 | 29.73 | 755.2 | 57.6 | 14.2 | 63 | N | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.25 | 742.9 | 29.76 | 755.9 | 62.8 | 17.1 | ..... | E | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0.055 | 1.4 | ..... | Prof. Schiaparelli. |
| Moncalieri | 28.85 | 732.8 | 29.75 | 755.6 | 54.0 | 12.2 | 86 | WNW | 8.1 | 3.6 | ..... | ..... | 10 | SE | ..... | 0.016 | 0.4 | ..... | Prof. P. F. Denza. |
| Mondovi | 27.85 | 707.3 | 29.74 | 755.5 | 55.9 | 13.3 | 67 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.52 | 749.9 | 29.74 | 755.5 | 63.5 | 17.5 | 75 | SW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.57 | 751.0 | 29.74 | 755.3 | 64.2 | 17.9 | 65 | SW | 2.5 | 1.1 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.45 | 748.0 | 29.76 | 756.0 | 63.1 | 17.3 | 61 | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.44 | 747.8 | 29.69 | 754.2 | 73.9 | 23.3 | 28 | W | ..... | ..... | 2 | ..... | 6 | NW | ..... | 0 | 0 | ..... | Cav. F Meucci. |
| Leghorn | 29.65 | 753 2 | 29.74 | 755.3 | 62.6 | 17.0 | 73 | W | 6.9 | 3.1 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 29.72 | 754.9 | 29.77 | 756.1 | 59.9 | 15.5 | 80 | N | 12.5 | 5.6 | ..... | ..... | 2 | N | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.20 | 716.3 | 29.74 | 755.4 | 58.1 | 14.5 | 71 | NE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.60 | 751.7 | 29.71 | 754.5 | 68.4 | 20.2 | 78 | NNW | ..... | ..... | 4 | ..... | 6 | NW | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.54 | 750.3 | 29.71 | 754.7 | 70.2 | 21.2 | 54 | WSW | 9.4 | 4.2 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrar |
| Naples, O. U. | 29.53 | 750.1 | 29.73 | 755.1 | 71.1 | 21.7 | 43 | WSW | ..... | ..... | 4 | ..... | 5 | NE | ..... | 0.083 | 2.1 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 60.8 | 16.0 | 75 | ENE | 6.3 | 2.8 | ..... | ..... | 3 | ENE | ..... | 0.087 | 2.2 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.69 | 751.7 | 29.79 | 756.6 | 66.2 | 19.0 | 30 | NW | ..... | ..... | 2 | ..... | 3 | NW | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 28.87 | 733.3 | 29.74 | 755.5 | 66.9 | 19.4 | 77 | SW | 2.5 | 1.1 | ..... | ..... | 8 | ..... | ..... | 0.201 | 5 1 | ..... | Prof. F. D. Conti. |
| Palermo | 29.49 | 749.1 | 29.74 | 755.5 | 63.3 | 17.4 | 65 | W | 13.7 | 6.1 | ..... | ..... | 10 | ..... | ..... | 0.020 | 0.5 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.67 | 753.5 | 29.74 | 755.4 | 68.4 | 20.2 | 54 | WNW | ..... | ..... | 2 | ..... | 7 | WNW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.21 | 741.8 | 29.76 | 755.9 | 68.7 | 20.4 | 47 | WNW | 0 | 0 | ..... | ..... | 3 | W | ..... | 0.055 | 1.4 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nagasaki | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Tokei (Yeddo) | 29.75 | 755.6 | 29.82 | 757 4 | 46.1 | 7.8 | 58 | N | 7.7 | 3.4 | ..... | ..... | 3s;ck | ..... | ..... | 0.280 | 7.11 | Fair | The Observatory. |
| Tokei (Yeddo) University | 29.58 | 751 3 | 29.68 | 753.8 | 47.5 | 8.6 | 52 | NNW | 11 | 4.9 | ..... | ..... | ..... | ..... | ..... | 0.27 | 6.9 | Fair. | Prof. P. V. Veeder. |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 67.1 | 19.5 | 25 | N | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy.. | L. Castillo, A. E. |
| Guadalajara | 25.03 | 635.7 | 30.10 | 764.4 | 43.7 | 6.5 | 41 | SE | 0.9 | 0.4 | ..... | 0 | 1 | ..... | SE | 0 | 0 | Clear. | Prof. L. Perez. |
| Guanajuato | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 55.9 | 13.3 | 30 | SW | 0 9 | 0.4 | ..... | 2cs | 0 | SW | ..... | 0 | 0 | Hazy. | Prof. M. Leal. |
| Mexico | 23.04 | 585.2 | 29.96 | 761.0 | 63.1 | 17.3 | 40 | Calm | 0 | 0 | ..... | 5ck | 0 | ..... | ..... | 0 | 0 | Hazy. | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 57.7 | 14.3 | 20 | SW | 5.1 | 2.3 | ..... | 1c | 0 | SW | ..... | 0 | 0 | Clear. | M. V. de Leon, M. E. |
| Puebla | 23.32 | 592.2 | 30.03 | 762.6 | 52.3 | 11.3 | 56 | E | 2.2 | 1.0 | ..... | 2c | 4s | ..... | ..... | 0 | 0 | Cloudy | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 29.63 | 752.6 | 29.64 | 752.9 | 82.4 | 28.0 | 63 | S | 19.9 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy. | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D |
| Vera-Cruz | 29.63 | 752.5 | 29.65 | 753.2 | 78.8 | 26.0 | 65 | NW | 6.9 | 0.4 | ..... | 4c | 4s | ..... | ..... | 0 | 0 | Hazy. | Prof. J. Rossell, |
| Zacatecas | ..... | ..... | ..... | ..... | 53.6 | 12.0 | 48 | SW | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy. | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.27 | 591.2 | 30.01 | 762.3 | 57.4 | 14.1 | 37 | E | 0.7 | 0.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy. | P. Spina. [M.M. D. D |
| Morelia | 23.98 | 609.5 | ..... | ..... | 57.2 | 14.0 | 54 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy. | M. Tena, F. L. Param. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.60 | 751.9 | 29.60 | 751.9 | 61.9 | 16.6 | ..... | SSE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.693 | 17.6 | ..... | |
| Groningen | 29.74 | 755.4 | 29.80 | 756.8 | 61.0 | 16.1 | ..... | E | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 29.72 | 755.0 | 29.72 | 755.0 | 60.3 | 15.7 | ..... | E | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 29.64 | 752.9 | 29.64 | 752.9 | 64.2 | 17.9 | 60 | ENE | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.62 | 752.4 | 29.67 | 753.6 | 66.0 | 18.9 | 46 | E | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0.004 | 0.1 | Light cloudy | H. v d Brink. |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.11 | 764.7 | 30.16 | 766.1 | 54.7 | 12.6 | 40 | WNW | 3.8 | 1.7 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 30.06 | 763.4 | 30.10 | 764.4 | 47.7 | 8.7 | 56 | SSW | 18 | 8 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 30.04 | 763.0 | 30.19 | 766.7 | 55.8 | 13.2 | 47 | WSW | 0 | 0 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.79 | 756.6 | 29.83 | 757.7 | 36.0 | 2.2 | 89 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0.551 | 14.0 | Raining | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 30.02 | 762.5 | 30.21 | 767.4 | 59.2 | 15.1 | 83 | W | 4.9 | 2.2 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.83 | 732.2 | 29.85 | 758.3 | 61.0 | 16.1 | 52 | W | 16.8 | 7.5 | ..... | ..... | 10 | W | ..... | 0.087 | 2.2 | ..... | Dr. A. M. R. dos Santos |
| Funchal, (Madeira) | 30.02 | 762 4 | 30.10 | 764.6 | 69.8 | 21.0 | 74 | SW | 8.7 | 3.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.54 | 750.2 | 29.90 | 759.4 | 57.4 | 14.1 | 80 | WSW | 19.9 | 8.9 | ..... | ..... | 10 | ..... | ..... | 0.154 | 3.9 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 30.13 | 765.3 | 30.20 | 767.1 | 61.9 | 16.6 | 67 | NNE | 8.1 | 3.6 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.92 | 760.0 | 29.93 | 760.2 | 81.5 | 27.5 | ..... | S | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 2 | ..... | Blue sky | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Rio Douro, S. 25° 59′, E. 32° 35′ | ..... | ..... | 30.25 | 768.4 | 77.9 | 25.5 | ..... | SSE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 4 | SSE | Blue sky | J. T. d'Oliveria, Com'd't. |
| Sado, Porto Praya, Cape Verde Islands. | 29.96* | 761.0* | 29.97* | 761.3* | 83.8 | 28.8 | ..... | NNE | ..... | ..... | 3 | ..... | 1 | ..... | Calm | 2 | NNE | D. clouds | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, S. 9° 35′, E. 12° 02′ 5″ | 29.76 | 755.9 | 29.76 | 756.0 | ..... | ..... | ..... | SSW | ..... | ..... | 1 | ..... | 3 | ..... | SSW | 3 | ..... | D. clouds | F. Texeira da Silva, Com'd't. |
| Tejo, N. 22° 10′ E. 113° 32′ | ..... | ..... | 30.06 | 763.5 | 74.8 | 23.8 | ..... | NNE | ..... | ..... | 1 | ..... | 1c | ..... | NNE | 0 | ..... | ..... | F. J. Ferreina, dos Anas, Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.76 | 755.9 | 30.19 | 766.8 | 50.2 | 10.1 | 44 | ESE | 20 | 9 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.87 | 758.8 | 30.30 | 769.6 | 51.3 | 10.7 | 41 | Calm | 0 | 0 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Light clouds | Astronomical Obs. |
| Dorpat | 29.99 | 761.8 | 30.24 | 768.1 | 50.2 | 10.1 | 46 | W | 11 | 5 | ..... | ..... | 5ck | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 30.08 | 764.1 | 30.10 | 764.5 | 41.0 | 5.0 | 71 | WNW | 22 | 10 | ..... | ..... | 7s | ..... | ..... | ..... | ..... | Light clouds | Central Physical Obs. |
| Kuopio | 29.59 | 751.6 | 29.91 | 759.7 | 53.6 | 12.0 | 54 | W | 18 | 8 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... | Ch. Forsten. |
| Kieff | 29.65 | 753.0 | 30.30 | 769.7 | 40.3 | 4.6 | 44 | ENE | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 30.14 | 765.5 | 30.21 | 767.3 | 47.5 | 8.6 | 33 | NE | 31 | 14 | ..... | ..... | 5cs | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 30.05 | 763.2 | 30.07 | 763.7 | 50.4 | 10.2 | 60 | ENE | 13 | 6 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.65 | 753.2 | 30.22 | 767.5 | 43.2 | 6.2 | 42 | N | 9 | 4 | ..... | ..... | 3ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 30.00 | 762.0 | 30.21 | 767.3 | 41.5 | 5.3 | 32 | NNE | 13 | 6 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.73 | 755.2 | 29.75 | 755.7 | 29.8 | — 1.2 | 69 | WNW | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.55 | 725.1 | 29.95 | 760.7 | 61.3 | 16.3 | 59 | NW | 9 | 4 | ..... | ..... | 7n | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.21 | 767.3 | 30.13 | 765.2 | 43.3 | 6.3 | 28 | NNE | 16 | 7 | ..... | ..... | 2s | ..... | ..... | ..... | ..... | Light clouds | Sebastianof. |
| Krotkowo* | 29.54 | 750.3 | 30.04 | 762.9 | 27.9 | — 2.3 | 47 | N | 20 | 9 | ..... | ..... | 6k | ..... | ..... | ..... | ..... | Light clouds | Cand. Fatjanow. |
| Kasan | 29.72 | 754.8 | 30.00 | 761.9 | 30.9 | — 0.6 | 85 | W | 4 | 2 | ..... | ..... | 9k | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischei. |
| Ekaterinburg | 28.72 | 729.4 | 29.70 | 754.4 | 26.4 | — 3.1 | 82 | NNE | 11 | 5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.58 | 751.2 | 29.80 | 756.9 | 75.0 | 23.9 | 31 | WNW | 9 | 4 | ..... | ..... | 3k | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.33 | 719.6 | 29.98 | 761.4 | 72.3 | 22.4 | 43 | Calm | 0 | 0 | ..... | ..... | 2c | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.30 | 744.3 | 29.81 | 757.2 | 59.9 | 15.5 | 36 | Calm | 0 | 0 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.66 | 753.3 | 29.98 | 761.4 | 53.6 | 12.0 | 54 | SW | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 29.70 | 754.3 | 29.84 | 757.9 | 72.1 | 22.3 | 22 | NW | 7 | 3 | ..... | ..... | 9n | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.82 | 708.0 | 29.97 | 761.3 | 37.4 | 3.0 | 88 | NW | 9 | 4 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.78 | 756.3 | 29.87 | 758.7 | 40.5 | 4.7 | 67 | SW | 4 | 2 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 28.4 | — 2.0 | 70 | Calm | 0 | 0 | ..... | ..... | 4k | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.49 | 749.0 | 29.60 | 751.7 | 68.0 | 20 | 51 | S | 3.6 | 1.61 | ..... | 0 | 3 | ..... | ..... | 0 | 0 | ..... | Ar. tonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.56 | 750.9 | 29.62 | 752.3 | 64.4 | 18.0 | 61 | NW | 3.2 | 1.44 | ..... | 3 | 4 | W | ..... | 0.547 | 13.9 | Cloudy | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.68 | 677.7 | ..... | ..... | 55.6 | 13.1 | 78 | S | 16.8 | 7.50 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.47 | 697.7 | 29.65 | 753.0 | 62.6 | 17.0 | 48 | SW | 34.3 | 15.34 | ..... | 0 | 4 | ..... | ..... | Inap. | Inap. | Squally | The Staff. |
| Murcia, Met. Obs'y | 29.53 | 750.1 | 29.67 | 753.7 | 84.6 | 29.2 | 37 | WNW | 2.1 | 0.94 | ..... | 2 | 7 | E | ..... | 0 | 0 | Cloudy | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.65 | 727.6 | 29.64 | 750.2 | 53.1 | 11.7 | 89 | SW | 15.2 | 6.81 | ..... | ..... | 10 | ..... | ..... | 0.969 | 24.6 | Raining | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.93 | 760.2 | 30.00 | 761.9 | 76.4 | 24.7 | 71 | SE | 12.8 | 5.7 | ..... | c | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J. |
| San Fernando, Naval Obs'y | 29.87 | 758.6 | 29.97 | 761.3 | 64.9 | 18.3 | 75 | SSW | 19.9 | 8.9 | ..... | 0 | 10 | ..... | W | 0.007 | 0.2 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W.I. | 29.87 | 758.7 | 29.96 | 761.0 | 79.9 | 26.6 | 76 | NE | 6.7 | 3.00 | ..... | 5cs | 3k | NE | NE | 0.030 | 0.75 | Cloudy ..... | Leonardo de Tejeda, Chief of Engineers. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.80 | 757.0 | 29.84 | 758.0 | 50.0 | 10.0 | ..... | NE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.00 | 761.9 | 30.05 | 763.2 | 58.6 | 14.8 | 67 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.05 | 763 3 | 30.10 | 764.6 | 54.3 | 12.4 | 45 | SW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.98 | 761.0 | 30.16 | 766.1 | 55.6 | 13.1 | 36 | WSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 30.16 | 766.1 | 30.22 | 767.6 | 43.2 | 6.2 | 29 | NNW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 30.07 | 763.7 | 30.14 | 765.6 | 59.9 | 15.5 | 41 | SW | 10.1 | 4.5 | ..... | ..... | 1 | ..... | W | 0 | 0 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.26 | 717.9 | 29.70 | 754.3 | 51.4 | 10.8 | 78 | NNE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining ..... | The Observatory. |
| Zurich | 28.05 | 712.5 | 29.68 | 753.9 | 56.5 | 13.6 | 76 | NW | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy..... | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —6.5 mm.; Thermometer, —2.3 cent.; Relative Humidity, +25 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.71 | 754.6 | 53.8 | 12.1 | 95 | N | 15 | 6.5 | ..... | ..... | 10 | ..... | ..... | 1.150 | 29.2 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stéfanidès. |
| Valona | ..... | ..... | 29.76 | 755.9 | 63.1 | 17.3 | ..... | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | Slightly cl'dy | A. Bertrand. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.55 | 750.6 | 29.66 | 753.4 | 84.9 | 29.4 | 39 | W | ..... | ..... | 1 | ..... | 3ck | ..... | ..... | 0 | 0 | D. clouds..... | Prof. C. V. A. Van Dyck |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.16 | 766.1 | 30.23 | 767.8 | 32.2 | 0.1 | 85 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | ..... | ..... | Clear..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.97 | 753.6 | 29.97 | 761.2 | 47 | 8.3 | ..... | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | NE | 0.02 | 0.5 | Cloudy..... | W. R. Bigg. |
| *Chatham, N B | 30.17 | 766.3 | 30.23 | 767.8 | 36 | 2.2 | 55 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | G. A. Blair. |
| Charlottetown, P. E. Island. | 30.16 | 766.1 | 30.20 | 767.1 | 34 | 1.1 | 65 | N | 8 | 3.6 | ..... | 0 | 5ks | ..... | N | 0 | 0 | Fair..... | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.77 | 756.1 | 29.97 | 761.2 | 43.0 | 6.6 | 69 | E | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0 | 0 | Overcast..... | James Smith, M. A. |
| Dalhousie, N. B | 30.21 | 767.3 | 30.24 | 768.1 | 33 | 0.6 | 77 | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | Clear..... | H. A. Johnson. |
| Esquimault, B. C | 30.06 | 763.5 | 30.11 | 764.8 | 44.3 | 6.8 | 100 | Calm | 0 | 0 | ..... | 10cs | 0 | ..... | ..... | 0 | 0 | Overcast..... | W. H. Bevis. |
| *Father Point, Quebec | 30.24 | 768.1 | 30.27 | 768.8 | 34 | 1.1 | 49 | E | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | J. McWilliams. |
| Fredericton, N. B | 30.19 | 766.8 | 30.26 | 768.6 | 40.1 | 4.5 | 44 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Prof. Harrison. |
| *Fort Garry Manitoba | 28.65 | 727.7 | 29.46 | 748.3 | 42 | 5.6 | 100 | NE | 10 | 4.5 | ..... | ..... | 10n | ..... | ..... | 0.770 | 19.56 | Light rain... | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.72 | 729.5 | 29.82 | 757.4 | 48 | 8.9 | 100 | E | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0.13 | 3.3 | Cloudy..... | James Grant. |
| *Halifax, N. S | 30.03 | 762.7 | 30.17 | 766.3 | 38 | 3.3 | 56 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | F. Allison, M. A. |
| Hamilton, Ontario | 29.54 | 750.3 | 29.92 | 760.0 | 46.2 | 7.8 | 95 | N | ..... | ..... | 1 | 10cs | ..... | ..... | ..... | 0 | 0 | Cloudy..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | 29.78 | 756.4 | 29.81 | 757.2 | 34 | 1.1 | 75 | NW | ..... | ..... | ..... | 4k | 3ks | NW | ..... | 0 | 0 | Cloudy..... | E. Weedon. |
| *Kingston, Ontario | 29.62 | 752.3 | 29.96 | 761.0 | 49 | 9.4 | 88 | NE | 5 | 2.2 | ..... | ..... | 10ks | ..... | Calm | 0.13 | 3.3 | Cloudy..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.10 | 764.5 | 30.14 | 765.5 | 32.0 | 0.6 | ..... | NW | 11 | 4.9 | ..... | 7k | 0 | NW | ..... | 0 | 0 | Fair..... | C. H. Rigby. |
| *Montreal, Quebec | 29.86 | 758.4 | 30.06 | 763.5 | 44 | 6.7 | 84 | NE | 10 | 4.5 | ..... | 8k | 2s | ..... | ..... | 0 | 0 | Cloudy,..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.20 | 741.7 | 29.89 | 759.2 | 50 | 10.0 | 72 | E | 14 | 6.3 | ..... | 2k | 5ks | SE | SE | Inap. | Inap. | Fair..... | Rev. R. Mosley. |
| Peterboro, Ontario | 29.18 | 739.9 | 29.88 | 758.9 | 47.7 | 8.7 | 92 | Calm | ..... | ..... | ..... | ..... | 10s | ..... | ..... | 0.43 | 10.9 | Overcast..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.17 | 740.9 | 29.87 | 758.7 | 46 | 7.8 | 100 | NE | 13 | 5.8 | ..... | ..... | Fog | ..... | NE | 1.03 | 26.2 | Foggy ..... | H. Morgan. |
| Port Hastings, N. S | 30.17 | 766.3 | 30.22 | 767.6 | 34.6 | 1.4 | ..... | W | 2 | 0.9 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine..... | Peter Grant. |
| Port Stanley, Ontario | 29.20 | 741.7 | 29.85 | 758.2 | 50 | 10.0 | 98 | E | 10 | 4.5 | ..... | ..... | Fog | ..... | ..... | 0.92 | 23.4 | Foggy ..... | M. Payne. |
| *Quebec, Quebec | 29.87 | 758.7 | 30.20 | 767.1 | 38 | 3.3 | 81 | NE | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.53 | 750.0 | 29.99 | 761.7 | 43 | 6.1 | 62 | Calm | 0 | 0 | ..... | 2ck | 0 | SE | ..... | 0 | 0 | Fair..... | W. H. McIntyre. |
| St. Andrews, N. B | 30.14 | 765.5 | 30.19 | 766.8 | 42 | 5.6 | 50 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Dr. Gove. |
| St. John, N. B | 30.06 | 763.5 | 30.23 | 767.8 | 38 | 3.3 | 67 | N | 1 | 0.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear..... | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.12 | 739.6 | 29.83 | 757.7 | 49 | 9.4 | 85 | SE | 6 | 2.7 | ..... | ..... | 10ks | ..... | S | 0.53 | 13.5 | Cloudy..... | K. Stewart. |
| Stayner, Ontario | 29.09 | 738.9 | 29.88 | 758.9 | 46 | 7.8 | 96 | SE | 5 | 2.2 | ..... | ..... | 10n | ..... | SE | 0.58 | 14.7 | Light rain.... | R. J. Cole. |
| Stratford, Ontario | 28.56 | 725.4 | 29.84 | 757.9 | 46.0 | 7.8 | 98 | SE | 7 | 3.1 | ..... | ..... | 10 | ..... | ..... | 1.146 | 29.11 | Foggy ..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.11 | 764.8 | 30.14 | 765.5 | 35 | 1.7 | 53 | NW | 13 | 5.8 | ..... | 2k | 2ks | NW | NW | 0 | 0 | Fair..... | T. C. Hill. |
| *Toronto, Ontario | 29.52 | 749.8 | 29.91 | 759.7 | 47 | 8.3 | 97 | E | 7 | 3.1 | ..... | ..... | Fog | ..... | Calm | 0.64 | 16.3 | Light rain... | Magnetic Observatory |
| Windsor, N. S | 30.11 | 764.8 | 30.20 | 767.1 | 35.0 | 1.7 | 80 | E | 2 | 0.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear..... | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 36.0 | 2.2 | 90 | NE | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0.10 | 2.5 | Cloudy..... | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,017 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.77 | 756.1 | 30.00 | 762.0 | 49 | 9.4 | 85 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.14 | 3.6 | Cloudy | |
| Alpena, Michigan | 29.12 | 739.6 | 29.76 | 755.9 | 43 | 6.1 | 100 | SE | 6 | 2.7 | ..... | ..... | Fog | ..... | Calm | 0.15 | 3.8 | Foggy | |
| Atlantic City, New Jersey | 29.92 | 760.0 | 29.94 | 760.5 | 56 | 13.3 | 87 | SE | 4 | 1.8 | ..... | 10k | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Augusta, Georgia | 29.86 | 758.4 | 30.04 | 763.0 | 68 | 20.0 | 92 | SE | 4 | 1.8 | ..... | 2cs | 8s | Calm | SE | 0 | 0 | Cloudy | |
| Baltimore, Maryland | 29.91 | 759.7 | 29.96 | 761.0 | 60 | 15.6 | 82 | NE | 4 | 1.8 | ..... | Haze | 8s | Calm | SW | 0.05 | 1.3 | Cloudy | |
| Barnegat, New Jersey | 29.97 | 761.2 | 29.99 | 761.7 | 54 | 12.2 | 93 | N | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Bismarck, Dakota | 27.77 | 705.4 | 29.62 | 752.3 | 42 | 5.6 | 74 | NW | 10 | 4.5 | ..... | 10cs | 0 | NW | ..... | 0.06 | 1.5 | Cloudy | |
| Boise City, Idaho | 27.18 | 690.4 | 30.06 | 763.5 | 37 | 2.8 | 80 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boston, Massachusetts | 29.96 | 761.0 | 30.12 | 765.0 | 44.5 | 6.9 | 97 | E | 6 | 2.7 | ..... | ..... | 10n;fg | ..... | E | 0.26 | 6.6 | Light rain | |
| Brackettville, Texas | 28.64 | 727.4 | 29.66 | 753.4 | 55 | 12.8 | 50 | N | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Clear | |
| Breckenridge, Minnesota | 28.47 | 723.1 | 29.44 | 747.8 | 42 | 5.6 | 100 | W | 10 | 4.5 | ..... | ..... | Fog | ..... | Calm | 0.06 | 1.5 | Foggy | |
| Brownsville, Texas | 29.62 | 752.3 | 29.68 | 753.9 | 78 | 25.6 | 82 | NE | 16 | 7.2 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Buffalo, New York | 29.15 | 740.4 | 29.84 | 757.9 | 50 | 10.0 | 100 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 1.03 | 26.2 | Cloudy | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 46 | 7.8 | 47 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.76 | 755.9 | 30.02 | 762.5 | 49 | 9.4 | 71 | S | 1 | 0.4 | ..... | ..... | 10n | ..... | S | Inap. | Inap. | Light rain | |
| Cairo, Illinois | 29.22 | 742.2 | 29.59 | 751.6 | 65 | 18.3 | 89 | W | 5 | 2.2 | ..... | ..... | 10s | ..... | S | 0.71 | 18.0 | Cloudy | |
| Camp Grant, Arizona | 25.19 | 639.8 | 29.99 | 761.7 | 40 | 4.4 | 92 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear | |
| Camp Verde, Arizona | 26.84 | 681.7 | 30.33 | 770.4 | 41 | 5.0 | 56 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.45 | 697.2 | 30.02 | 762.5 | 33 | 0.6 | 79 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.12 | 765.0 | 30.13 | 765.3 | 68 | 20.0 | 100 | S | 9 | 4.0 | ..... | 8k | 0 | SW | ..... | 0 | 0 | Fair | |
| Cape Henry, Virginia | 29.97 | 761.2 | 29.99 | 761.7 | 73 | 22.8 | 81 | SW | 16 | 7.2 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Cape Lookout, N. Carolina | 30.10 | 764.5 | 30.12 | 765.0 | 69 | 20.6 | 95 | SW | 9 | 4.0 | ..... | 2cs | 2ks | SW | SW | 0 | 0 | Fair | |
| Cape May, New Jersey | 29.95 | 760.7 | 29.98 | 761.5 | 60 | 15.6 | 82 | SE | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 30.05 | 763.3 | 30.12 | 765.0 | 74 | 23.3 | 81 | SW | 11 | 4.9 | ..... | 2c | 0 | W | ..... | 0 | 0 | Fair | |
| Cheyenne, Wyoming | 23.84 | 605.5 | 29.78 | 756.4 | 35 | 1.7 | 61 | NW | 12 | 5.4 | ..... | 2c | 5ks | NW | NW | 0 | 0 | Fair | |
| Chicago, Illinois | 28.82 | 732.0 | 29.48 | 748.8 | 61 | 16.1 | 88 | NE | 4 | 1.8 | ..... | ..... | 10n | ..... | NE | 0.66 | 16.8 | Light rain | |
| Cincinnati Ohio | 29.04 | 737.6 | 29.66 | 753.4 | 70 | 21.1 | 70 | SE | 11 | 4.9 | ..... | ..... | 10ks | ..... | S | 0.23 | 5.8 | Threatening | |
| Cleveland, Ohio | 29.05 | 738.1 | 29.76 | 755.9 | 64 | 17.8 | 83 | SE | 5 | 2.2 | ..... | 4k;cs | 0 | S; W | ..... ..... | 0.51 | 13.0 | Fair | |
| Concho, Texas | 27.81 | 706.4 | 29.45 | 748.0 | 54 | 12.2 | 37 | NW | ..... | ..... | 4 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.18 | 741.2 | 29.64 | 752.8 | 60 | 15.6 | 88 | N | 5 | 2.2 | ..... | ..... | 10s | ..... | SW | 0.38 | 9.7 | Cloudy | |
| Davenport, Iowa | 28.84 | 732.5 | 29.44 | 747.8 | 59 | 15.0 | 88 | NW | 5 | 2.2 | ..... | ..... | 10s | ..... | NW | 0.51 | 13.0 | Cloudy | |
| Deadwood, Dakota | 25.19 | 639.8 | ..... | ..... | 38 | 3.3 | 72 | S | 1 | 0.4 | ..... | 5k | 0 | NW | ..... | 0.50 | 12.7 | Clearing | |
| Denison, Texas | 28.83 | 732.3 | 29.60 | 751.8 | 62 | 16.7 | 83 | NW | 3 | 1.3 | ..... | ..... | 10s | ..... | SW | 1.15 | 29.2 | Cloudy | |
| Denver, Colorado | 24.60 | 624.8 | 29.82 | 757.4 | 36 | 2.2 | 45 | SE | 8 | 3.6 | ..... | 5c | 0 | N | ..... | 0 | 0 | Fair | |
| Detroit, Michigan | 29.06 | 738.1 | 29.71 | 754.6 | 55 | 12.8 | 93 | E | 4 | 1.8 | ..... | ..... | 10s;fg | ..... | Calm | 0.99 | 25.1 | Cloudy | |
| Dodge City, Kansas | 27.11 | 688.6 | 29.35 | 745.5 | 47 | 8.3 | 55 | N | 16 | 7.2 | ..... | 2cs | 8s | Calm | SW | 0 | 0 | Cloudy | |
| Dubuque, Iowa | 28.77 | 730.7 | 29.43 | 747.5 | 60 | 15.6 | 88 | SW | 5 | 2.2 | ..... | ..... | 10n | ..... | W | 0.26 | 6.6 | Light rain | |
| Duluth, Minnesota | 28.84 | 732.5 | 29.51 | 749.5 | 42 | 5.6 | 91 | NE | 2 | 0.9 | ..... | ..... | 10n | ..... | Calm | 0.13 | 3.3 | Light rain | |
| Eagle Pass, Texas | 29.05 | 737.9 | 29.77 | 756.1 | 60 | 15.6 | 44 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 30.11 | 764.8 | 30.18 | 766.6 | 43 | 6.1 | 59 | NE | 3 | 1.3 | ..... | 5c | Haze | Calm | Calm | 0 | 0 | Fair | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 64 | 17.8 | 38 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.11 | 739.4 | 29.81 | 757.2 | 53 | 11.7 | 86 | Calm | 0 | 0 | ..... | 5k | 2s | SW | Calm | 0.63 | 16.0 | Cloudy | |
| Escanaba, Michigan | 29.01 | 736.8 | 29.66 | 753.4 | 45 | 7.2 | 92 | E | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.09 | 2.3 | Light rain | |
| Florence, Arizona | 28.35 | 720.3 | 29.96 | 761.0 | 46 | 7.8 | 84 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | 24.05 | 610.9 | 30.05 | 763.3 | 34 | 1.1 | 61 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.07 | 1.8 | Clear | |
| Fort Craig, New Mexico | 25.41 | 645.4 | 29.47 | 748.5 | 44 | 6.7 | 45 | W | 11 | 4.9 | ..... | 0 | 0 | ..... | ..... | 0.09 | 2.3 | Clear | |
| Fort Davis, Texas | 25.05 | 636.5 | 30.02 | 762.5 | 53 | 11.7 | 62 | W | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.09 | 738.9 | 29.60 | 751.8 | 62 | 16.7 | 94 | S | 5 | 2.2 | ..... | ..... | 10s | ..... | S | 1.27 | 32.3 | Cloudy | |
| Fort Griffin, Texas | 28.40 | 721.3 | 29.64 | 752.8 | 55 | 12.8 | 39 | W | 12 | 5.4 | ..... | 0 | 0 | ..... ..... | ..... | Inap. | Inap. | Clear | |
| Fort St. Michael, Alaska | 29.78 | 756.4 | 29.81 | 757.2 | 18 | —10.6 | 81 | S | 11 | 4.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Fort Sill, Indian Territory | 28.37 | 720.6 | 29.42 | 747.3 | 64 | 17.8 | 53 | NE | 4 | 1.8 | ..... | 0 | 5s | ..... ..... | SE | 0.46 | 11.7 | Fair | |
| Galveston, Texas | 29.59 | 751.6 | 29.63 | 752.6 | 74 | 23.3 | 95 | SW | 8 | 3.6 | ..... | ..... | 10ks | ..... | SW | 0.02 | 0.5 | Cloudy | |
| Grand Haven, Michigan | 28.94 | 735.1 | 29.57 | 751.1 | 55 | 12.8 | 100 | SE | 14 | 6.3 | ..... | ..... | 10n | ..... | Calm | 0.22 | 5.6 | Light rain | |
| Indianapolis, Indiana | 28.70 | 729.0 | 29.52 | 749.8 | 67 | 19.4 | 84 | SE | 13 | 5.8 | ..... | ..... | 10n | ..... | SW | 2.09 | 53.1 | Light rain | |
| Indianola, Texas | 29.68 | 753.9 | 29.70 | 754.4 | 69 | 20.6 | 75 | N | 38 | 17.0 | ..... | 10k | 0 | W | ..... | 0 | 0 | Cloudy | |
| Jacksboro, Texas | 28.52 | 724.4 | 29.61 | 752.1 | 62 | 16.7 | 67 | SW | 8 | 3.6 | ..... | 4ck | 1s | SW | S | Inap. | Inap. | Cloudy | |
| Jacksonville, Florida | 30.01 | 762.2 | 30.04 | 763.0 | 75 | 23.9 | 77 | SE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | |
| Keokuk, Iowa | 28.84 | 732.5 | 29.42 | 747.3 | 62 | 16.7 | 77 | NW | 4 | 1.8 | ..... | 0 | 4s | ..... | Calm | 0.56 | 14.2 | Clear | |
| Key West, Florida | 29.96 | 761.0 | 29.99 | 761.7 | 79 | 26.1 | 70 | SE | 19 | 8.5 | ..... | 0 | 2ks;hz | ..... | SE;Calm | 0 | 0 | Hazy | |
| Kittyhawk, North Carolina | 30.06 | 763.5 | 30.08 | 764.0 | 71 | 21.7 | 95 | SW | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Knoxville, Tennessee | 28.89 | 733.8 | 29.84 | 757.9 | 71 | 21.7 | 58 | SW | 6 | 2.7 | ..... | 10cs | 0 | SW | ..... | 0 | 0 | Cloudy | |
| La Crosse, Wisconsin | 28.73 | 729.7 | 29.43 | 747.5 | 59 | 15.0 | 76 | W | 3 | 1.3 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| La Mesilla, New Mexico | 26.02 | 660.9 | 30.17 | 766.3 | 35 | 1.7 | 52 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.34 | 745.2 | 29.67 | 753.6 | 66 | 18.9 | 59 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 28.70 | 729.0 | 29.51 | 749.5 | 55 | 12.8 | 62 | N | 11 | 4.9 | ..... | 8cs | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Los Angeles, California | 29.71 | 754.6 | 30.05 | 763.3 | 48 | 8.9 | 78 | N | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.05 | 737.9 | 29.57 | 751.1 | 72 | 22.2 | 62 | SE | 15 | 6.7 | ..... | ..... | 10s | ..... | S | Inap. | Inap. | Cloudy | |
| Lynchburg, Virginia | 29.29 | 744.0 | 29.94 | 760.5 | 73 | 22.8 | 63 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 28.90 | 734.0 | 29.58 | 751.3 | 49 | 9.4 | 78 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Mason, Texas | 28.10 | 713.7 | 29.80 | 756.9 | 58 | 14.4 | 32 | W | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0.41 | 10.4 | Clear | |
| Memphis, Tennessee | 29.37 | 746.0 | 29.68 | 753.9 | 62 | 16.7 | 94 | SE | 12 | 5.4 | ..... | ..... | 10n | ..... | SE | 2.85 | 72.4 | Light rain | |
| Milwaukee, Wisconsin | 28.79 | 731.3 | 29.50 | 749.3 | 50 | 10.0 | 100 | E | 10 | 4.5 | ..... | ..... | 10n;fg | ..... | ..... | 1.29 | 32.8 | Light rain | |
| Mobile, Alabama | 29.80 | 756.9 | 29.85 | 758.2 | 75.5 | 24.2 | 84 | S | 12 | 5.4 | ..... | ..... | 10s | ..... | SW | Inap. | Inap. | Cloudy | |
| Montgomery, Alabama | 29.68 | 753.9 | 29.91 | 759.7 | 69.5 | 20.8 | 84 | E | 7 | 3.1 | ..... | ..... | 10s | ..... | SW | Inap | Inap. | Threatening | |
| Morgantown, West Virginia | 28.82 | 732.0 | 29.82 | 757.4 | 68 | 20.0 | 74 | Calm | 0 | 0 | ..... | 8c | Sm'e | W | ..... | 0.03 | 0.8 | Fair | |
| Mt. Washington, N. H. | 23.82 | 605.0 | 30.18 | 766.6 | 27 | — 2.8 | 88 | S | 6 | 2.7 | ..... | 10s | 0 | S | ..... | 0 | 0 | Cloudy | |
| Nashville, Tennessee | 29.22 | 742.2 | 29.73 | 755.1 | 73 | 22.8 | 72 | SE | 11 | 4.9 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| New Haven, Connecticut | 29.93 | 760.2 | 30.05 | 763.3 | 50 | 10.0 | 72 | NE | 10 | 4.5 | ..... | ..... | 10s | ..... | ..... | 0.17 | 4.3 | Cloudy | |
| New London, Connecticut | 30.00 | 762.0 | 30.05 | 763.3 | 49 | 9.4 | 85 | NE | 7 | 3.1 | ..... | ..... | 10s | ..... | SE | 0.10 | 2.5 | Cloudy | |
| New Orleans, Louisiana | 29.68 | 753.9 | 29.73 | 755.1 | 76 | 24.4 | 82 | S | 8 | 3.6 | ..... | 2k | 8ks | SE | S | Inap. | Inap. | Cloudy | |
| Newport, Rhode Island | 30.02 | 762.5 | 30.06 | 763.5 | 48 | 8.9 | 93 | NE | 7 | 3.1 | ..... | ..... | 10s | ..... | SE | 0.17 | 4.3 | Threatening | |
| New York, New York | 29.86 | 758.4 | 30.04 | 763.0 | 52 | 11.1 | 86 | NE | 9 | 4.0 | ..... | ..... | Fog | ..... | Calm | 0.22 | 5.6 | Foggy | |
| Norfolk, Virginia | 29.98 | 761.5 | 30.04 | 763.0 | 72 | 22.2 | 80 | SW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| North Platte, Nebraska | 26.84 | 681.7 | 29.42 | 747.3 | 36 | 2.2 | 80 | W | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 30.08 | 764.0 | 30.12 | 765.0 | 36 | 2.2 | 90 | S | 1 | 0.4 | ..... | 0 | 4s | ..... | Calm | 0 | 0 | Fair | |
| Omaha, Nebraska | 28.50 | 723.9 | 29.54 | 750.3 | 49 | 9.4 | 71 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Oswego, New York | 29.60 | 751.8 | 29.92 | 760.0 | 56 | 13.3 | 81 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.04 | 1.0 | Cloudy | |
| Pembina, Dakota | 28.61 | 726.7 | 29.43 | 747.5 | 42 | 5.6 | 100 | NW | 13 | 5.8 | ..... | ..... | 10n | ..... | Calm | 1.05 | 26.7 | Light rain | |
| Philadelphia, Pennsylvania | 29.96 | 761.0 | 30.01 | 762.2 | 52 | 11.1 | 100 | NE | 3 | 1.3 | ..... | ..... | 10s;fg | ..... | Calm | 0.13 | 3.3 | Foggy | |
| Phœnix, Arizona | 28.86 | 733.0 | 30.72 | 780.3 | 47 | 8.3 | 48 | E | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 6 | 0 | Clear | |
| Pike's Peak, Colorado | 17.57 | 446.3 | 29.78 | 756.4 | 8 | —13.3 | 100 | N | 18 | 8.0 | ..... | ..... | 10n | ..... | Calm | 0.04 | 1.0 | Light snow | |
| Pioche, Nevada | 24.04 | 610.6 | 29.81 | 757.2 | 32 | 0.0 | 90 | SW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Pittsburg, Pennsylvania | 29.02 | 737.1 | 29.50 | 756.9 | 65 | 18.3 | 84 | SE | 4 | 1.8 | ..... | 10c | 0 | Calm | ..... | 0.62 | 15.7 | Cloudy | |
| Port Huron, Michigan | 29.08 | 738.6 | 29.73 | 755.1 | 52 | 11.1 | 100 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.37 | 9.4 | Cloudy | |
| Portland, Maine | 30.09 | 764.3 | 30.14 | 765.5 | 49 | 9.4 | 64 | NE | 9 | 4.0 | ..... | 5k | 5n | Calm | Calm | Inap. | Inap. | Light rain | |
| Portland, Oregon | 30.10 | 764.5 | 30.21 | 767.3 | 39 | 3.9 | 100 | N | 4 | 1.8 | ..... | ..... | Fog | ..... | N | Inap. | Inap. | Foggy | |
| Prescott, Arizona | 24.75 | 628.6 | 30.11 | 764.8 | 33 | 0.6 | 79 | SW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Punta Rassa, Florida | 30.01 | 762.2 | 30.03 | 762.7 | 75 | 23.9 | 77 | SE | 22 | 9.8 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Red Bluff, California | 29.70 | 754.4 | 30.06 | 763.5 | 54 | 12.2 | 87 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Rochester, New York | 29.26 | 743.2 | 29.86 | 758.4 | 54 | 12.2 | 93 | W | 1 | 0.4 | ..... | 10ck | Fog | W | Calm | 0.07 | 1.8 | Cloudy | |
| Roseburg, Oregon | 29.60 | 751.8 | 30.19 | 766.8 | 36.5 | 2.5 | 95 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sacramento, California | 30.00 | 762.0 | 30.08 | 764.0 | 50 | 10.0 | 86 | S | 6 | 2.7 | ..... | 1c | 0 | N | ..... | 0 | 0 | Clear. | |
| St. Louis, Missouri | 28.95 | 735.3 | 29.50 | 749.3 | 61 | 16.1 | 88 | SW | 13 | 5.8 | ..... | ..... | 10s | ..... | W | 3.97 | 100.8 | Cloudy | |
| St. Marks, Florida | 29.99 | 761.7 | 30.00 | 762.0 | 74 | 23.3 | 81 | S | 20 | 8.9 | ..... | 0 | 8s | ..... | S | 0 | 0 | Fair | |
| St. Paul, Minnesota | 28.64 | 727.4 | 29.43 | 747.5 | 52 | 11.1 | 72 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Salt Lake City, Utah | 25.60 | 650.2 | 29.93 | 760.2 | 44 | 6.7 | 84 | NE | 2 | 0.9 | ..... | ..... | 10s | ..... | W | 0.13 | 3.3 | Cloudy | |
| San Antonio, Texas | 29.05 | 737.9 | 29.61 | 752.1 | 65 | 18.3 | 40 | NW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0.14 | 3.6 | Clear | |
| San Diego, California | 30.02 | 762.5 | 30.09 | 764.3 | 48 | 8.9 | 93 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandusky, Ohio | 29.69 | 738.9 | 29.73 | 755.1 | 60 | 15.6 | 88 | SE | 9 | 4.0 | ..... | 9k | 0 | S | ..... | 1.01 | 25.7 | Cloudy | |
| Sandy Hook, New Jersey | 29.98 | 761.5 | 30.01 | 762.2 | 52 | 11.1 | 100 | NE | 9 | 4.0 | ..... | ..... | 10ks | ..... | NE | 0.15 | 3.8 | Cloudy | |
| San Francisco, California | 30.04 | 763.0 | 30.11 | 764.8 | 52 | 11.1 | 76 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Santa Fé, New Mexico | 23.11 | 587.0 | 29.65 | 753.1 | 27 | — 2.8 | 53 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Savannah, Georgia | 29.97 | 761.2 | 30.06 | 763.5 | 78 | 25.6 | 69 | S | 10 | 4.5 | ..... | 2cs;k | 0 | SW;S | ..... | 0 | 0 | Fair | |
| Shreveport, Louisiana | 29.40 | 746.7 | 29.60 | 751.8 | 64 | 17.8 | 78 | N | 12 | 5.4 | ..... | 8cs | 0 | S | ..... | 0.45 | 11.4 | Fair | |
| Smithville, North Carolina | 30.08 | 764.0 | 30.11 | 764.8 | 70 | 21.1 | 95 | S | 10 | 4.5 | ..... | Haze | 2ks | Calm | S | 0 | 0 | Fair | |
| Springfield, Massachusetts | 29.89 | 759.2 | 30.02 | 762.5 | 49 | 9.4 | 85 | NE | 3 | 1.3 | ..... | ..... | 10n | ..... | NE | 0.15 | 3.8 | Light rain | |
| Stockton, Texas | 26.80 | 680.7 | 29.80 | 756.9 | 54 | 12.2 | 43 | W | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 30.08 | 764.0 | 30.13 | 765.3 | 48 | 8.9 | 93 | E | 4 | 1.8 | ..... | ..... | 10n | ..... | S | 0.13 | 3.3 | Light rain | |
| Toledo, Ohio | 29.03 | 737.3 | 29.68 | 753.9 | 59 | 15.0 | 94 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | SE | 1.05 | 26.7 | Cloudy | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 50 | 10.0 | 71 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Tybee Island, Georgia | 30.04 | 763.0 | 30.06 | 763.5 | 74 | 23.3 | 81 | S | 8 | 3.6 | ..... | 2k | Haze | SW | Calm | 0 | 0 | Fair | |
| Umatilla, Oregon | 29.79 | 756.7 | ..... | ..... | 40 | 4.4 | 73 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Vicksburg, Mississippi | 29.44 | 747.8 | 29.69 | 754.1 | 74 | 23.3 | 81 | S | 8 | 3.6 | ..... | ..... | 10s | ..... | SW | 0.35 | 8.9 | Cloudy | |
| Virginia City, Montana | 24.15 | 613.4 | 29.63 | 752.6 | 35 | 1.7 | 61 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.08 | 2.0 | Clear | |
| Visalia, California | 29.71 | 754.6 | 30.08 | 764.0 | 53 | 11.7 | 86 | Calm | 0 | 0 | ..... | 5ck | 0 | Calm | ..... | 0 | 0 | Fair | |
| Washington, D. C. | 29.86 | 758.4 | 29.98 | 761.5 | 61 | 16.1 | 82 | NE | 4 | 1.8 | ..... | 5ck | Fog | SW | SE | Inap | Inap. | Fair | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 39 | 3.9 | 55 | SE | ..... | ..... | 1 | 5ck | 0 | Calm | ..... | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 30.02 | 762.5 | 30.10 | 764.5 | 71 | 21.7 | 90 | S | 8 | 3.6 | ..... | 5k | 0 | SW | ..... | 0 | 0 | Fair | |
| Winnemucca, Nevada | 25.67 | 652.0 | 30.03 | 762.7 | 29 | — 1.7 | 78 | SW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap | Clear. | |
| Wood's Holl, Mass | 30.02 | 762.5 | 30.07 | 763.8 | 48 | 8.9 | 92 | E | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0.18 | 4.6 | Cloudy | |
| Yankton, Dakota | 28.36 | 720.3 | 29.62 | 752.3 | 45 | 7.2 | 80 | W | 9 | 4.0 | ..... | 5ks | 0 | NW | ..... | 0 | 0 | Fair | |
| Yuma, Arizona | 29.87 | 758.7 | 30.04 | 763.0 | 50 | 10.0 | 77 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| York Factory, B. A. | 29.61 | 752.1 | 29.67 | 753.6 | 29.0 | — 1.7 | 94 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 29.93 | 760.2 | 29.95 | 760.7 | 76 | 24.4 | 69 | E | 7.2 | 3.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.14 | 765.5 | 30.15 | 765.8 | 79 | 26.1 | 86 | Calm | 0 | 0 | ..... | 8c | 2s | N | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.87 | 758.7 | 29.95 | 760.7 | 80 | 26.7 | ..... | NE | 5 | 2.2 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | 29.96 | 761.0 | 29.96 | 761.0 | 81 | 27.2 | 91 | E | ..... | ..... | 2 | ..... | 10n | ..... | ..... | 2.300 | 58.42 | Rainy | C. J. Hering. |
| Batavia, Dutch Guiana, S. A. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.22 | 640.6 | ..... | ..... | 68.0 | 20.0 | 88 | Calm | ..... | ..... | 0 | ..... | 10ks | ..... | ..... | 0.09 | 2.3 | ..... | Thomas Herran. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Camp [illegible], 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m., Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.08 | 764.0 | 52 | 11.1 | 50 | 10.0 | 86 | SW | 15 | 6.7 | .... | ..... | 8 | ..... | S | 0 | 0 | ..... | ..... | Cloudy..... | |
| Navy Yard, Pensacola, Fla. | 30.02 | 762.5 | 73 | 22.8 | 72 | 22.2 | 95 | NE | 10 | 4.5 | .... | ..... | 8 | ..... | ENE | 0 | 0 | ..... | ..... | Cloudy..... | |
| Navy Yard, Portsmouth, N.H | 30.12 | 765.0 | 72 | 22.2 | 48 | 8.9 | 56 | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Cloudy..... | |
| Naval Hospital, Yokohama, Japan | 29.74* | 755.4* | 56.4 | 13.6 | 48.5 | 9.2 | 47 | NNE | ..... | ..... | 5 | ..... | 2ks | ..... | W | 0.58 | 14.7 | ..... | ..... | Fair ..... | |
| Adams. Panama | 29.97 | 761.2 | 81 | 27.2 | 80 | 26.7 | 91 | NNW | ..... | ..... | 1 | ..... | 8 | ..... | NNW | ..... | ..... | Smooth | ..... | Fair ..... | |
| Alliance, Villefranche, France | 29.73‡ | 755.1‡ | ..... | ..... | 68 | 20.0 | 65 | SW | ..... | ..... | 0–1 | ..... | 4 | ..... | SW | ..... | ..... | Light | S | Pleasant..... | |
| Ashuelot. Nagasaki, Japan | 30.03 | 762.7 | 53 | 11.7 | 52 | 11.1 | 86 | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Canonicus, New Orleans, La. | 29.78 | 756.4 | 54 | 12.2 | 75 | 23.9 | 90 | SE | ..... | ..... | 3 | ..... | 10 | ..... | N&W | ..... | ..... | ..... | ..... | Cloudy..... | |
| Colorado, New York, N. Y. | 30.00‡ | 762.0‡ | ..... | ..... | 52 | 11.1 | 86 | NNE | 4 | 1.8 | ..... | ..... | 10 | ..... | N | 0.3 | 8. | ..... | ..... | Threatening | |
| Constellation, Havre, France | 29.56‡ | 750.8‡ | ..... | ..... | 56 | 13.3 | 69 | ESE | ..... | ..... | 4 | ..... | 10 | ..... | SE | ..... | ..... | ..... | ..... | Sprinkling... | |
| Constitution, Havre, France | 29.48‡ | 748.8‡ | ..... | ..... | 58 | 14.4 | 76 | ESE | ..... | ..... | 3 | ..... | 9 | ..... | SE | ..... | ..... | ..... | ..... | Drizzling..... | |
| Despatch, Constantinople, Turkey. | 29.71‡ | 754.6‡ | ..... | ..... | 54 | 12.2 | 93 | NE | ..... | ..... | 3 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Rainy ..... | |
| Franklin, Norfolk, Va. | 30.17 | 766.3 | 71 | 21.7 | 70 | 21.1 | 85 | S | 12 | 5.4 | .... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Hazy..... | |
| Gettysburg Valetta, Malta | 29.83‡ | 757.7‡ | ..... | ..... | 64 | 17.8 | 100 | NW | ..... | ..... | 5 | ..... | 5 | ..... | NW | Blank | Blank | ..... | ..... | Fair..... | |
| Guard, Porto Grande, Cape Verde Islands. | 30.01 | 762.2 | 77 | 25.0 | 74 | 23.3 | 76 | NE | ..... | ..... | 4 | ..... | 2 | ..... | NE | ..... | ..... | Ground | NW | Clear..... | |
| Hartford, Montevideo, Uraguay | 30.09 | 764.3 | 64 | 17.8 | 60 | 15.6 | 65 | N | 10 | 4.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear ..... | |
| Marion, Smyrna, Turkey | 29.64 | 752.8 | 64 | 17.8 | 58 | 14.4 | 94 | WSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | Heavy | Heavy | Smooth | ..... | Light rain... | |
| Michigan, Erie, Pa. | 29.37 | 746.0 | 71 | 21.7 | 54 | 12.2 | 87 | NE | ..... | ..... | 2 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Monocacy, Shanghai, China | 30.14‡ | 765.5‡ | ..... | ..... | 61 | 16.1 | 100 | SSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| New Hampshire, Port Royal, S. C. | 30.25† | 768.3† | ..... | ..... | 72 | 22.2 | 95 | S | 13 | 5.8 | ..... | ..... | 8 | ..... | S | ..... | ..... | ..... | ..... | Cloudy ..... | |
| Omaha, Hampton Roads, Va. | 30.10* | 764.5* | 69 | 20.6 | 67 | 19.4 | 95 | SSW | 2 | 0.9 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Bright ..... | |
| Onward, Callao, Peru | 30.04† | 763.0† | ..... | ..... | 69 | 20.6 | 90 | SSE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Long | W | Misty..... | |
| Ossipee, N. 24° 00′ W. 81° 05′ | 30.08‡ | 764.0‡ | ..... | ..... | 79 | 26.1 | 95 | ESE | ..... | ..... | 6 | ..... | 2 | ..... | SE | ..... | ..... | ..... | ..... | Clear..... | |
| Palos, Shanghai, China | 30.19* | 766.8* | 65 | 18.3 | 61 | 16.1 | 71 | SSW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Pensacola, N. 37° 50′, W. 131° 55′ | 30.29 | 769.4 | 58 | 14.4 | 54 | 12.2 | 80 | N | 3 | 1.3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Smooth | N | Cloudy..... | |
| Plymouth, N. 32° 3′ W. 69° 39′ | 30.10‡ | 764.5‡ | ..... | ..... | 68 | 20.0 | 79 | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Clear..... | |
| Powhatan, Norfolk, Va. | 30-12‡ | 765.0‡? | ..... | ..... | 71 | 21.7 | 90 | S | 13.2 | 5.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear ..... | |
| Ranger. Amoy, China | 30.25* | 768.3* | ..... | ..... | 66 | 18.9 | 84 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Blue sky..... | |
| Rio Bravo, Brownsville, Texas | 29.64 | 752.8 | 79 | 26.1 | 77 | 25.0 | 100 | NNW | ..... | ..... | 3–4 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Cloudy..... | |
| Santee, Annapolis, Md. | 29.92‡ | 760.0‡ | ..... | ..... | 64 | 17.8 | 83 | S | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | Hazy..... | |
| Saratoga, Washington, D. C. | 29.89 | 759.2 | 68 | 20.0 | 68 | 20.0 | 95 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | Calm | Light | Light | ..... | ..... | Clear..... | |
| St. Louis, League Island, Pa | 29.95 | 760.7 | 66 | 18.9 | 59 | 15.0 | 88 | NE | 6 | 2.7 | ..... | ..... | 10 | ..... | NE | 0.07 | 1.8 | ..... | ..... | Cloudy..... | |
| Supply, Havre, France | 29.53 | 750.0 | 59 | 15.0 | 62 | 16.7 | 77 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Rainy... ..... | |
| Swatara, Key West, Fla. | 30.00‡ | 762.0‡ | ..... | ..... | 80 | 26.7 | 78 | ESE | ..... | ..... | 5 | ..... | 5 | ..... | S&E | ..... | ..... | ..... | ..... | Fair ..... | |
| Tennessee, Suez, Egypt | 29.72* | 754.9* | 80 | 26.7 | 79 | 26.1 | 47 | S | 5 | 2.2 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | Mod'ate | S | D. clouds..... | |
| Trenton, Villefranche, France | 29.74‡ | 755.4‡ | ..... | ..... | 70 | 21.1 | 66 | SSW | ..... | ..... | 1–2 | ..... | 2 | ..... | N | 0 | 0 | ..... | ..... | Fair ..... | |
| Tuscarora, N. 16° 21′, W. 98° 37′ | 29.65 | 753.1 | 76 | 24.4 | 77 | 25.0 | 82 | Var. | ..... | ..... | 0–1 | ..... | 8? | ..... | Calm | 0 | 0 | Long | WSW | Clear?..... | |
| Vandalia, Villefranche, France | 29.80‡ | 756.9‡ | ..... | ..... | 64 | 17.8 | 68 | SSW | ..... | ..... | 1 | ..... | 8 | ..... | S | ..... | ..... | ..... | ..... | Fair..... ..... | |
| Wabash, Boston, Mass. | 30.12‡ | 765.0‡ | ..... | ..... | 46 | 7.8 | 92 | E | 6 | 2.7 | ..... | ..... | 10 | ..... | ..... | 0.23 | 5.8 | ..... | ..... | Raining..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable; the position given is that at noon, local time, instead of that at 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Panama, N. 39° 14′, W. 124° 4′ | | | 30.15* | 765.8* | | | | NE | | | 2 | | 10 | | | | | | Capt. Cobb. |
| S. S. City of Peking. Yokohama, Japan | | | 29.79 | 756.7 | 48 | 8.9 | 70 | N | 16.0 | 7.2 | | | 2 | | NE | Mod'to | NW | Hazy | Capt. Seabury. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | Smooth | Calm | D. clouds | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Tokio, N. 37° 14′, W. 130° 49′ | | | | | 54 | 12.2 | | ENE | | | 3 | | 2 | | NE | Long | NNW | D. clouds | Capt. Dearborn. |
| S. S. Colima, N. 27° 56′, W. 115° 50′ | | | 30.08† | 764.0† | 60 | 15.6 | 88 | NNE | | | 5 | | 2 | | NNW | Mod'ate | NW | D. clouds | Capt. Maury. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. W. H. Thompson. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, N. 36° 53′, W. 135° 25′ | | | 30.38* | 771.6* | | | | SW | | | 4 | | n | | SW | Mod'ate | W | Fine | Capt. John Metcalf. |
| S. S. Gaelic, N. 49° 07′, E. 151° 29′ | | | 29.57† | 751.1† | 51 | 10.6 | .03 | W | | | 5 | | k | | W | Mod'ate | W | D. clouds | Capt. W. H. Kidley |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig, N. 49° 34′, W. 14° 1′ | | | 29.62 | 752.3 | 54.0 | 12.2 | 74 | NNE | | | 6 | | 5 | | E | High | SW | Clearing | |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Obser |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | Character | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | |
| S. S. Indiana, Philadelphia, Pa | | | 29.99* | 761.7* | 55 | 12.8 | ?? | NE | | | 5 | | 9 | | NE | | | Cloudy | Captain Sargent. |
| S. S. Ohio, N. 43° 14′, W. 46° 23′ | | | 29.82 | 757.4 | 51 | 10.6 | ?? | N | | | 5 | | 10? | | N | Mod'ate | Var. | Clear? | Captain Morrison. |
| S. S. Pennsylvania, Liverpool | | | 29.72† | 754.9† | 56 | 13.3 | 100 | ESE | | | 4 | | 10 | | E | | | Overcast | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for elevation; instrumental error not known. †Corrected for temperature and elevation, instrumental error not known.

## RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| S. S. Scandinavian, N. 41° 6′, W. 66° 36′ | | | 30.21 | 767.3 | 41 | 5.0 | | SW | | | 2 | | 10s | | SW | Smooth | SW | Overcast | Capt. W. Richardson. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

## MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, St. John, N. B. | | | 30.07 | 763.8 | 50 | 10.0 | 58 | E | | | | | 0 | | | | | Clear | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.74 | 755.4 | 8 | —13.3 | 87 | N | 0.2 | 0.1 | | | 10ks | | | | | Cloudy | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 24, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.02 | 762.4 | 65.3 | 18.5 | 86 | NE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Dr. Ollive. |
| Nemours | ..... | ..... | 29.91 | 759.8 | 70.7 | 21.5 | 54 | NW | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair. | Michel. |
| Algiers | ..... | ..... | 29.75 | 755.6 | 70.2 | 21.2 | 48 | WSW | ..... | ..... | 6 | ..... | 9 | ..... | ..... | 0 | 0 | Covered | Towiliere. |
| La Calle | ..... | ..... | 29.78 | 756.3 | 73.4 | 23.0 | 60 | NNW | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Boulangeot. |
| Tunis | ..... | ..... | 29.78 | 756.5 | 82.4 | 28.0 | 34 | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Jacques. |
| Sfax | ..... | ..... | 29.92 | 760.0 | 75.2 | 24.0 | ..... | WSW | ..... | ..... | 5 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Gau. |
| Saida | ..... | ..... | 30.01 | 762.3 | 64.4 | 18.0 | ..... | N | ..... | ..... | 1 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Herbin. |
| Tebessa | ..... | ..... | 29.84 | 757.8 | ..... | ..... | ..... | SW | ..... | ..... | 8 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair. | Watrin. |
| Geriville | ..... | ..... | 30.02 | 762.5 | 62.2 | 16.8 | 78 | W | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Lemaillot. |
| Laghouat | ..... | ..... | 29.93 | 760.3 | 84.6 | 29.2 | 18 | SW | ..... | ..... | 7 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Bertrand. |
| Biskra | ..... | ..... | 29.89 | 759.1 | 84.2 | 29.0 | 52 | SE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.30 | 744.1 | 29.84 | 757.9 | 58.6 | 14.8 | 61 | SE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0.165 | 4.2 | ..... | Prof. Ivan Stozir· |
| Cracow, I. R. Observatory | 29.14 | 740.2 | 29.90 | 759.4 | 61.5 | 16.4 | 52 | NE | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbiski. |
| Eperies | 29.13 | 739.8 | 30.00 | 761.9 | 57.9 | 14.4 | 38 | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.63 | 727.1 | 29.89 | 759.1 | 46.6 | 8.1 | 81 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.146 | 3.70 | ..... | Andreas Rospini. |
| Hermannstadt | 28.54 | 725.0 | 29.96 | 760.9 | 54.7 | 12.6 | 34 | ESE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.21 | 716.5 | 29.50 | 749.3 | 63.0 | 17.2 | 42 | SE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner |
| Lemberg | 29.03 | 737.3 | 30.02 | 762.5 | 51.3 | 10.7 | 53 | E | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Dr. T. Stanecki. |
| Pola | 29.62 | 752.3 | 29.73 | 755.2 | 57.7 | 14.3 | 90 | SE | ..... | ..... | 4 | ..... | 10s | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.52 | 749.8 | 29.98 | 761 4 | 61.2 | 16.2 | 24 | E | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.60 | 751.7 | 29.87 | 758.7 | 56.7 | 13.7 | 56 | SE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Karl Stancel. |
| Trieste | 29.67 | 753.6 | 29.77 | 756.2 | 57.4 | 14.1 | 69 | ENE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 2.189 | 55.6 | Rainy | P. Busin. |
| Vienna | 29.11 | 739.4 | 29.82 | 757.5 | 54.9 | 12.7 | 54 | SSE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.08 | 713.2 | 29.58 | 751.2 | 50.9 | 10 5 | 86 | SW | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0.126 | 3.2 | Raining | Prof. M. Passau. |
| Brussels | 29.33 | 745.0 | 29.52 | 749.9 | 61.9 | 16.6 | 67 | S | ..... | ..... | 1 | 5 | 5 | E | E | 0 051 | 1.3 | ..... | Royal Observatory. |
| Furnes | 29.55 | 750.6 | 29.58 | 751.2 | 57.6 | 14.2 | 76 | NW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.094 | 2.4 | ..... | M. E. de Cae. |
| Maeseyck | 29.44 | 747.7 | 29.56 | 750.9 | 62.6 | 17.0 | 63 | ESE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0.283 | 7.2 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4? feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

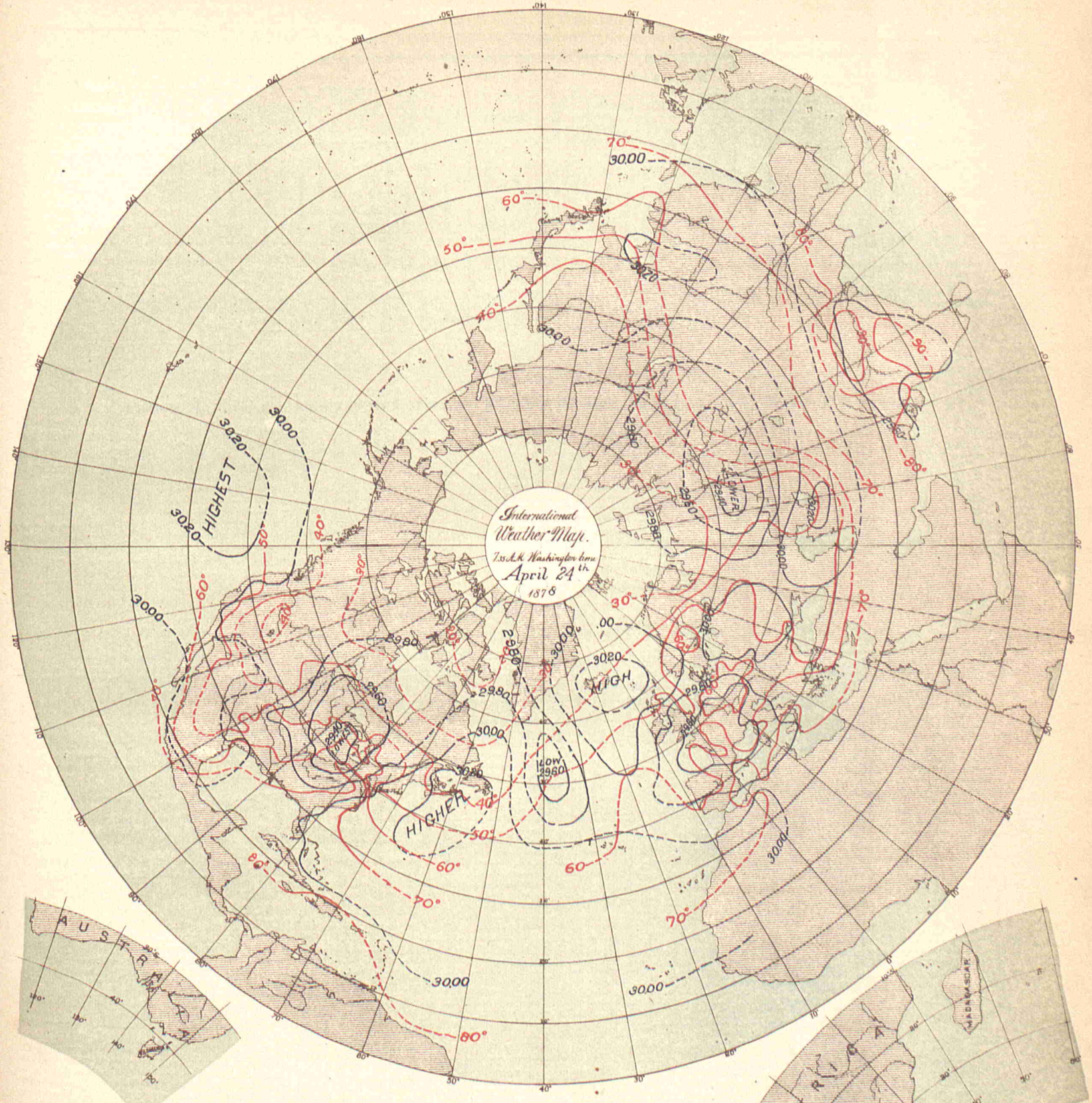
| STATIONS. | Barometer: Corrected for instrum't'al error and temperature. Inches. | Barometer: Corrected for instrum't'al error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.94 | 760.5 | 30.04 | 763.0 | 45.7 | 7.6 | ..... | NE | 23 | 10.3 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Blue sky..... | W. Buswell. |
| Ardrossan | 29.87 | 758.7 | 29.90 | 759.4 | ..... | ..... | ..... | NE | ..... | ..... | 6 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.86 | 758.4 | 56.9 | 13.8 | ..... | NNE | 17 | 7.6 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.71 | 754.6 | 60.2 | 15.7 | ..... | ENE | 29 | 13.0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 29.80 | 756.9 | 60.7 | 15.9 | ..... | NE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | J. L. E. Dreyer. |
| Bradford, Yorkshire | 29.35 | 745.5 | 29.74 | 755.4 | 55.6 | 13.1 | ..... | E | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0.02 | 0.5 | D. clouds..... | J. McLandsborough. |
| Bridgetown, (Barbados) | ..... | ..... | 29.98 | 761.5 | 72.5 | 22.5 | ..... | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.63 | 752.6 | 61.5 | 16.4 | ..... | NE | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | H. Todd. [H. C. |
| Cardington | ..... | ..... | 29.62 | 752.3 | 60.0 | 15.6 | ..... | NE | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | John McLaren. |
| Chatham, School M. E. | 29.57 | 751.1 | 29.70 | 754.4 | 53.7 | 12.1 | ..... | E | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | Q. M. Serg., Geo. Stuart, R. E |
| Dartmoor | 28.14 | 714.7 | 29.61 | 752.1 | 47.6 | 8.7 | ..... | E | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy ..... | Alexander Watt. |
| Donaghadee | 29.84 | 757.9 | 29.87 | 758.7 | 55 | 12.8 | ..... | NNE | ..... | ..... | 6 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 29.56 | 750.8 | 29.58 | 751.3 | 55 | 12.8 | ..... | NE | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | ¾ clouded... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.71 | 754.6 | 59.5 | 15.3 | ..... | NE | 8.2 | 3.7 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Thomas Mackereth. |
| Falmouth, Observatory | 29.38 | 746.2 | 29.60 | 751.8 | 52.6 | 11.1 | ..... | ENE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy ..... | The Staff. |
| Fort Napier, (Natal) | 27.92 | 709.2 | 30.15 | 765.8 | 66.0 | 18.9 | ..... | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.63 | 752.6 | 29.86 | 758.4 | 90.0 | 32.2 | ..... | W | ..... | ..... | 0 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | |
| Galway, Queen's College | ..... | ..... | 29.77 | 756.1 | 60 | 15.6 | ..... | NE | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.82 | 757.4 | 29.88 | 758.9 | 68.0 | 20.0 | ..... | W | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | Corpl. Wm. Allen, A. H. C. |
| Glasgow, Observatory | 29.73 | 755.1 | 29.94 | 760.5 | 52.9 | 11.6 | ..... | ENE | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | Blue sky..... | D. G. Maclean. |
| Great Yarmouth | 29.66 | 753.4 | 29.66 | 753.4 | 50 | 10.0 | ..... | ENE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.43 | 747.5 | 29.60 | 751.8 | 54.8 | 12.7 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | The Staff, for G. B. Airy. |
| Guernsey | 29.32 | 744.7 | 29.54 | 750.3 | 55 | 12.8 | ..... | NE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 29.64 | 752.8 | 56 | 13.3 | ..... | NE | .... | ..... | 6 | ..... | 10n | ..... | ..... | 0.55 | 14.0 | Raining..... | M. P. Moyle. |
| Holyhead | 29.70 | 754.4 | 29.76 | 755.9 | 52 | 11.1 | ..... | NNE | ..... | ..... | 5 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky ..... | John Tilston. |
| Jersey | 29.28 | 743.7 | 29.56 | 750.8 | 55.3 | 12.9 | ..... | W | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 29.61 | 752.1 | 56.8 | 13.8 | ..... | NE | 13 | 5.8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | The Staff. |
| Kingstown | 29.79 | 756.7 | 29.82 | 757.4 | 50 | 10.0 | ..... | N | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.67 | 753.6 | 57.9 | 14.4 | ..... | NE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds .... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.81 | 757.2 | 29.89 | 759.2 | 70.0 | 21.1 | ..... | SW | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Sgt. Fred. Travis, A. H. |
| Nairn | 29.96 | 761.0 | 30.05 | 763.3 | 49 | 9.4 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Clear..... | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 30.04 | 763.0 | 78.2 | 25.7 | ..... | NE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | C. S. Duncombe. |
| Nottingham, Observatory | 29.54 | 750.3 | 29.73 | 755.1 | 57.1 | 13.9 | ..... | NE | ..... | ..... | 6 | ..... | 4c;k | ..... | NE | 0.005 | 0.13 | D. clouds.... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.15 | 740.4 | 29.66 | 753.4 | 56.1 | 13.4 | ..... | NE | ..... | ..... | 6 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.63 | 752.6 | 54 | 12.2 | ..... | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling.... | Mr. Lucas. |
| Plymouth | 29.49 | 749.0 | 29.57 | 751.1 | 54.7 | 12.6 | ..... | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Merrifield. |
| Roche's Point | 29.66 | 753.4 | 29.71 | 754.6 | 58 | 14.4 | ..... | NNE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Cloudy..... | W. Kennedy. |
| Saint Ann's Head | 29.48 | 748.8 | 29.64 | 752.8 | 57 | 13.9 | ..... | ENE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | Drizzling.... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 30.12 | 765.0 | 48.1 | 8.9 | ..... | E | 20 | 8.9 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.90 | 759.4 | 42.7 | 5.9 | ..... | NNW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Sergt. W. H. Lyne. |
| Sheffield | 29.58 | 751.3 | 29.80 | 756.9 | 54.9 | 12.7 | ..... | NE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0 | 0 | Overcast..... | W. F. Cooper. |
| Silloth Rectory | 29.81 | 757.2 | 29.84 | 757.9 | 59.7 | 15.4 | 58 | SE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.37 | 746.0 | 29.78 | 756.4 | 57.0 | 13.9 | ..... | SW | ..... | ..... | 0 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.. .. | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 30.03 | 762.7 | 48 | 8.9 | ..... | NE | ..... | ..... | 6 | ..... | 2 | ..... | ..... | ..... | ..... | ¾ clouded.. | John Sutherland. |
| Stratfield Turgiss | 29.40 | 746.7 | 29.61 | 752.1 | 53.9 | 12.2 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Rev. C. H. Griffith, F. M |
| Thurso | ..... | ..... | 30.09 | 764.3 | 50 | 10.0 | ..... | ENE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 29.60 | 751.8 | 55 | 12.8 | ..... | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy..... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 29.79 | 756.7 | 54.9 | 12.7 | ..... | NW | 21 | 9.4 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Misty..... | The Staff. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.44 | 747.8 | 66.0 | 18.9 | 83 | NE | ..... | ..... | 1 | ..... | 4k | ..... | ..... | 0.01 | 0.3 | Hazy..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.79 | 756.7 | 29.98 | 761.4 | 82.0 | 27.8 | 73 | NE | 9.0 | 4.0 | ..... | 4 | 2 | WSW | NE | 0 | 0 | Fine..... | C. Meldrum. |
| Melbourne, Observatory | 29.89 | 759.2 | 29.98 | 761.5 | 55.0 | 12.8 | 80 | N | 12 | 5.4 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | Fine..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m.

## MARINE SERIES.

| VESSELS. | Sea or swell: Height scale 0–9 | Sea or swell: Direction from— | | | |
|---|---|---|---|---|---|
| S. S. Algeria, N. 49° 0′, W. 30° 5′ | 5* | N | Overcast... | Capt. W. Watson. | |
| S. S. Batavia | ..... | ..... | ..... | Capt. J. E. Monland. | |
| Ship Camperdown | ..... | ..... | ..... | Capt. A. T. Miller. | |
| Brig Catherine | ..... | ..... | ..... | Capt. Adam Smith. | |
| Barque Celeste | ..... | ..... | ..... | Capt. D. F. McKechnie | |
| S. S. Hibernia | ..... | ..... | ..... | Capt. W. R. Cato | |
| Barque Maroon | ..... | ..... | ..... | Capt. A. T. Brown. | |
| Ship Mikado | ..... | ..... | ..... | Capt. C. C. Prehn. | |
| S. S. Naid, N. 45° 50′, W. 31° 35′ | 3 | NE | Overcast..... | Capt. J. Smith. [R. | |
| S. S. Peruvian, N. 49° 20′ W. 38° 50′ | 4 | Confused | Drizzling..... | Capt. W. H. Smith, R. N | |
| Royal Alice | ..... | ..... | ..... | Capt. E. M. Hughes. | |
| S. S. Seine | ..... | ..... | ..... | Capt. H. Manning. | |
| Barque Sorata | ..... | ..... | ..... | Capt. Jas. J. Price. | |
| Schooner Traveller | ..... | ..... | ..... | Capt. Alex. Simpson. | |
| S. S. Yorkshire | ..... | ..... | ..... | Capt. H. Longley. | |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | | | | | | | | | | | | | | | | | | | Mr. Ansart. |
| San Jose | 26.24 | 666.5 | | | 70.2 | 21.2 | 82 | E | | | 1 | 6pc | Haze | | | 0 | 0 | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.91 | 759.7 | 29.96 | 760.9 | 49.8 | 9.9 | 55 | E | | | 4 | | 0 | | | | | | |
| Fanöe | 29.85 | 758.1 | 29.87 | 758.6 | 56.1 | 13.4 | 50 | E | | | 6 | | 0 | | | | | | |
| Godthaab, (Greenland) | 29.74 | 755.5 | 29.79 | 756.6 | 27.5 | — 2.5 | 100 | SW | | | 4 | | 10 | | | | | Snowing | |
| Stykkisholm, (Iceland) | 30.27 | 768.9 | 30.32 | 770.0 | 37.6 | 3.1 | 88 | E | | | 4 | | 0 | | | | | | |
| Thorshavn, (Faröe) | 30.23 | 767.9 | 30.27 | 768.8 | 45.1 | 7.3 | 70 | NE | | | 2 | | 3 | | | | | | |
| Vestervig | 29.76 | 755.9 | 29.93 | 760.2 | 58.3 | 14.6 | 48 | E | | | 4 | | 0 | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.02 | 737.1 | 29.57 | 751.1 | 60.8 | 16 | 67 | SSW | | | 1 | | 5 | | | 0.244 | 6.2 | Cloudy | Collignon, Director. |
| Amiens, Normal School | | | | | | | | | | | | | | | | | | | Bonvarne, Director. |
| Avignon, Normal School | 29.49 | 749.1 | 29.57 | 751.1 | 52.5 | 11.4 | 90 | NE | | | 1 | | 10 | | | 1.043 | 26.5 | Raining | Mr. Giraud, Director |
| Bar-sur-Seine | 28.98 | 736.1 | 29.52 | 749.8 | 59.5 | 15.3 | 55 | E | | | 1 | | 8kn | | E | 0.043 | 1.1 | Very cloudy | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 62.2 | 16.8 | 50 | SSE | | | 1 | | 8 | | SE | 0.010 | 0.25 | Very cloudy | Normal School. |
| Besançon | 28.70 | 728.9 | 29.57 | 751.1 | 59.0 | 15 | 68 | NNE | | | 2 | | 8 | | NE | 0.752 | 19.1 | Very cloudy | Normal School. |
| Bourg-en-Bresse | 28.66 | 728.0 | 29.56 | 750.9 | 55.0 | 12.8 | 75 | S | | | 2 | | 10n | | S | 0.322 | 8.2 | Covered | Normal School. |
| Bourges, Normal School | 29.09 | 736.5 | 29.54 | 750.2 | 61.7 | 16.5 | 75 | E | | | 2 | | 1 | | E | 0.31 | 8. | Slightly cl'dy | A. Wagner, Director. |
| Brest, Naval Observatory | 29.25 | 743.0 | 29.47 | 748.6 | 56.3 | 13.5 | 70 | NE | | | 4 | | 8n | | NE | 0.010 | 0.25 | | The Staff. |
| Carcassonne, Normal School | 29.14 | 740.1 | 29.54 | 750.3 | 65.5 | 18.6 | 59 | NNE | | | 2 | | 10 | | E | 0.24 | 6. | Covered | Vateau, Director. |
| Caen | | | | | | | | | | | | | | | | | | | Normal School. |
| Chartres, Normal School | 28.89 | 733.8 | 29.43 | 747.6 | 63.0 | 17.2 | 96 | SE | | | 2 | | 3 | | S | 0.043 | 1.1 | | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.26 | 743.1 | 29.57 | 751.0 | 57.4 | 14.1 | 78 | NW | | | 2 | | 5 | | | 0 | 0 | Cloudy | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.17 | 715.6 | 29.49 | 749.0 | 60.8 | 16.0 | 52 | SE | | | 1 | | 8 | | SW | 0.059 | 1.5 | Very cloudy | Alluard, Director. |
| Commercy, Normal School | 28.72 | 729.6 | 29.60 | 751.7 | 55.0 | 12.8 | 81 | SE | | | 2 | | 10 | | SE | 0.451 | 11.45 | Covered | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.48 | 723.3 | 29.62 | 752.3 | 50.9 | 10.5 | 77 | NE | | | 2 | | 10 | | NW | 0.720 | 18.3 | Covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 29.28 | 743.8 | 29.49 | 749.1 | 59.0 | 15.0 | 78 | SSW | | | 2 | | 8 | | SSW | 0.217 | 5.5 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.22 | 742.1 | 29.52 | 749.8 | 58.8 | 14.9 | 68 | SE | | | 2 | | 5 | | SE | 0.295 | 7.5 | Cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.71 | 729.2 | 29.61 | 752.0 | 59.0 | 15 | 72 | W | | | | | 10 | | W | 0.016 | 0.4 | Light rain | Voudez, Director. |
| Lorient, Naval Observatory | 29.41 | 746.9 | 29.50 | 749.4 | 62.2 | 16.8 | 72 | SE | | | 2 | | 8 | | NE | 0.102 | 2.6 | ¾ Covered | T. Carré, Director. |
| Mâcon, Normal School | 29.05 | 737.9 | 29.70 | 754.4 | 51.4 | 10.8 | 63 | S | | | 2 | | 5 | | SW | 0.16 | 4. | Cloudy | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | 28.45 | 722.7 | 29.48 | 748.7 | 55.6 | 13.1 | 72 | SW | | | 2 | | 5 | | SW | 0.43 | 11. | Cloudy | Normal School. |
| Nismes, Normal School | 29.36 | 745.8 | 29.56 | 750.9 | 59.4 | 15.2 | 63 | SE | | | 2 | | 8 | | S | 0.55 | 14. | Very cloudy | Boyer, Director. |
| Orleans, Normal School | 29.08 | 738.5 | 29.44 | 747.8 | 72.5 | 22.5 | 60 | SW | | | 2 | | 5 | | S | 0.04 | 1 | Cloudy | Bernard, Director. |
| Paris, Observatory | 29.30 | 744.1 | 29.49 | 749.1 | 60.6 | 15.9 | 55 | N | | | 1 | | 9 | | | 0.002 | 0.05 | Covered | National Observatory. |
| Privas | 28.53 | 724.6 | 29.58 | 751.3 | 55.4 | 13 | 86 | N | | | 2 | | 2 | | N | 1.38 | 35. | Slightly cov. | Normal School |
| Puy de Dome (Summit) | | | | | | | | | | | | | | | | | | | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.46 | 748.3 | 29.49 | 749.1 | 59.0 | 15.0 | 52 | SW | | | 3 | | 10 | | SW | 0.04 | 1. | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.45 | 747.9 | 29.53 | 750.1 | 63.3 | 17.4 | 56 | SE | | | 1 | | 2 | | SE | 0 | 0 | Slightly cl'dy | F. Lucard, Director |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | M. H. Hercouet |
| Tarbes, Normal School | 28.48 | 723.4 | 29.53 | 750.0 | 62.6 | 17 | 71 | SW | | | 2 | | 5 | | | 0.08 | 2. | Cloudy | T. Hugues, Director |
| Villefranche | | | | | | | | | | | | | | | | | | | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.80 | 756.8 | 29.82 | 757.5 | 78.8 | 26 | | | | | | | | | | 0.39 | 10. | | L'Abbé Marchésı. |
| Lyons | | | 29.60 | 751.9 | 58.5 | 14.7 | 70 | | | | | | 7 | | | 0.008 | 0.2 | Rainy | M. Jeys. |
| Marseilles, Observatory | | | 29.56 | 750.9 | 55.9 | 13.3 | 79 | WNW | | | 1 | | 10 | | | 0.055 | 1.40 | Covered | The Staff. |
| Mont-Louis | 24.44 | 620.7 | 29.75 | 755.7 | 47.5 | 8.6 | 48 | SSW | 20.5 | 9.17 | | | 2 | | SSW | 0.327 | 8 3 | | Mr. Falguère. |
| Nice | | | 29.57 | 751.1 | 58.8 | 14.9 | 89 | W | | | 2 | | 4 | | | | | Rainy | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.25 | 742.9 | 29.52 | 749.9 | 59.9 | 15.5 | 60 | NE | | | 1 | | 9 | | SSE | 6 | 0 | | Marié Davy, Director |
| Perpignan | | | 29.58 | 751.2 | 61.0 | 16.1 | 70 | SE | 5.6 | 2.50 | | | 5 | | NW | 0.059 | 1.5 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.09 | 561.0 | | | 32.9 | 0.5 | | SW | | | 1 | | 10 | | | 0.532 | 13.5 | Snowy | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.37 | 746.1 | 29.54 | 750.3 | 61.2 | 16.2 | 55 | NE | | | 1 | | 10 | | | 0.008 | 0.2 | Raining | E. Renou. |
| Toulouse, Observatory | 28.88 | 733.5 | 29.59 | 751.6 | 60.3 | 15.7 | 59 | W | | | 2 | | 6 | | | 0.709 | 18.00 | | The Staff. |
| Tours | 29.32 | 744.8 | 29.52 | 749.8 | 61.2 | 16.2 | 64 | E | | | 1 | | 7 | | E | 0.283 | 7.2 | | C. Marquet. |
| Versailles, (near Paris) | | | 29.54 | 750.4 | 60.1 | 15.6 | 59 | N | | | 1 | | 9 | | | 0.004 | 0.11 | Almost cov'd | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.06 | 763.5 | 30.08 | 764.1 | 55.4 | 13.0 | 88 | SE | 6.3 | 2.8 | | | 3 | | | 0 | 0 | Fair | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet. Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,363 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.68 | 728.4 | 29.50 | 749.4 | 67.3 | 19.6 | 62 | E | | | 5 | | 7 | E | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 29.52 | 749.7 | 29.69 | 754.0 | 63.5 | 17.5 | 40 | SE | | | 3 | | 6 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.34 | 745.1 | 29.86 | 758.5 | 62.6 | 17.0 | 45 | SE | | | 3 | | 8 | | | Inap. | Inap. | | Royal University Obs'y |
| Carlsruhe | 29.11 | 739.5 | 29.53 | 750.0 | 59.7 | 15.4 | 67 | NE | | | 1 | | 10 | | | 0.575 | 14.6 | | Albert Senz. |
| Cassel | 29.07 | 738.4 | 29.67 | 753.7 | 66.2 | 19.0 | 42 | ESE | | | 4 | | 8 | ENE | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.37 | 746.0 | 29.53 | 750.1 | 67.3 | 19.6 | 48 | E | | | 2 | | 8 | | | 0 | 0 | | Director Lose. |
| Emden | 29.65 | 753.2 | 29.69 | 754.1 | 64.4 | 18.0 | 45 | NE | | | 6 | | 0 | | | 0 | 0 | | Prof. Prestel. |
| Frankfort on the Main | 29.22 | 742.3 | 29.58 | 751.2 | 63.5 | 17.5 | 42 | NE | | | 1 | | 10 | | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 28.12 | 714.2 | 29.51 | 749.6 | 61.2 | 16.2 | 70 | SW | | | 2 | | 6 | W | | 0.075 | 1.9 | Light rain | M. Wilhelm. |
| Hamburg | 29.68 | 753.9 | 29.75 | 755.7 | 60.1 | 15.6 | 49 | ENE | | | 6 | | 0 | | | 0 | 0 | Clear | Captain F. Hegemann. |
| Kiel | 29.80 | 756.9 | 29.82 | 757.3 | 51.6 | 10.9 | 58 | ENE | | | 4 | | 0 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.95 | 760.6 | 30.03 | 762.7 | 60.8 | 16.0 | 33 | SE | | | 3 | | 0 | | | 0 | 0 | | Prof. E Luther. |
| Köslin | | | 29.89 | 759.1 | 60.6 | 15.9 | | SE | | | 4 | | 0 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.28 | 743.7 | 29.69 | 754.1 | 62.2 | 16 8 | 40 | E | | | 6 | | 7 | ESE | | 0 | 0 | Stormy | Prof. Bruhns. |
| Memel, Naval School | 30.08 | 764.0 | 30.13 | 765.2 | 52.7 | 11.5 | 54 | SW | | | 1 | | 0 | | | | | | Reinbrecht von Skalweit. |
| Neufahrwasser | 30.01 | 762.2 | 30.02 | 762.6 | 58.3 | 14.6 | 37 | ESE | | | 3 | | 0 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.65 | 753.0 | 29.94 | 760.4 | 59.4 | 15.2 | 52 | SE | | | 5 | | 6 | | | 0 | 0 | | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.01 | 736.8 | 29.55 | 750.5 | 57.6 | 14.2 | 75 | NNE | | | 2 | | 10 | NNE | | 0.035 | 0.90 | | Dr. Schur. |
| Stuttgart | 28.59 | 726.2 | 29.52 | 749.7 | 58.1 | 14.5 | 68 | N | | | 1 | | 9 | W | | 0.335 | 8.5 | Raining | Prof. Schoder. |
| Treves, (Trier) | 28.95 | 735.2 | 29.46 | 748.3 | 57.4 | 14.1 | 72 | NNE | | | 2 | | 10 | | | 0.391 | 9.93 | Foggy | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.04 | 712.3 | 29.48 | 748.8 | 63.1 | 17.3 | 40 | Calm | 0 | 0 | | | 9ck | | | 0 | 0 | | Dr. Von Bebber. |
| Wustrow, Naval School | 29.91 | 759.8 | 29.95 | 760.8 | 53.8 | 12.1 | 55 | E | | | 4 | | 0 | | | 0 | 0 | | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.60 | 751.7 | 29.98 | 761.6 | 65.1 | 18.4 | | SW | | | 3.5 | | | | | | | ½ clear | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.71 | 754.5 | 29.76 | 755.8 | 84.8 | 29.3 | 76 | SW | 24? | 10.7? | | | 1 | | | 0 | 0 | D. clouds | |
| Deesa | 29.39 | 746.4 | 29.87 | 758.6 | 78.5 | 25.8 | 58 | NW | | | | | 10 | | W | 0 | 0 | Gloomy | |
| Bombay | 29.79 | 756.6 | 29.82 | 757.5 | 83.7 | 28.7 | 78 | WNW | 12 | 5.4 | | | 1 | S | | 0 | 0 | D. clouds | |
| Poona | 27.83 | 706.9 | 29.78 | 756.5 | 91.5 | 33.1 | 29 | N | | | | | | | | 0 | 0 | Dust-whirl. | |
| Lahore | 29.09 | 739.0 | 29.84 | 758.0 | 77.3 | 25.2 | 53 | W | 6.7 | 3.0 | | | 10 | | | Inap. | Inap. | Raining | |
| Belgaum | 27.30 | 693.3 | 29.78 | 756.5 | 86.3 | 30.2 | 55 | W | 12 | 5.4 | | | 1 | | | 0 | 0 | D. clouds | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.87 | 733.3 | 29.75 | 755.5 | 92.4 | 33.6 | 29 | Calm | 2.8 | 1.3 | | | 7 | | | 0.12 | 3.0 | | |
| Agra | 29.21 | 741.9 | 29.77 | 756.2 | 82.2 | 27.9 | 51 | E | | | | | 10 | E | | | | Raining | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.69 | 728.8 | 29.70 | 754.4 | 97 | 36.1 | 23 | NE | 8.2 | 3.7 | | | 5 | | N | 0 | 0 | D. clouds | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.35 | 745.4 | 29.71 | 754.6 | 90.2 | 32.3 | 60 | W | 4.7 | 2.1 | | | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.43 | 747.6 | 29.74 | 755.3 | 88.7 | 31.5 | 39 | SE | 1.9 | 0.8 | | | 8 | | W | 0.02 | 0.5 | Showery | |
| Patna | 29.56 | 750.8 | 29.73 | 755.2 | 96.4 | 35.8 | 40 | E | 2.8 | 1.3 | | | 10 | E | E | 0 | 0 | Lightning | |
| Hazaribagh | 27.79 | 705.8 | 29.77 | 756.1 | 85 | 29.4 | 37 | SSW | 9.1 | 4.1 | | | 10 | W | S | 0.01 | 0.3 | Raining | |
| Cuttack | 29.78 | 756.3 | 29.86 | 758.4 | 88.1 | 31.2 | 51 | SSW | 7.3 | 3.3 | | | 10 | | | 0 | 0 | Thunder | |
| Calcutta (Alipore) | 29.80 | 756.9 | 29.82 | 757.4 | 86.7 | 30.4 | 70 | S | 6.0 | 2.7 | | | 1 | W | | 0 | 0 | D. clouds | |
| Goalpara | 29.45 | 748.1 | 29.84 | 758.0 | 78.8 | 26.0 | 78 | ESE | 7.3 | 3.3 | | | 1 | | | 0.17 | 4.3 | D. clouds | |
| Chittagong | 29.77 | 756.2 | 29.86 | 758.5 | 83.9 | 28.8 | 75 | WSW | 8.2 | 3.7 | | | | | | 0 | 0 | Misty | |
| Sibsagar | 29.59 | 751.6 | 29.93 | 760.2 | 77.6 | 25.3 | 75 | ENE | 2.9 | 1.3 | | | 7 | SW | | 0 | 0 | D. clouds | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.39 | 721.1 | 29.72 | 754.8 | 94.5 | 34.7 | 28 | SE | 4.7 | 2.1 | | | 3 | S | | 0 | 0 | D. clouds | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.35 | 745.4 | 29.75 | 755.7 | 52.0 | 11.1 | 75 | E | 5.6 | 2.5 | ..... | ..... | 10 | ..... | ..... | 0.185 | 4.7 | ..... | Prof. Giovanni Codig. |
| Padua | 29.59 | 751.6 | 29.70 | 754.3 | 51.4 | 10.8 | 92 | NNE | 20.6 | 9.2 | ..... | ..... | 10 | E | ..... | 0.295 | 7.5 | ..... | Prof. Dott. Lorenzloni |
| Vicenza | 29.53 | 750.0 | 29.72 | 754.8 | 50.7 | 10.4 | 92 | N | 4.3 | 1.9 | ..... | ..... | 10 | E | ..... | 0.665 | 16.9 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.34 | 719.9 | 29.65 | 753.0 | 48.9 | 9.4 | 81 | N | ..... | ..... | 8 | ..... | 10 | ..... | ..... | 1.142 | 29.0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.16 | 740.7 | 29.67 | 753.7 | 53.4 | 11.9 | ..... | NE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.673 | 17.1 | ..... | Prof. Schiaparelli. |
| Moncalieri | 28.76 | 730.4 | 29.65 | 753.2 | 46.2 | 7.9 | 91 | NNW | 6.9 | 3.1 | ..... | ..... | 10 | SE | ..... | 0.894 | 22.7 | ..... | Prof. P. F. Denza. |
| Mondovi | 27.72 | 705.4 | 29.67 | 753.6 | 39.6 | 4.2 | 92 | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 1.177 | 29.9 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.35 | 745.5 | 29.57 | 751.1 | 53.1 | 11.7 | 83 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 1.146 | 29.1 | ..... | Prof. L. Vassallo. |
| Genoa | 29.42 | 747.3 | 29.59 | 751.6 | 54.3 | 12.4 | 85 | E | 8.7 | 3.9 | ..... | ..... | 10 | SE | ..... | 1.516 | 38.5 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.35 | 745.4 | 29.66 | 753.4 | 53.2 | 11.8 | 90 | E | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0.780 | 19.8 | ..... | Prof. P. Pigorini. |
| Florence | 29.35 | 745.6 | 29.61 | 752 0 | 64.4 | 18.0 | 59 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.051 | 1.3 | ..... | Cav. F Meucci. |
| Leghorn | 29.56 | 750.9 | 29.65 | 753.0 | 60.8 | 16.0 | 70 | S | 14.3 | 6.4 | ..... | ..... | 10 | SW | ..... | 0.185 | 4.7 | ..... | Prof. P. Monte. |
| Pesaro | 29.65 | 753.2 | 29.70 | 754.4 | 59.7 | 15.4 | 86 | E | 9.4 | 4.2 | ..... | ..... | 10 | SW | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.16 | 715.3 | 29.70 | 754.3 | 59.9 | 15.5 | 63 | SSW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.54 | 750.4 | 29.65 | 753.2 | 55.2 | 12.9 | 68 | SSE | ..... | ..... | 6 | ..... | 10 | SE | ..... | 0.008 | 0.2 | ..... | Avv. P. Ponticelli. |
| Rome | 29.58 | 751.4 | 29.76 | 755.8 | 65.3 | 18.5 | 45 | S | 17.4 | 7.8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. G. S. Ferrar |
| Naples, O. U | 29.66 | 753.4 | 29.86 | 758.4 | 69.8 | 21.0 | 47 | S | ..... | ..... | 2 | ..... | 10 | SW | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 69.4 | 20.8 | 65 | WSW | 7.4 | 3.3 | ..... | ..... | 3 | W | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.46 | 748.3 | 29.65 | 753.2 | 68.9 | 20.5 | 54 | NW | ..... | ..... | 2 | ..... | 10 | SW | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.01 | 736.9 | 29.89 | 759.1 | 70.7 | 21.5 | 72 | SW | 1.3 | 0.6 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.50 | 749.4 | 29.76 | 755.8 | 73.9 | 23.3 | 20 | SW | 18.1 | 8.1 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.76 | 756.0 | 29.84 | 757 9 | 68.5 | 20.3 | 62 | SW | ..... | ..... | 6 | ..... | 8 | SW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.30 | 744.2 | 29.85 | 758.3 | 64.4 | 18.0 | 64 | ESE | 0 | 0 | ..... | ..... | 7 | S | ..... | 0.028 | 0.7 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nagasaki | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Tokei (Yeddo) | 29.98 | 761.5 | 30.04 | 763.0 | 53.4 | 11.9 | 81 | SE | 3.0 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | The Observatory. |
| Tokei (Yeddo) University | 29.94 | 760.5 | 30.04 | 762.9 | 53 | 11.7 | 64 | NNE | 2 | 0.9 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear | Prof. P. V. Veeder. |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 68.0 | 20.0 | 36 | N | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | L. Castillo, A. E. |
| Guadalajara | 25.05 | 636.2 | 30.08 | 764.0 | 50.9 | 10.5 | 45 | S | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | Prof. L. Perez. |
| Guanajuato | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 60.4 | 15.8 | 42 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | Prof. M. Leal. |
| Mexico | 23.12 | 587.2 | 30.10 | 764.5 | 62.6 | 17.0 | 36 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 51.3 | 10.7 | 33 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | M. V. de Leon, M. E. |
| Puebla | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 30.04 | 763.0 | 30.05 | 763.3 | 73.4 | 23.0 | 74 | Calm | 0 | 0 | ..... | 5cs | 5k | W | ..... | 0 | 0 | Cloudy | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 30.02 | 762.4 | 30.05 | 763.1 | 75.2 | 24 0 | 76 | NW | 1.8 | 0.8 | ..... | 4c | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 48.2 | 9.0 | 37 | SW | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.35 | 590.7 | 29.99 | 761.8 | 57.2 | 14.0 | 60 | NNE | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | P. Spina. [M.M. D. D |
| Morelia | 24.02 | 610.0 | ..... | ..... | 59.0 | 15.0 | 55 | Calm | 0 | 0 | ..... | 0 | 1 | ..... | W | 0 | 0 | Very hazy | M. Tena, F. L. Param. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.57 | 751.1 | 29.57 | 751.1 | 62.6 | 17.0 | ..... | NE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.039 | 1.0 | ..... | |
| Groningen | 29.62 | 752.3 | 29.67 | 753.7 | 61.7 | 16.5 | ..... | E | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 29.64 | 752 8 | 29.64 | 752.8 | 54.0 | 12.2 | ..... | NE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 29.56 | 750.9 | 29.56 | 750.9 | 63.5 | 17.5 | 59 | ENE | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.54 | 750.2 | 29.58 | 751.4 | 63.9 | 17.7 | 47 | ENE | ..... | ..... | [4 | ..... | 2 | ..... | ..... | 0 | 0 | Light cloudy | H. v d Brink. |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.00 | 762.1 | 30.06 | 763.5 | 55.8 | 13.2 | 39 | NNW | 13.2 | 5.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.94 | 760.4 | 29.98 | 761.4 | 42.4 | 5.8 | 94 | SSW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light rain | |
| Christiania | 29.85 | 758.3 | 30.00 | 762.0 | 58.6 | 14.8 | 36 | SW | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.80 | 757.0 | 29.85 | 758.1 | 33.1 | 0.6 | 89 | SW | 9 | 4 | ..... | ..... | 10 | ..... | ..... | 0.118 | 3.0 | Snowing | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.82 | 757.3 | 30.01 | 762.2 | 58.8 | 14.9 | 89 | S | 4.9 | 2.2 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.80 | 731.4 | 29.82 | 757.4 | 62.1 | 16.7 | 55 | W | 18.6 | 8.3 | ..... | ..... | 8 | W | ..... | 0.047 | 1.2 | Raining | Dr. A. M. R. dos Santos |
| Funchal, (Madeira) | 29.95 | 760.7 | 30.04 | 762.9 | 68.0 | 20.0 | 70 | SW | 3.8 | 1.7 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.51 | 749.6 | 29.87 | 758.7 | 60.4 | 15.8 | 59 | W | 13.1 | 7.2 | ..... | ..... | 8 | ..... | ..... | 0.008 | 0.2 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 29.97 | 761.3 | 30.04 | 763.1 | 62.6 | 17.0 | 73 | SSE | 6.3 | 2.8 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.96 | 761.0 | 29.97 | 761.2 | 83.3 | 28.5 | ..... | S | ..... | ..... | 5 | ..... | 7 | ..... | S | 2 | ..... | Showery | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Rio Douro, S. 25° 58′, E. 32° 37′ | ..... | ..... | 30.32 | 770.2 | 74.3 | 23.5 | ..... | ESE | ..... | ..... | 4 | ..... | 6 | ..... | ESE | 3 | ESE | D. clouds | J. T. d'Oliveria, Com'd't. |
| Sado, Porto Praya, Cape Verde Islands. | 29.94* | 760.5* | 29.95* | 760.8* | 80.6 | 27.0 | ..... | SSW | ..... | ..... | 2 | ..... | 6 | ..... | SSW | 2 | SSW | D. clouds | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, S. 10° 6′ 4″, E. 12° 19′ | 25.76 | 755.9 | 29.76 | 756.0 | ..... | ..... | ..... | SW | ..... | ..... | 1 | ..... | 2 | ..... | SW | 2 | ..... | D. clouds | F. Texeira da Silva, Com'd't. |
| Tejo, N. 22° 10′ E. 113° 32′ | ..... | ..... | 30.03 | 762.7 | 77.0 | 25.0 | ..... | E | ..... | ..... | 1 | ..... | 1c | ..... | E | 0 | ..... | ..... | F. J. Ferreira, dos Amas, Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.59 | 751.5 | 30.01 | 762.2 | 55.4 | 13.0 | 36 | SE | 18 | 8 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.72 | 754.9 | 30.14 | 765.6 | 55.2 | 12.9 | 33 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 29.83 | 757.6 | 30.07 | 763.8 | 55.0 | 12.8 | 39 | WSW | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.94 | 760.5 | 29.96 | 760.9 | 43.0 | 6.1 | 74 | NW | 25 | 11 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.52 | 749.9 | 29.85 | 758.1 | 52.0 | 11.1 | 67 | NW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ch. Forsten. |
| Kieff | 29.50 | 749.3 | 30.15 | 765.7 | 46.4 | 8.5 | 47 | ENE | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.95 | 760.8 | 30.02 | 762.6 | 50.7 | 10.4 | 31 | NE | 31 | 14 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Light clouds | Kurdakof. |
| Kertch | 29.72 | 755.0 | 29.74 | 755.5 | 45.7 | 7.6 | 72 | ENE | 18 | 8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.46 | 748.3 | 30.01 | 762.2 | 56.7 | 13.7 | 40 | S | 7 | 3 | ..... | ..... | 4ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.76 | 756.0 | 29.97 | 761.2 | 48.0 | 8.9 | 33 | ESE | 13 | 6 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Archangel | 29.92 | 759.9 | 29.94 | 760.4 | 24.4 | — 4.2 | 73 | NNW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.59 | 726.1 | 30.03 | 762.7 | 47.3 | 8.5 | 86 | SE | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Physical Observatory |
| Astrakhan | 30.27 | 768.9 | 30.19 | 766.8 | 40.8 | 4.9 | 45 | ESE | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Krotkowo* | 29.37 | 745.9 | 29.84 | 758 0 | 45.7 | 7.6 | 60 | W | 11 | 5 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | Light clouds | Cand. Fatjanow. |
| Kasan | 29.46 | 748.3 | 29.74 | 755.3 | 41.2 | 5.1 | 54 | W | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.41 | 721.6 | 29.36 | 745.8 | 35.6 | 2 0 | 35 | NW | 27 | 12 | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.97 | 761.2 | 30.21 | 767.3 | 40.3 | 4.6 | 49 | NNE | 20 | 9 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.48 | 723.4 | 30.15 | 765.8 | 68.7 | 20 4 | 51 | NW | 7 | 3 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.04 | 737.5 | 29.54 | 750.2 | 64.6 | 18.1 | 26 | S | 4 | 2 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Yeniseisk | 29.32 | 744.8 | 29.63 | 752.7 | 56.3 | 13.5 | 55 | SE | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 30.07 | 763.8 | 30.21 | 767.4 | 63.1 | 17.3 | 35 | SE | 7 | 3 | ..... | ..... | 6ks | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.95 | 710.0 | 30.05 | 763.3 | 38.5 | 3.6 | 51 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.97 | 761.2 | 30.07 | 763.7 | 39.0 | 3.9 | 92 | SE | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 31.6 | — 0.2 | 66 | Calm | 0 | 0 | ..... | ..... | 3ck | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.47 | 748.5 | 29.57 | 751.1 | 70.2 | 21.2 | 35 | WSW | 6.5 | 2.92 | ..... | 0 | 2k | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.55 | 750.6 | 29.61 | 752.0 | 62.4 | 16.9 | 71 | NW | 2.0 | 0.90 | ..... | 2 | 8 | E | ..... | 0.118 | 3.0 | Raining | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.67 | 677.4 | ..... | ..... | 56.1 | 13.4 | 93 | SW | 17.0 | 7.58 | ..... | ..... | 8 | ..... | ..... | 0.181 | 4.6 | Raining | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.47 | 697.8 | 29.67 | 753.5 | 58.6 | 14.8 | 56 | W | 14.2 | 6.33 | ..... | 0 | 5 | ..... | ..... | 0.028 | 0.7 | Cloudy | The Staff. |
| Murcia, Met. Obs'y | 29.57 | 751.0 | 29.71 | 754.7 | 77.0 | 25.0 | 36 | WNW | 4.4 | 1.97 | ..... | 3 | 5 | E | ..... | 0 | 0 | Cloudy | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.76 | 730.4 | 29.65 | 753.0 | 53.4 | 11.9 | 91 | W | 5.0 | 2.22 | ..... | ..... | 10 | ..... | ..... | 0.496 | 12.6 | Rainy | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.90 | 759.5 | 29.97 | 761.2 | 76.5 | 24.7 | 74 | SE | 8.9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J. |
| San Fernando, Naval Obs'y | 29.84 | 758.0 | 29.94 | 760.5 | 64.8 | 18.2 | 63 | WSW | 17.1 | 7.6 | ..... | 0 | 8 | ..... | W | 0.036 | 0.9 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.89 | 759.2 | 29.98 | 761.5 | 79.2 | 26.2 | 84 | SE | 0 | 0 | ..... | 3c | 1k | SE | SE | 0 | 0 | Clear | Leonardo de Tejeda, Chief of Engineers. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.



Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.91 | 759.6 | 29.95 | 760.6 | 33.1 | 0.6 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.88 | 758.9 | 29.93 | 760.2 | 56.1 | 13.4 | 42 | SW | ..... | ..... | 4 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.91 | 759.7 | 29.96 | 761.0 | 61.7 | 16.5 | 27 | WSW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.81 | 757.2 | 29.99 | 761.7 | 60.1 | 15.6 | 26 | WSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 30.00 | 762.1 | 30.07 | 763.6 | 44.2 | 6.8 | 80 | WNW | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.89 | 759.1 | 29.96 | 761.0 | 63.8 | 17.4 | 34 | SSW | 7.4 | 3.3 | ..... | ..... | 0 | ..... | ..... | 0.001 | 0.02 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.15 | 715.1 | 29.59 | 751.6 | 50.0 | 10.0 | 86 | SSW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.520 | 13.2 | Raining | The Observatory. |
| Zurich | 27.92 | 709.2 | 29.54 | 750.4 | 58.3 | 14.6 | 70 | W | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0.055 | 1.4 | Cloudy | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer. —0.3 mm.; Thermometer, —3.3 cent.; Relative Humidity, +29 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.07 | 761.1 | 42.1 | 5.6 | 90 | NNW | 22 | 10.0 | ..... | ..... | 10 | ..... | ..... | 0.480 | 12.2 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.98 | 761.5 | 68.5 | 20.3 | ..... | SW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Slightly cl'dy | B. Stéfanidès. A. Bertrand. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.81 | 757.2 | 29.92 | 760.0 | 73.9 | 23.3 | 62 | SW | ..... | ..... | 4 | ..... | 7ks | ..... | SW | 0 | 0 | D. clouds | Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.09 | 761.3 | 30.16 | 766.1 | 37.1 | 2.8 | 64 | SW | 5 | 2.2 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Gloomy | Hon. J. Ferguson. |
| Brockville, Ontario | 29.51 | 749.5 | 29.81 | 757.2 | 63 | 17.2 | ..... | SE | 5 | 2.2 | ..... | ..... | 8s | ..... | SE | 0 | 0 | Cloudy | W. R. Bigg. |
| *Chatham, N. B | 30.14 | 765.5 | 30.21 | 767.3 | 35 | 1.7 | 70 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | SW | 0 | 0 | Cloudy | G. A. Blair. |
| Charlottetown, P. E. Island | 30.23 | 767.8 | 30.27 | 768.8 | 38 | 3.3 | 77 | S | 4 | 1.8 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.59 | 751.6 | 29.78 | 756.4 | 55.8 | 13.2 | 80 | NE | ..... | ..... | 1 | 3cs | 2s | W | ..... | 0.029 | 0.74 | Clearing | James Smith, M. A. |
| Dalhousie, N. B | 30.13 | 765.3 | 30.15 | 765.8 | 32.8 | 0.4 | 90 | SE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | Overcast | H. A. Johnson. |
| Esquimault, B. C | 29.81 | 757.2 | 29.86 | 758.4 | 45.3 | 7.4 | 92 | Calm | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.02 | 0.5 | Overcast | W. H. Bevis. |
| *Father Point, Quebec | 29.97 | 761.2 | 29.99 | 761.7 | 44 | 6.7 | 90 | S | 2 | 0.9 | ..... | ..... | 10n | ..... | Calm | 0 | 0 | Threatening | J. McWilliams. |
| Fredericton, N. B | 30.16 | 766.1 | 30.23 | 767.8 | 40.1 | 4.5 | 74 | Calm | 0 | 0 | ..... | 10k | 0 | S | ..... | 0.17 | 4.3 | Cloudy | Prof. Harrison. |
| *Fort Garry Manitoba | 28.80 | 731.5 | 29.63 | 752.6 | 43 | 6.1 | 100 | N | 8 | 3.6 | ..... | 5k | 5n | N | N | 0.240 | 6.10 | Light rain | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.54 | 724.9 | 29.60 | 751.8 | 59 | 15.0 | 100 | SE | ..... | ..... | 2 | ..... | 10n | ..... | ..... | 0.16 | 4.1 | Cloudy | James Grant. |
| *Halifax, N. S | 30.15 | 765.8 | 30.29 | 769.4 | 40 | 4.4 | 90 | SE | 8 | 3.6 | ..... | 5cs | 0 | ..... | ..... | 0 | 0 | Fair | F. Allison, M. A. |
| Hamilton, Ontario | 29.39 | 746.5 | 29.76 | 755.9 | 50.7 | 10.4 | 85 | S | ..... | ..... | 1 | 10cs | ..... | ..... | ..... | 0.71 | 18.0 | Cloudy | Geo. Dickson, M. A. |
| Heart's Content, N. F | 30.17 | 766.3 | 30.20 | 767.1 | 31 | — 0.6 | 93 | NW | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine | E. Weedon. |
| *Kingston, Ontario | 29.47 | 748.5 | 29.80 | 756.9 | 50 | 10.0 | 83 | S | 12 | 5.4 | ..... | 10c | 0 | Calm | ..... | 0.30 | 7.6 | Fair | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.30 | 769.6 | 30.34 | 770.6 | 36.3 | 2.4 | ..... | SW | 3 | 1.3 | ..... | 6cs | 0 | SW | ..... | 0 | 0 | Fair | C. H. Rigby. |
| *Montreal, Quebec | 29.64 | 752.8 | 29.83 | 757.7 | 55 | 12.8 | 80 | S | 20 | 8.9 | ..... | ..... | 10n | ..... | ..... | 0.02 | 0.5 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 28.93 | 734.8 | 29.60 | 751.8 | 61 | 16.1 | 88 | S | 19 | 8.5 | ..... | 5k | 5n | SW | SW | 0.20 | 5.1 | Cloudy | Rev. R. Mosley. |
| Peterboro, Ontario | 29.09 | 736.6 | 29.73 | 755.1 | 59.2 | 15.1 | 97 | Calm | ..... | ..... | ..... | ..... | 10ks | ..... | ..... | 0.12 | 3.0 | ..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.02 | 737.1 | 29.69 | 754.1 | 57 | 13.9 | 100 | E | 4 | 1.8 | ..... | ..... | 10n | ..... | S | 0.03 | 0.8 | Light rain | H. Morgan. |
| Port Hastings, N. S | 30.27 | 768.8 | 30.32 | 770.1 | 32.6 | 0.3 | ..... | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fine | Peter Grant. |
| Port Stanley, Ontario | 29.03 | 737.3 | 29.66 | 753.4 | 55 | 12.8 | 89 | E | 20 | 8.9 | ..... | ..... | 10n | ..... | SW | 0.04 | 1.0 | Light rain | M. Payne. |
| *Quebec, Quebec | 29.60 | 751.8 | 29.93 | 760.2 | 42 | 5.6 | 87 | NE | ..... | ..... | ..... | ..... | 10n | ..... | NE | 0.07 | 1.8 | Light rain | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.21 | 741.9 | 29.66 | 753.4 | 54 | 12.2 | 93 | SE | 6 | 2.7 | ..... | ..... | 10s | ..... | SE | 0.20 | 5.1 | Cloudy | W. H. McIntyre. |
| St. Andrews, N. B | 30.14 | 765.5 | 30.20 | 767.1 | 38 | 3.3 | 90 | SE | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy | Dr. Gove. |
| St. John, N. B | 30.07 | 763.8 | 30.24 | 768.1 | 37 | 2.8 | 85 | SE | 2 | 0.9 | ..... | ..... | 10ks | ..... | ..... | 0 | 0 | Overcast | G. Murdock, C. E. |
| *Saugeen, Ontario | 28.86 | 733.0 | 29.55 | 750.6 | 62 | 16.7 | 94 | S | 14 | 6.3 | ..... | ..... | 10ks | ..... | S | 0.13 | 3.3 | Cloudy | K. Stewart. |
| Stayner, Ontario | 28.87 | 733.3 | 29.63 | 752.6 | 60 | 15.6 | 90 | SE | 8 | 3.6 | ..... | ..... | 10n | ..... | S | 0.24 | 6.1 | Light rain | R. J. Cole. |
| Stratford, Ontario | 28.37 | 720.6 | 29.61 | 752.1 | 58.9 | 14.9 | 93 | SE | 5 | 2.2 | ..... | ..... | 10s | ..... | ..... | 0.191 | 4.86 | Cloudy | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.31 | 769.9 | 30.34 | 770.6 | 40 | 4.4 | 50 | W | 5 | 2.2 | ..... | 8c | 0 | NW | ..... | 0 | 0 | Cloudy | T. C. Hill. |
| *Toronto, Ontario | 29.36 | 745.7 | 29.74 | 755.4 | 50 | 10.0 | 94 | NE | 2 | 0.9 | ..... | ..... | 10ks | ..... | SW | 0.06 | 1.5 | Cloudy | Magnetic Observatory. |
| Windsor, N. S | 30.17 | 766.3 | 30.27 | 768.8 | 42.0 | 5.6 | 91 | SE | 4 | 1.8 | ..... | ..... | 4ks | ..... | ..... | 0 | 0 | Fair | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 34.5 | 1.4 | 84 | NW | ..... | ..... | ..... | 0 | 1s | ..... | ..... | 0.01 | 0.3 | Fair | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.76 | 755 9 | 29.98 | 761.5 | 51 | 10.6 | 86 | S | 12 | 5.4 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| Alpena, Michigan | 28.84 | 732.5 | 29.46 | 748.3 | 48 | 8.9 | 100 | E | 9 | 4.0 | ..... | ..... | Fog | ..... | Calm | 0.46 | 11.7 | Foggy | |
| Atlantic City, New Jersey | 29.97 | 761.2 | 29.99 | 761.7 | 56 | 13.3 | 100 | S | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | 0.02 | 0.5 | Foggy | |
| Augusta, Georgia | 29.69 | 754.1 | 29.86 | 758.4 | 72 | 22.2 | 80 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Baltimore, Maryland | 29.89 | 759.2 | 29.92 | 760.2 | 61 | 16.1 | 94 | NE | 3 | 1.3 | ..... | 5ck | Haze | SW | Calm | 0 | 0 | Fair | |
| Barnegat, New Jersey | 29.99 | 761.7 | 30.01 | 762.2 | 53 | 11.7 | 100 | NE | 2 | 0.9 | ..... | ..... | Fog | ..... | Calm | 0.03 | 0.8 | Foggy | |
| Bismarck, Dakota | 27.93 | 709.4 | 29.79 | 756.7 | 42 | 5.6 | 66 | NW | 3 | 1.3 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear | |
| Boise City, Idaho | 27.11 | 688.6 | 29.99 | 761.7 | 48 | 8.9 | 49 | SE | 4 | 1.8 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Boston, Massachusetts | 29.94 | 760.5 | 30.09 | 764.3 | 43.5 | 6.4 | 100 | SE | 6 | 2.7 | ..... | ..... | 10n;fg | ..... | ..... | 0.32 | 8.1 | Light rain | |
| Brackettville, Texas | 28.84 | 732 5 | 29.88 | 758.9 | 49 | 9.4 | 64 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 28.60 | 726.4 | 29.58 | 751.3 | 44 | 6.7 | 84 | NW | 16 | 7.2 | ..... | ..... | 10s | ..... | NW | 0.04 | 1.0 | Cloudy | |
| Brownsville, Texas | 29.97 | 761.2 | 30.04 | 763.0 | 58 | 14.4 | 81 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 29.01 | 736.8 | 29.68 | 753.9 | 61 | 16.1 | 88 | SW | 3 | 1.3 | ..... | ..... | 10n | ..... | SW | 0.79 | 20.1 | Light rain | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 55 | 12.8 | 68 | E | ..... | ..... | 1 | 5cs | 0 | S | ..... | 0 | 0 | Fair | |
| Burlington, Vermont | 29.66 | 753.4 | 29.92 | 760.0 | 55 | 12.8 | 74 | S | 16 | 7.2 | ..... | ..... | 10s | ..... | S | 0.02 | 0.5 | Cloudy | |
| Cairo, Illinois | 29.25 | 742 9 | 29.63 | 752.6 | 56 | 13.3 | 87 | W | 24 | 10.7 | ..... | ..... | 10n | ..... | W | 1.18 | 30.0 | Light rain | |
| Camp Grant, Arizona | 25.15 | 638.8 | 29.95 | 760.7 | 48 | 8.9 | 36 | NE | ..... | ..... | 1 | 2cs | 0 | W | ..... | 0 | 0 | Fair | |
| Camp Verde, Arizona | 26.80 | 680.7 | 30.29 | 769.4 | 44 | 6.7 | 52 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27 39 | 695.7 | 29.96 | 761.0 | 44 | 6.7 | 92 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 30.07 | 763.8 | 30.08 | 764.0 | 68 | 20.0 | 90 | SE | 16 | 7.2 | ..... | 2k | 0 | SW | ..... | 0 | 0 | Fair | |
| Cape Henry, Virginia | 29.96 | 761.0 | 29.98 | 761.5 | 70 | 21.1 | 85 | S | 14 | 6.3 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Cape Lookout, N. Carolina | 30.06 | 763.5 | 30.07 | 763.8 | 67 | 19.4 | 84 | S | 20 | 8.9 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Cape May, New Jersey | 29.97 | 761.2 | 30.00 | 762.0 | 59 | 15.0 | 94 | S | 20 | 8.9 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | |
| Charleston, South Carolina | 29.95 | 760.7 | 30.01 | 762.2 | 73 | 22.8 | 81 | S | 11 | 4.9 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Cheyenne, Wyoming | 24.04 | 610.6 | 29.98 | 761.5 | 32 | 0.0 | 79 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Chicago, Illinois | 28.66 | 728.0 | 29.31 | 744.5 | 55 | 12.8 | 93 | N | 8 | 3.6 | ..... | ..... | 10n | ..... | N | 1.04 | 26.4 | Light rain | |
| Cincinnati, Ohio | 28.79 | 731.3 | 29.39 | 746.5 | 70 | 21.1 | 61 | S | 20 | 8.9 | ..... | 5cs | 5ks | S | S | 0.56 | 14.2 | Cloudy | |
| Cleveland, Ohio | 28.87 | 733.3 | 29.55 | 750.6 | 66 | 18.9 | 69 | SE | 15 | 6.7 | ..... | ..... | 10s | ..... | S | 0.04 | 1.0 | Cloudy | |
| Coleno, Texas | 28.03 | 711.9 | 29.69 | 754.1 | 56 | 13.3 | 34 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.46 | 748.3 | 29.93 | 760.2 | 53 | 11.7 | 80 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Davenport, Iowa | 28.88 | 733.5 | 29.49 | 749.0 | 51 | 10.6 | 79 | NW | 9 | 4.0 | ..... | ..... | 10s | ..... | NW | Inap. | Inap. | Cloudy | |
| Deadwood, Dakota | 25.37 | 644.4 | ..... | ..... | 41 | 5.0 | 74 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.18 | 4.6 | Clear | |
| Denison, Texas | 29.09 | 738.9 | 29.88 | 758.9 | 59 | 15.0 | 65 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Denver, Colorado | 24.83 | 630.7 | 30.05 | 763.3 | 38 | 3.3 | 63 | S | 3 | 1.3 | ..... | 5cs | 0 | NW | ..... | Inap. | Inap. | Fair | |
| Detroit, Michigan | 28.85 | 732.8 | 29.48 | 748.8 | 63 | 17.2 | 83 | SE | 9 | 4.0 | ..... | ..... | 10n | ..... | SW | 0.04 | 1.0 | Light rain | |
| Dodge City, Kansas | 27.36 | 694.9 | 29.65 | 753.1 | 45 | 7.2 | 61 | NW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 28.79 | 731.3 | 29.46 | 748.3 | 50 | 10.0 | 79 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | NW | 0.13 | 3.3 | Cloudy | |
| Duluth, Minnesota | 28.82 | 732.0 | 29.47 | 748.5 | 44 | 6.7 | 92 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.07 | 1.8 | Cloudy | |
| Eagle Pass, Texas | 29.14 | 740.1 | 29.88 | 758.9 | 48 | 8.9 | 70 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 30.12 | 765.0 | 30.19 | 766.8 | 40 | 4.4 | 91 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 63 | 17.2 | 30 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 28.96 | 735.6 | 29.63 | 752.6 | 68 | 20.0 | 79 | S | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0.15 | 3.8 | Light rain | |
| Escanaba, Michigan | 28.81 | 732.5 | 29.47 | 748.5 | 46 | 7.8 | 92 | S | 4 | 1.8 | ..... | ..... | Fog | ..... | ..... | 1.30 | 33.0 | Dense fog | |
| Florence, Arizona | 28.30 | 718.8 | 29.90 | 759.4 | 55 | 12.8 | 75 | NW | 4 | 1.8 | ..... | 8k | 0 | NW | ..... | 0 | 0 | Fair | |
| Fort Bayard, New Mexico | 24.08 | 611.6 | 30.08 | 764.0 | 46 | 7.8 | 54 | S | 4 | 1.8 | ..... | 5k | 0 | ..... | ..... | 0 | 0 | Fair | |
| Fort Craig, New Mexico | 25.51 | 647.9 | 29.57 | 751.1 | 41 | 5.0 | 49 | S | 1 | 0.4 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Fort Davis, Texas | 25.20 | 640.1 | 30.16 | 766.1 | 56 | 13.3 | 38 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.26 | 743.2 | 29.80 | 756 9 | 51 | 10.6 | 86 | SW | 2 | 0.9 | ..... | 5ck | 0 | W | ..... | 0.22 | 5.6 | Fair | |
| Fort Griffin, Texas | 28.68 | 728.5 | 29.96 | 761.0 | 49 | 9.4 | 64 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.52 | 749.8 | 29.56 | 750.8 | 8 | —13.3 | 100 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | NE | 0 | 0 | Cloudy | |
| Fort Sill, Indian Territory | 28.68 | 728.5 | 29.76 | 755.9 | 61 | 16.1 | 50 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Galveston, Texas | 29.92 | 760.0 | 29.93 | 761.0 | 65 | 18.3 | 63 | N | 22 | 9.8 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Grand Haven, Michigan | 28.73 | 729.7 | 29.34 | 745.2 | 60 | 15.6 | 100 | SE | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.24 | 6.1 | Light rain | |
| Indianapolis, Indiana | 28.59 | 726.2 | 28.31 | 744.5 | 65 | 18.3 | 78 | SE | 12 | 5.4 | ..... | 2k | 5s | SW | SW | 0.13 | 3.3 | Clearing | |
| Indianola, Texas | 28.79 | 731.3 | 29.91 | 759.7 | 54 | 12.2 | 67 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.26 | 6.6 | Clear | |
| Jacksboro, Texas | 29.26 | 743.2 | 29.80 | 756 9 | 51 | 10.6 | 86 | SE | 8 | 3.6 | ..... | ..... | 10ks | ..... | SE | 0 | 0 | Cloudy | |
| Jacksonville, Florida | 29.94 | 760.5 | 29.96 | 761.0 | 73 | 22.8 | 76 | SE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Keokuk, Iowa | 28.92 | 734.6 | 29.50 | 749.3 | 54 | 12.2 | 67 | NW | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Key West, Florida | 29.93 | 760.2 | 29.93 | 761.0 | 78 | 25.6 | 73 | SE | 20 | 8.9 | ..... | 0 | 2ks;hz | ..... | SE;Calm | 0 | 0 | Hazy | |
| Kittyhawk, North Carolina | 30.02 | 762.5 | 30.04 | 763.0 | 70 | 21.1 | 80 | S | 28 | 12.5 | ..... | 2cs | 0 | ..... | Calm | 0 | 0 | Fair | |
| Knoxville, Tennessee | 28.68 | 728.5 | 29.64 | 752.8 | 63 | 17.2 | 78 | SW | 6 | 2.7 | ..... | ..... | 10ks | ..... | SW | 0.50 | 12.7 | Cloudy | |
| La Crosse, Wisconsin | 28.77 | 730.7 | 29.48 | 748.8 | 50 | 10.0 | 79 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| La Mesilla, New Mexico | 26.04 | 661.4 | 30.19 | 766.8 | 43 | 6.1 | 48 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.60 | 751.8 | 29.94 | 760.5 | 59 | 15.0 | 48 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 28.85 | 732.8 | 29.68 | 753.9 | 49 | 9.4 | 71 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | |
| Los Angeles, California | 29.63 | 752.6 | 29.97 | 761.2 | 51 | 10.6 | 86 | N | 4 | 1.8 | ..... | 1c | 2s | Calm | W | 0 | 0 | Fair | |
| Louisville, Kentucky | 28.90 | 734.0 | 29.42 | 747.3 | 65 | 18.3 | 78 | S | 16 | 7.2 | ..... | 2k | 5s | SW | SW | 0.81 | 20.6 | Fair | |
| Lynchburg, Virginia | 29.24 | 742.7 | 29.80 | 759.2 | 69 | 20.6 | 79 | S | 6 | 2.7 | ..... | ..... | 10ks | ..... | Calm | 0.01 | 0.3 | Cloudy | |
| Marquette, Michigan | 28.78 | 731.0 | 29.46 | 748.3 | 48 | 8.9 | 78 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | SE | 0.67 | 17.0 | Cloudy | |
| Mason, Texas | 28.33 | 719.6 | 30.12 | 765.0 | 48 | 8.9 | 78 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.43 | 747.5 | 29.74 | 755 4 | 59 | 15.0 | 76 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 1.35 | 34.3 | Clear | |
| Milwaukee, Wisconsin | 28.65 | 727.7 | 29.35 | 745.5 | 49 | 9.4 | 100 | N | 12 | 5.4 | ..... | ..... | 10n;fg | ..... | ..... | 0.31 | 7.9 | Light rain | |
| Mobile, Alabama | 29.79 | 756.7 | 29.83 | 757.7 | 67.5 | 19.7 | 84 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 2.23 | 56.6 | Clear | |
| Montgomery, Alabama | 29.57 | 751.1 | 29.80 | 756.9 | 65.5 | 18.6 | 86 | SE | 5 | 2.2 | ..... | 0 | 5ks | ..... | SW | 2.17 | 55.1 | Fair | |
| Morgantown, West Virginia | 28.67 | 728.2 | 29.65 | 753.1 | 73 | 22.8 | 59 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Mt. Washington, N. H. | 23.83 | 605.3 | 30.19 | 766.8 | 43 | 6.1 | 100 | W | 24 | 10.7 | ..... | ..... | Fog | ..... | W | 0.30 | 7.6 | Foggy | |
| Nashville, Tennessee | 29.05 | 737.9 | 29.55 | 750.6 | 68 | 20.0 | 74 | SW | 8 | 3.6 | ..... | 10k | 0 | SW | ..... | 2.99 | 75.9 | Cloudy | |
| New Haven, Connecticut | 29.94 | 760.5 | 30.06 | 763.5 | 49 | 9.4 | 93 | NE | 5 | 2.2 | ..... | ..... | Fog | ..... | ..... | 0.04 | 1.0 | Foggy | |
| New London, Connecticut | 30.03 | 762.7 | 30.08 | 764.0 | 48 | 8.9 | 100 | E | 5 | 2.2 | ..... | ..... | 10s;fg | ..... | Calm | Inap. | Inap. | Dense fog | |
| New Orleans, Louisiana | 29.78 | 756.4 | 29.81 | 757.9 | 66 | 18.9 | 74 | W | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0.77 | 19.6 | Clear | |
| Newport, Rhode Island | 30.01 | 762.2 | 30.06 | 763.5 | 48 | 8.9 | 100 | E | 6 | 2.7 | ..... | ..... | Fog | ..... | ..... | Inap. | Inap. | Dense fog | |
| New York, New York | 29.87 | 758.7 | 30.05 | 763.3 | 48 | 8.9 | 93 | NE | 12 | 5.4 | ..... | ..... | Fog | ..... | Calm | Inap. | Inap. | Foggy | |
| Norfolk, Virginia | 29.95 | 760.7 | 30.01 | 762.2 | 73 | 22.8 | 81 | S | 11 | 4.9 | ..... | 10k | 0 | S | ..... | 0 | 0 | Cloudy | |
| North Platte, Nebraska | 27.00 | 685.8 | 29.59 | 751.6 | 39 | 3.9 | 77 | NW | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 29.86 | 758.4 | 29.89 | 759.2 | 44 | 6.7 | 92 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| Omaha, Nebraska | 28.56 | 725.4 | 29.62 | 752.3 | 48 | 8.9 | 70 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Oswego, New York | 29.49 | 749.0 | 29.80 | 756.9 | 60 | 15.6 | 77 | S | 12 | 5.4 | ..... | 8c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Pembina, Dakota | 28.77 | 730.7 | 29.59 | 751.6 | 42 | 5.6 | 83 | NW | 18 | 8.0 | ..... | ..... | 10s | ..... | NW | 0.24 | 6.1 | Cloudy | |
| Philadelphia, Pennsylvania | 29.96 | 761.0 | 30.01 | 762.2 | 50 | 10.0 | 100 | E | 10 | 4.5 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Phœnix, Arizona | 28.75 | 730.2 | 30.55 | 776.0 | 53 | 11.7 | 67 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.65 | 448.3 | 29.86 | 758.4 | 8 | —13.3 | 55 | N | 6 | 2.7 | ..... | 5k | 0 | N | ..... | 0.08 | 2.0 | Fair | |
| Pioche, Nevada | 24.05 | 610.9 | 29.82 | 757.4 | 36 | 2.2 | 80 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 28.88 | 733.5 | 29.64 | 752.8 | 69 | 20.6 | 70 | SE | 5 | 2.2 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Port Huron, Michigan | 28.85 | 732.8 | 29.48 | 748.8 | 62 | 16.7 | 88 | SE | 12 | 5.4 | ..... | ..... | 10ks | ..... | SE | 0.23 | 5.8 | Cloudy | |
| Portland, Maine | 30.05 | 763.3 | 30.10 | 764.5 | 48 | 8.9 | 93 | E | 8 | 3.6 | ..... | ..... | Fog | ..... | ..... | 0.03 | 0.8 | Dense fog | |
| Portland, Oregon | 29.90 | 759.4 | 30.00 | 762.0 | 48 | 8.9 | 77 | SE | 4 | 1.8 | ..... | ..... | 10ks | ..... | S | 6 | 0 | Cloudy | |
| Prescott, Arizona | 24.75 | 628.6 | 30.11 | 764.8 | 37 | 2.8 | 81 | SW | 1 | 0.4 | ..... | 5cs | 2ks | S | SW | 0 | 0 | Fair | |
| Punta Rassa, Florida | 29.98 | 761.5 | 30.00 | 762.0 | 76 | 24.4 | 77 | SE | 20 | 8.9 | ..... | 8c;k | 0 | W;SE | ..... | 0 | 0 | Fair | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Red Bluff, California | 29.61 | 752.1 | 29.97 | 761.2 | 57 | 13.9 | 87 | SW | 4 | 1.8 | .. | 2k | 0 | S | | 0 | 0 | Clear | |
| Rochester, New York | 29.14 | 740.1 | 29.72 | 754.9 | 68 | 20.0 | 74 | SW | 6 | 2.7 | | 5k | Haze | SW | Calm | 0.03 | 0.8 | Fair | |
| Roseburg, Oregon | 29.46 | 748.3 | 30.04 | 763.0 | 47 | 8.3 | 77 | SW | 1 | 0.4 | | | 10s | | Calm | 0 | 0 | Cloudy. | |
| Sacramento, California | 29.90 | 759.4 | 29.98 | 761.5 | 51 | 10.6 | 86 | S | 4 | 1.8 | | 1c | 0 | S | | 0 | 0 | Clear. | |
| St. Louis, Missouri | 29.00 | 736.6 | 29.56 | 750.8 | 53 | 11.7 | 80 | W | 16 | 7.2 | | | 10s | | Calm | 0.43 | 10.9 | Cloudy | |
| St. Marks, Florida | 29.81 | 757.2 | 29.83 | 757.7 | 73 | 22.8 | 85 | S | 28 | 12.5 | | | 10s | | S | 0 | 0 | Cloudy | |
| St. Paul, Minnesota | 28.68 | 728.5 | 29.48 | 748.8 | 47 | 8.3 | 85 | NW | 6 | 2.7 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Salt Lake City, Utah | 25.68 | 652.3 | 30.01 | 762.2 | 43 | 6.1 | 59 | E | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| San Antonio, Texas | 29.28 | 743.7 | 29.87 | 758.7 | 53 | 11.7 | 80 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| San Diego, California | 29.96 | 761.0 | 30.03 | 762.7 | 54 | 12.2 | 87 | Calm | 0 | 0 | | | 10s | | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 28.87 | 733.3 | 29.50 | 749.3 | 66 | 18.9 | 79 | S | 16 | 7.2 | | | 10ks | | S | 0.01 | 0.3 | Cloudy | |
| Sandy Hook, New Jersey | 30.01 | 762.2 | 30.04 | 763.0 | 49 | 9.4 | 100 | E | 21 | 9.4 | | | Fog | | E | 0 | 0 | Foggy | |
| San Francisco, California | 29.98 | 761.5 | 30.04 | 763.0 | 51 | 10.6 | 79 | W | 6 | 2.7 | | 0 | 0 | | | 0 | 0 | Clear | |
| Santa Fé, New Mexico | 23.28 | 591.3 | 29.82 | 757.4 | 32 | 0.0 | 50 | NE | 1 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | |
| Savannah, Georgia | 29.87 | 758.7 | 29.96 | 761.0 | 74 | 23.3 | 81 | S | 12 | 5.4 | | | 10s | | S | 0 | 0 | Cloudy | |
| Shreveport, Louisiana | 29.69 | 754.1 | 29.90 | 759.4 | 60 | 15.6 | 76 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Smithville, North Carolina | 30.01 | 762.2 | 30.05 | 763.3 | 71 | 21.7 | 85 | S | 12 | 5.4 | | 10cs | 0 | W | | 0 | 0 | Cloudy | |
| Springfield, Massachusetts | 29.88 | 758.9 | 30.01 | 762.2 | 50 | 10.0 | 79 | NE | 2 | 0.9 | | | 10s | | NE | 0.02 | 0.5 | Cloudy | |
| Stockton, Texas | 26.93 | 684.0 | 29.93 | 760.2 | 48 | 8.9 | 42 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 30.04 | 763.0 | 30.10 | 764.5 | 47 | 8.3 | 92 | SE | 8 | 3.6 | | | Fog | | SE | 0.22 | 5.6 | Dense fog | |
| Toledo, Ohio, | 28.79 | 731.3 | 29.42 | 747.3 | 64 | 17.8 | 83 | SE | 10 | 4.5 | | | 10s | | SE | 0.01 | 0.3 | Cloudy | |
| Tucson, Arizona | | | | | 48 | 8.9 | 71 | NW | | | 1 | 2cs | 0 | Calm | | 0 | 0 | Fair | |
| Tybee Island, Georgia | 29.93 | 760.2 | 29.96 | 761.0 | 71 | 21.7 | 95 | S | 12 | 5.4 | | | 10ks | | S | 0 | 0 | Cloudy | |
| Umatilla, Oregon | 29.61 | 752.1 | | | 39 | 3.9 | 82 | SE | 8 | 3.6 | | | 8s | | Calm | 0 | 0 | Cloudy. | |
| Vicksburg, Mississippi | 29.59 | 751.6 | 29.85 | 758.2 | 60 | 15.6 | 88 | NW | 11 | 4.9 | | 0 | 0 | | | 2.63 | 66.8 | Clear | |
| Virginia City, Montana | 24.27 | 616.4 | 29.75 | 755.6 | 35 | 1.7 | 61 | SE | 4 | 1.8 | | 0 | 0 | | | 0 | 0 | Clear | |
| Visalia, California | 29.62 | 752.3 | 29.99 | 761.7 | 54 | 12.2 | 93 | NW | 1 | 0.4 | | 1c | 0 | Calm | | 0 | 0 | Clear | |
| Washington, D. C | 29.83 | 757.7 | 29.94 | 760.5 | 71 | 21.7 | 80 | S | 14 | 6.3 | | | 10ks | | SW | 0 | 0 | Threatening | |
| Wickenburg, Arizona | | | | | 49 | 9.4 | 71 | S | | | 1 | 8ck | 0 | Calm | | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 29.94 | 760.5 | 30.02 | 762.5 | 72 | 22.2 | 80 | S | 11 | 4.9 | | 8ck | 0 | S | | 0 | 0 | Fair | |
| Winnemucca, Nevada | 25.60 | 650.2 | 29.96 | 761.0 | 33 | 0.6 | 70 | NE | 3 | 1.3 | | 2c | 0 | Calm | | 0 | 0 | Clear | |
| Wood's Holl, Mass | 30.01 | 762.2 | 30.07 | 763.8 | 48 | 8.9 | 85 | SE | 9 | 4.0 | | | Fog | | Calm | 0 | 0 | Dense fog | |
| Yankton, Dakota | 28.43 | 722.1 | 29.71 | 754.6 | 44 | 6.7 | 96 | NW | 16 | 7.2 | | 0 | 0 | | | Inap. | Inap. | Clear | |
| Yuma, Arizona | 29.75 | 755.6 | 29.92 | 760.0 | 56 | 13.3 | 68 | Calm | 0 | 0 | | 2c | 5ks | Calm | Calm | 0 | 0 | Fair | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Paul's Island, Alaska | | | | | | | | | | | | | | | | | | | |
| York Factory, B. A. | 29.70 | 754.4 | 29.76 | 755.9 | 31.0 | — 0.6 | 100 | N | 13 | 5.8 | | | 10s | | | 0.01 | 0.3 | Snowing | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 29.91 | 759.7 | 29.93 | 760.2 | 76 | 24.4 | 72 | SE | 10.8 | 4.8 | | 0 | 0 | | | 0 | 0 | Clear | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.15 | 765.8 | 30.16 | 766.1 | 79 | 26.1 | 86 | Calm | 0 | 0 | | 8c | 5s | Calm | | 0 | 0 | | James Gall. |
| Navassa, W. I. | 29.89 | 759.2 | 29.97 | 761.2 | 81 | 27.2 | | E | 8 | 3.6 | | | | | | 0 | 0 | Fair | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | 29.96 | 761.0 | 29.96 | 761.0 | 83 | 28.3 | 79 | NE | | | 2 | 5k | 7ks | E | | 0 | 0 | ½ cloudy | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | | | | | | | | | | | | | | | | | | | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.23 | 640.8 | | | 67.5 | 19.7 | 88 | Calm | | | 0 | | 10s;ks | | | 1.08 | 27.4 | | Thomas Herran. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medillin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m., Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er (—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.95 | 760.7 | 53 | 11.7 | 50 | 10.0 | 86 | SW | 12 | 5.4 | ..... | ..... | 5 | ..... | S | 0 | 0 | ..... | ..... | Fair..... | |
| Navy Yard, Pensacola, Fla. | 29.93 | 760.2 | 68 | 20.0 | 68 | 20.0 | 95 | W | 2 | 0.9 | ..... | ..... | 2 | ..... | ..... | 1.67 | 42.4 | ..... | ..... | Clear..... | |
| Navy Yard, Portsmouth, N.H. | 30.16 | 766.1 | 73 | 22.8 | 46 | 7.8 | 92 | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Foggy ..... | |
| Naval Hospital, Yokohama, Japan..... | 29.99* | 761.7* | 60 | 15.6 | 55.5 | 13.1 | 63 | W | ..... | ..... | 1 | ..... | Haze | ..... | Calm | 0 | 0 | ..... | ..... | Fair ..... | |
| Adams, Panama..... | 29.98 | 761.5 | 82 | 27.8 | 80 | 26.7 | 91 | WNW | ..... | ..... | 2 | ..... | 8 | ..... | NW | ..... | ..... | Smooth | ..... | Fair..... | |
| Alliance, Villefranche, France..... | 29.56‡ | 750.8‡ | ..... | ..... | 66 | 18.9 | 87 | SE | ..... | ..... | 0–1 | ..... | 3 | ..... | SE | ..... | ..... | Light | S | Pleasant..... | |
| Ashuelot, Nagasaki, Japan..... | 30.19 | 766.8 | 64 | 17.8 | 61 | 16.1 | 88 | NNE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Canonicus, New Orleans, La..... | 29.86 | 758.4 | 49 | 9.4 | 65 | 18.3 | 89 | W | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Colorado, New York, N. Y..... | 30.01‡ | 762.2‡ | ..... | ..... | 50 | 10 0 | 93 | NE | 2 | 0.9 | ..... | ..... | 10 | ..... | NE | 0.01 | 0.3 | ..... | ..... | Foggy ..... | |
| Constellation, Havre, France..... | 29.63‡ | 752.6‡ | ..... | ..... | 60 | 15.6 | 76 | SW | ..... | ..... | 1 | ..... | 8 | ..... | SW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Constitution, Havre, France..... | 29.50‡ | 749.3‡ | ..... | ..... | 62 | 16.7 | 77 | WNW | ..... | ..... | 2 | ..... | 8 | ..... | SE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Despatch, Constantinople, Turkey. | 29.93‡ | 760.2‡ | ..... | ..... | 44 | 6.7 | 92 | NE | ..... | ..... | 5 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Rain-squalls | |
| Franklin, Norfolk, Va..... | 30.14 | 765 5 | 74 | 23.3 | 76 | 24.4 | 60 | S | 11 | 4.9 | ..... | ..... | 8 | ..... | SSW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Gettysburg Valetta, Malta..... | 29.90‡ | 759.4‡ | ..... | ..... | 77 | 25.0 | 91 | SSW | ..... | ..... | 3 | ..... | 5 | ..... | SW | 0 | 0 | ..... | ..... | Fair..... | |
| Guard, Porto Grande, Cape Verde Islands. | 29.97 | 761.2 | 75 | 23.9 | 75 | 23.9 | 72 | NE | ..... | ..... | 3 | ..... | 2 | ..... | NE | ..... | ..... | Ground | NW | Clear. ..... | |
| Hartford, Montevideo, Uraguay .... | 29.98 | 761.5 | 68 | 20.0 | 67 | 19.4 | 89 | N | 10 | 4.5 | ..... | ..... | 5 | ..... | NW | 0 | 0 | Smooth | ..... | Fair ..... | |
| Marion, Smyrna, Turkey..... | 29.94 | 760.5 | 61 | 16.1 | 58 | 14.4 | 69 | NW | ..... | ..... | 2 | ..... | 10 | ..... | NW | Heavy | Heavy | Smooth | ..... | Cloudy..... | |
| Michigan, Erie, Pa..... | 29.19 | 741.4 | 74 | 23.3 | 65 | 18.3 | 84 | E | ..... | ..... | 2 | ..... | 10 | ..... | E | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monocacy, Shanghai, China..... | 30.12‡ | 765.0‡ | ..... | ..... | 64 | 17.8 | 94 | SSE | ..... | ..... | 0–1 | ..... | 2 | ..... | SE | ..... | ..... | ..... | ..... | Fair ..... | |
| New Hampshire, Port Royal, S. C..... | 30.30† | 769.6† | ..... | ..... | 72 | 22.2 | 95 | SE | 25 | 11.2 | ..... | ..... | 10 | ..... | NW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Omaha, N. 38° 40′, W. 73° 40′..... | 30.10* | 764.5* | 59 | 15.0 | 56 | 13.3 | 94 | SSW | 5 | 2.2 | ..... | ..... | 2 | ..... | SSW | 0 | 0 | Smooth | ..... | Bright..... | |
| Onward, Callao, Peru ..... | 30.06† | 763.5† | ..... | ..... | 64 | 17.8 | ?? | SE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Foggy ..... | |
| Ossipee, N. 28° 08′ W. 79° 49′..... | 30.05‡ | 763.3‡ | ..... | ..... | 76 | 24.4 | 77 | ESE | ..... | ..... | 5 | ..... | 8 | ..... | S | ..... | ..... | Rough | E | Cloudy..... | |
| Palos, Shanghai, China..... | 30.17* | 766.3* | 69 | 20.6 | 58 | 14.4 | 76 | ESE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Pensacola, N. 38° 10′, W. 128° 20′..... | 30.20 | 767.1 | 58 | 14.4 | 53 | 11.7 | 86 | NW | 17 | 7.6 | ..... | ..... | 4 | ..... | ..... | 0.03 | 0.8 | Smooth | NW | Drizzling..... | |
| Plymouth, N. 31° 01′ W. 70° 10′..... | 30.19‡ | 766.8‡ | ..... | ..... | 68 | 20.0 | 79 | ESE | ..... | ..... | 3 | ..... | 2 | ..... | ESE | ..... | ..... | Smooth | ..... | Clear..... | |
| Powhatan, Norfolk, Va..... | 29.78‡? | 756.4‡? | ..... | ..... | 62 | 16.7 | 100 | SE | 12.9 | 5.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Ranger, Amoy, China..... | 30.21* | 767.3* | ..... | ..... | 69 | 20.6 | 80 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | ..... | ..... | Smooth | ..... | Blue sky..... | |
| Rio Bravo, Brownsville, Texas..... | 29.95 | 760.7 | 60 | 15.6 | 58 | 14.4 | 94 | NNW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Santee, Annapolis, Md..... | 29.96‡ | 761.0‡ | ..... | ..... | 67 | 19.4 | 84 | S | ..... | ..... | 4 | ..... | 8 | ..... | SW | ..... | ..... | ..... | ..... | Hazy..... | |
| Saratoga, Washington, D. C..... | 29.85 | 758.2 | 72 | 22.2 | 72 | 22.2 | 90 | SW | ..... | ..... | 3 | ..... | 10 | ..... | N&E | 0 | 0 | ..... | ..... | Cloudy..... | |
| St. Louis, League Island, Pa ..... | 29.97 | 761.2 | 65 | 18.3 | 55 | 12.8 | 70 | NE | 9 | 4.0 | ..... | ..... | 10 | ..... | NE | 0 | 0 | ..... | ..... | Foggy ..... | |
| Supply, Havre, France..... | 29.58 | 751.3 | 60 | 15.6 | 62 | 16.7 | 66 | NNW | ..... | ..... | 1 | ..... | 5 | ..... | NW | ..... | ..... | ..... | ..... | Fair ..... | |
| Swatara, Key West, Fla ..... | 29.95‡ | 760.7‡ | ..... | ..... | 77 | 25.0 | 86 | SE | ..... | ..... | 6 | ..... | 2 | ..... | S&E | ..... | ..... | ..... | ..... | Clear..... | |
| Tennessee, Suez Canal..... | 29.97* | 761.2* | 88 | 31.1 | 88 | 31.1 | 16 | WNW | 3 | 1.3 | ..... | ..... | 1 | ..... | NNE | 0 | 0 | ..... | ..... | D. clouds..... | |
| Trenton, Villefranche, France ..... | 29.56‡ | 750.8‡ | ..... | ..... | 59 | 15.0 | 94 | ESE | ..... | ..... | 1 | ..... | 8 | ..... | W | 1.0 | 25. | ..... | ..... | Clearing..... | |
| Tuscarora, N. 16° 21′, W. 98° 37′... ... | 29.82 | 757.4 | 76 | 24.4 | 76 | 24.4 | 82 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Long | WSW | Misty&Hazy | |
| Vandalia, N. 42° 40′, E. 10° 07′..... | 29.72‡ | 754.9‡ | ..... | ..... | 61 | 16.1 | 82 | SSE | ..... | ..... | 4 | ..... | 10 | ..... | SSE | ..... | ..... | Mod'ate | SSE | Raining..... | |
| Wabash, Boston, Mass..... | 30.08‡ | 764.0‡ | ..... | ..... | 45 | 7.2 | 100 | SE | 10 | 4.5 | ..... | ..... | 10 | ..... | ..... | 0.46 | 11.7 | ..... | ..... | Light rain.. | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Anerold Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable; the position given is that at noon, local time, instead of that at 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | Character. | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Peking, Yokohama, Japan | | | 30.01 | 762.2 | 55 | 12.8 | 100 | N | 14.0 | 6.3 | | | 10 | | N | Smooth | Calm | Overcast | Capt. Dearborn. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | Capt. Searle. |
| S. S. Colima, N. 24° 47′, W. 112° 30′ | | | 29.98† | 761.5† | 63 | 17.2 | 94 | NW | | | 2 | | 4 | | Calm | Mod'ate | WNW | Misty | Capt. Whitebury. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Austin. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. †Aneroid.

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| **WHITE STAR LINE MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York. | | | | | | | | | | | | | | | | | | | |
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. W. H. Thompson. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic | | | | | | | | | | | | | | | | | | | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4.

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| **OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary. | | | | | | | | | | | | | | | | | | | |
| S. S. Belgic, N. 36° 50′, W. 140° 08′ | | | 30.36* | 771.1* | | | | W | | | 5 | | n | | W | Turbulent. | W | | Capt. John Metcalf. |
| S. S. Gaelic, N. 41° 03′, E. 157° 44′ | | | 29.67† | 753.6† | 47 | 8.3 | ?? | NW | | | 6 | | k | | NW | High | W | D. clouds | Capt. W. H. Kidley |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

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| **NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of A. Schumacher & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig, N. 48° 47′, W. 20° 59′ | | | 30.04 | 763.0 | 59.5 | 15.3 | 71 | NNE | | | 2 | | 10 | | S | Little rough. | NE | Clearing | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | Force. | Clouds. | | | | Sea-swell. | | Weather. | Obser |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | Character | Direction From— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, Philadelphia, Pa | | | 29.99* | 761.7* | 52 | 11.1 | 100 | ENE | | | 7 | | 8 | | ENE | | | Hazy | Captain Sargent. |
| S. S. Ohio, N. 45° 47′, W. 33° 17′ | | | 29.60 | 751.8 | 51.3 | 10.7 | 86 | WSW | | | 4 | | 5? | | WSW | Mod'ate | WNW | Clear? | Captain Morrison. |
| S. S. Pennsylvania, Liverpool | | | 29.72† | 754.9† | 61 | 16.1 | 94 | NE | | | 6 | | 2 | | NE | | | Clear | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for elevation; instrumental error not known. †Corrected for temperature and elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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**ALLAN LINE MARINE SERIES.**

Furnished by the coöperation of A. Schumacher, & Co., Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| S. S. Scandinavian, Off Chebucto Head, N. S | | | 30.34 | 770.6 | 38 | 3.3 | | ESE | | | 2 | | 3c | | S? | Smooth | | D. clouds | Capt. W. Richardson. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES.** (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, St. John, N. B | | | 30.11 | 764.8 | 44 | 6.7 | 68 | E | | | | | 10s | | | | | Overcast | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.71 | 754.6 | 18 | — 7.8 | 89 | Calm | 0 | 0 | | 6c | 0 | | | | | Clear | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assq^d.,) Chief Signal Officer, U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 25, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

## ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.02 | 762.4 | 64.8 | 18.2 | 81 | NE | ..... | ..... | 5 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Dr. Ollive. |
| Nemours | ..... | ..... | 29.99 | 761.8 | 68.7 | 20.4 | 67 | NW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Michel. |
| Algiers | ..... | ..... | 29.85 | 758.2 | 67.6 | 19.8 | 65 | WNW | ..... | ..... | 7 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Towiliere. |
| La Calle | ..... | ..... | 29.86 | 758.5 | 68.0 | 20.0 | 67 | NE | ..... | ..... | 3 | ..... | 3 | ..... | ..... | 0.039 | 1.0 | Pretty fair | Boulangeot. |
| Tunis | ..... | ..... | 29.85 | 758.2 | 77.0 | 25.0 | 38 | N | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0.059 | 1.5 | Cloudy | Jacques. |
| Sfax | ..... | ..... | 29.90 | 759.5 | 71.6 | 22.0 | ..... | E | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | Covered | Gau. |
| Saida | ..... | ..... | 29.91 | 759.8 | 63.9 | 17.7 | ..... | N | ..... | ..... | 1 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Herbin. |
| Tebessa | ..... | ..... | 29.85 | 758.3 | ..... | ..... | ..... | NW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Watrin. |
| Geriville | ..... | ..... | 30.06 | 763.5 | 64.8 | 18.2 | 77 | NW | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Lemaitlot. |
| Laghouat | ..... | ..... | 29.97 | 761.1 | 81.3 | 27.4 | 21 | W | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0.000 | 0.01 | Fair | Bertrand. |
| Biskra | ..... | ..... | 29.86 | 758.5 | 82.0 | 27.8 | 34 | NW | ..... | ..... | 5 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,380? m.; or 4,461.7? ft.

## AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.01 | 736.9 | 29.55 | 750.5 | 64.4 | 18.0 | 68 | SE | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0.047 | 1.2 | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 28.90 | 734.0 | 29.65 | 753.0 | 61.7 | 16.5 | 52 | NE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.028 | 0.7 | ..... | Dr. Wierzbiski. |
| Eperies | 28.88 | 733.5 | 29.75 | 755.6 | 54.1 | 12.3 | 77 | S | ..... | ..... | 1 | ..... | 8cs | ..... | ..... | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.37 | 720.5 | 29.59 | 751.5 | 58.5 | 14.7 | 68 | SE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | 0.144 | 3.65 | ..... | Andreas Rospini. |
| Hermannstadt | 28.36 | 720.4 | 29.75 | 755.7 | 60.1 | 15.6 | 84 | SE | ..... | ..... | 5 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.22 | 716.7 | 29.53 | 750.0 | 56.1 | 13.4 | 73 | WNW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.220 | 5.6 | ..... | Prof. C. Wagner |
| Lemberg | 28.76 | 730.6 | 29.73 | 755.1 | 59.0 | 15.0 | 48 | E | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Dr. T. Stanecki. |
| Pola | 29.53 | 750.0 | 29.64 | 752.8 | 60.4 | 15.8 | 78 | WSW | ..... | ..... | 1 | ..... | 10ckn | ..... | ..... | 0.803 | 20.4 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.31 | 744.5 | 29.76 | 755.9 | 66.4 | 19.1 | 76 | SE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.39 | 746.5 | 29.67 | 753.5 | 57.9 | 14.4 | 61 | S | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.173 | 4.40 | ..... | Karl Stancel. |
| Trieste | 29.55 | 750.6 | 29.65 | 753.2 | 57.9 | 14.4 | 81 | W | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Cloudy | P. Busin. |
| Vienna | 28.87 | 733.4 | 29.59 | 751.5 | 49.8 | 9.9 | 91 | ESE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.224 | 5.7 | ..... | I. R. Central Met.Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

## BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.09 | 713.4 | 29.57 | 751.1 | 53.4 | 11.9 | 77 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.020 | 0.5 | ..... | Prof. M. Passau. |
| Brussels | 29.41 | 746.9 | 29.60 | 751.8 | 60.6 | 15.9 | 55 | E | ..... | ..... | 4 | ..... | 5 | ..... | NE | 0.059 | 1.5 | ..... | Royal Observatory. |
| Furnes | 29.70 | 754.4 | 29.72 | 755.0 | 55.0 | 12.8 | 81 | NE | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0.280 | 7.1 | ..... | M. E. de Cae. |
| Maeseyck | 29.47 | 748.6 | 29.60 | 751.8 | 60.1 | 15.6 | 65 | NE | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0.059 | 1.5 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

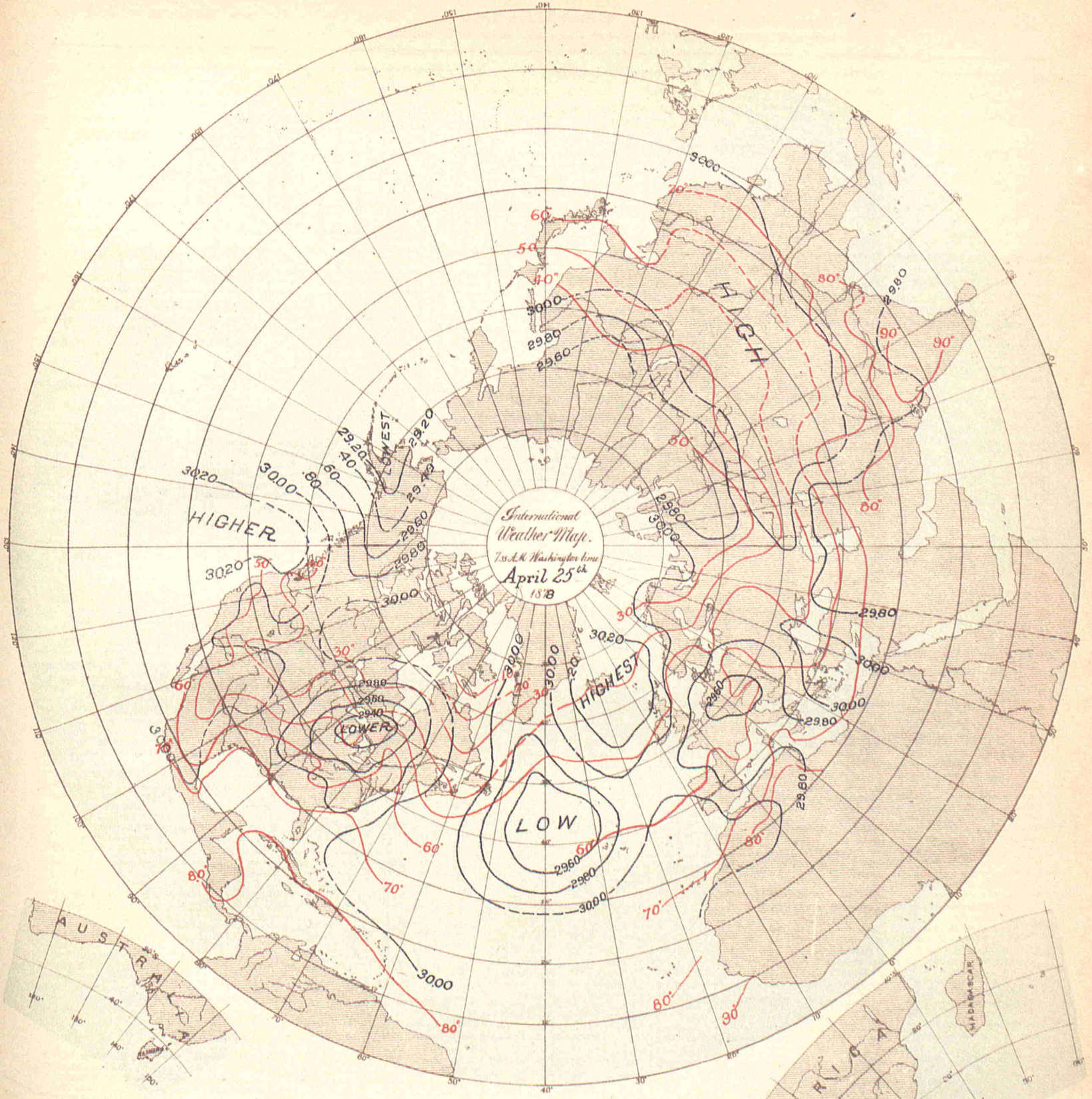
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E. Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.08 | 764.0 | 30.18 | 766.6 | 44.0 | 6.7 | ..... | NE | 24 | 10.7 | ..... | ..... | 10 | ..... | ..... | 0.045 | 1.15 | Squally | W. Boswell. |
| Ardrossan | 30.09 | 764.3 | 30.10 | 764.5 | 55 | 12.8 | ..... | E | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Blue sky | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.10 | 764.5 | 54.3 | 12.4 | ..... | NE | 15 | 6.7 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.98 | 761.5 | 56.0 | 13.3 | ..... | NE | 22 | 9.8 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 30.03 | 762.7 | 58.2 | 14.6 | ..... | ENE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | J. L. E. Dreyer. |
| Bradford, Yorkshire | 29.55 | 750.6 | 29.94 | 760.5 | 48.0 | 8.9 | ..... | NE | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0 | 0 | D. clouds | J. McLandsborough. |
| Bridgetown, (Barbados) | ..... | ..... | 29.94 | 760.5 | 78.0 | 25.6 | ..... | NE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.84 | 757.9 | 60.0 | 15.6 | ..... | N | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | H. Todd. [H. C. |
| Cardington | ..... | ..... | 29.87 | 758.7 | 56.0 | 13.3 | ..... | N | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | John McLaren. |
| Chatham, School M. E. | 29.64 | 752.8 | 29.77 | 756.1 | 58.2 | 14.6 | ..... | N | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | Overcast | Q. M. Serg., Geo. Stuart, R. E |
| Dartmoor | 28.38 | 720.8 | 29.83 | 757.7 | 56.0 | 13.3 | ..... | NE | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | Fine | Alexander Watt. |
| Donaghadee | 30.06 | 763.5 | 30.09 | 764.3 | 51 | 10.6 | ..... | E | ..... | ..... | 4 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | J. Mac Gowan. |
| Dover | 29.70 | 754.4 | 29.72 | 754.9 | 53 | 11.7 | ..... | NNE | ..... | ..... | 6 | ..... | 3 | ..... | ..... | ..... | ..... | ¾ clouded | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.96 | 761.0 | 53.6 | 12.1 | ..... | NE | 8.4 | 3.8 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | Thomas Mackereth. |
| Falmouth, Observatory | 29.62 | 752.3 | 29.85 | 758.2 | 57.9 | 14.4 | ..... | SE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds | The Staff. |
| Fort Napier, (Natal) | 27.76 | 705.1 | 29.96 | 761.0 | 76.4 | 24.7 | ..... | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.62 | 752.3 | 29.85 | 758.2 | 90.0 | 32.2 | ..... | W | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | ..... |
| Galway, Queen's College | ..... | ..... | 29.98 | 761.5 | 61 | 16.1 | ..... | ENE | ..... | ..... | 3 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.92 | 760.0 | 29.97 | 761.2 | 69.8 | 20.7 | ..... | W | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | Corpl. Wm. Allen, A. H. C. |
| Glasgow, Observatory | 29.93 | 760.2 | 30.13 | 765.3 | 51.0 | 10.6 | ..... | ENE | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | Blue sky | D. G. Maclean. |
| Great Yarmouth | 29.81 | 757.2 | 29.82 | 757.4 | 51 | 10.6 | ..... | NNE | ..... | ..... | 5 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.62 | 752.3 | 29.78 | 756.4 | 61.7 | 16.5 | ..... | NNE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Cloudy | The Staff, for G. B. Airy. |
| Guernsey | 29.57 | 751.1 | 29.79 | 756.7 | 52 | 11.1 | ..... | NNE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 29.90 | 759.4 | 63 | 17.2 | ..... | NE | ..... | ..... | 1 | ..... | 1c | ..... | ..... | 0.07 | 1.8 | Very fine | M. P. Moyle. |
| Holyhead | 29.36 | 761.0 | 30.04 | 763.0 | 51 | 10.6 | ..... | NNE | ..... | ..... | 5 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | John Tilston. |
| Jersey | 29.50 | 749.3 | 29.79 | 756.7 | 53.0 | 11.7 | ..... | NNE | ..... | ..... | 3 | ..... | 7 | ..... | ..... | ..... | ..... | Gloomy | J. Fisher. |
| Kew, Observatory | ..... | ..... | 29.80 | 756.9 | 58.8 | 14.9 | ..... | N | 26 | 11.6 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | The Staff. |
| Kingstown | 30.03 | 762.7 | 30.05 | 763.3 | 49 | 9.4 | ..... | NE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.90 | 759.4 | 57.0 | 13.9 | ..... | NE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.68 | 753.9 | 29.75 | 755.6 | 66.8 | 19.3 | ..... | SE | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | Sgt. Fred. Travis, A. H. |
| Nairn | 30.11 | 764.8 | 30.20 | 767.1 | 48 | 8.9 | ..... | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 29.98 | 761.5 | 79.0 | 26.1 | ..... | SE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.75 | 755.6 | 29.94 | 760.5 | 54.7 | 12.6 | ..... | N | ..... | ..... | 6 | ..... | 2k | ..... | NNE | 0 | 0 | Blue sky | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.38 | 746.1 | 29.90 | 759.4 | 56.2 | 13.4 | ..... | NE | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.85 | 758.2 | 58 | 14.4 | ..... | NNE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky | Mr. Lucas. |
| Plymouth | 29.75 | 755.6 | 29.82 | 757.4 | 62.0 | 16.7 | ..... | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | John Merrifield. |
| Roche's Point | 29.93 | 760.2 | 29.97 | 761.2 | 56 | 13.3 | ..... | ENE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Fine | W. Kennedy. |
| Saint Ann's Head | 29.72 | 754.9 | 29.88 | 758.9 | 58 | 14.4 | ..... | NNE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Hazy | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 30.25 | 768.3 | 46.5 | 8.1 | ..... | NE | 20 | 8.9 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.99 | 761.7 | 59.2 | 15.1 | ..... | S | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | Sergt. W. H. Lyne. |
| Sheffield | 29.70 | 754.4 | 29.98 | 761.5 | 52.9 | 11.6 | ..... | NE | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0 | 0 | D. clouds | W. F. Cooper. |
| Silloth Rectory | 30.04 | 763.0 | 30.07 | 763.8 | 54.4 | 12.4 | 56 | E | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.60 | 751.8 | 30.00 | 762.0 | 51.1 | 10.6 | ..... | WSW | ..... | ..... | 0 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | Rev. S. J. Perry. |
| Stornoway, Lews C. (Hebr.) | ..... | ..... | 30.20 | 767.1 | 48 | 8.9 | ..... | E | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | Clear | John Sutherland. |
| Stratfield Turgiss | 29.59 | 751.6 | 29.80 | 756.9 | 59.6 | 15.3 | ..... | N | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | Blue sky | Rev. C. H. Griffith, F. M |
| Thurso | ..... | ..... | 30.21 | 767.3 | 48 | 8.9 | ..... | NNE | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 29.87 | 758.7 | 64 | 17.8 | ..... | NE | ..... | ..... | 4 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | W. Nowcombe. |
| Valencia, Observatory | ..... | ..... | 29.79 | 756.7 | 57.8 | 14.3 | ..... | NNE | 15 | 6.7 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Hazy | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hazy | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.50 | 749.3 | 68.9 | 20.0 | 83 | NW | ..... | ..... | 2 | ..... | 4k | ..... | ..... | 0.01 | 0.3 | ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.80 | 756.9 | 29.99 | 761.6 | 78.4 | 25.8 | 68 | SSE | 20.5 | 9.2 | ..... | 5 | 4 | ..... | SE | 1.81 | 46.0 | Squally | C. Meldrum. |
| Melbourne, Observatory | 29.66 | 753.3 | 29.75 | 755.6 | 64.1 | 17.8 | 59 | N | 23 | 10.3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Threatening | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m.

| Marine Series. Vessels. | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Algeria, N. 50° 5′, W. 22° 35′ | 5* | SE | 30.03 | 762.7 | 55 | 12.8 | ..... | ESE | ..... | ..... | 2 | ..... | 10 | ESE | ..... | ..... | ..... | Overcast | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. C. Prehn. |
| S. S. Naid, N. 47° 30′, W. 29° 15′ | 4 | N;S | 29.64 | 752.8 | 57 | 13.9 | ..... | ESE | ..... | ..... | 8 | ..... | 10 | ..... | ..... | 4 | N;S | Rain; fog | Capt. J. Smith. [R. |
| S. S. Peruvian, N. 51° 20′ W. 32° 50′ | 5 | ESE | 29.82 | 757.4 | 52 | 11.1 | ..... | ESE | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 5 | ESE | Misty | Capt. W. H. Smith, R. N |
| Royal Alice | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Longley. |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instru-m'tal error and temperature. Inches. | Barometer. Corrected for instru-m'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | | | | | | | | | | | | | | | | | | | Mr. Ansart. |
| San Jose | 26.22 | 666.0 | | | 70.2 | 21.1 | 82 | NE | | | 1 | 5p | Haze | | | 0 | 0 | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.76 | 755.9 | 29.81 | 757.1 | 51.4 | 10.8 | 56 | E | | | 2 | | 0 | | | | | | |
| Fanöe | 29.78 | 756.3 | 29.80 | 756.8 | 60.6 | 15.9 | 50 | ENE | | | 4 | | 2 | | | | | | |
| Godthaab, (Greenland) | 29.89 | 759.1 | 29.93 | 760.2 | 29.1 | —1.6 | 88 | NNE | | | 4 | | 4 | | | | | | |
| Stykkisholm, (Iceland) | 30.24 | 768.1 | 30.28 | 769.2 | 46.6 | 8.1 | 78 | S | | | 4 | | 8 | | | | | | |
| Thorshavn, (Faröe) | 30.32 | 770.2 | 30.36 | 771.1 | 43.5 | 6.4 | 64 | NE | | | 2 | | 0 | | | | | | |
| Vestervig | 29.71 | 754.5 | 29.87 | 758.8 | 58.6 | 14.8 | 49 | ENE | | | 4 | | 0 | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.17 | 740.8 | 29.72 | 754.8 | 56.3 | 13.5 | 90 | NNE | | | 3 | | 10 | | | 0.059 | 1.5 | Covered | Collignon, Director. |
| Amiens, Normal School | | | | | | | | | | | | | | | | | | | Bonvarne, Director. |
| Avignon, Normal School | 29.59 | 751.5 | 29.67 | 753.5 | 55.8 | 13.2 | 84 | W | | | 1 | | 10 | | | 0.165 | 4.2 | Raining | Mr. Giraud, Director |
| Bar-sur-Seine | 29.07 | 738.4 | 29.61 | 752.2 | 57.4 | 14.1 | 67 | SW | | | 2 | | 8kn | | | 0 | 0 | Very cloudy | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 55.2 | 12.9 | 76 | NNE | | | 2 | | 10 | | NNE | 0 | 0 | Covered | Normal School. |
| Besançon | 28.78 | 731.0 | 29.67 | 753.5 | 53.1 | 11 7 | 82 | SW | | | 2 | | 10 | | SW | 0.189 | 4.8 | Covered | Normal School. |
| Bourg-en-Bresse | 28.77 | 730.8 | 29.68 | 753.8 | 53.6 | 12 | 87 | S | | | 2 | | 5kn | | S | 0.122 | 3.1 | Cloudy | Normal School. |
| Bourges, Normal School | 29.11 | 739.4 | 29.65 | 753.2 | 58.1 | 14.5 | 84 | WSW | | | 2 | | 5 | | W | 0 | 0 | Cloudy | A. Wagner, Director. |
| Brest, Naval Observatory | 29.52 | 749.7 | 29.74 | 755.3 | 50.2 | 10.1 | 79 | NE | | | 3 | | 10 | | NE | 0 | 0 | Misty | The Staff. |
| Carcassonne, Normal School | 29.32 | 744.6 | 29.72 | 754.9 | 61.0 | 16.1 | 65 | W | | | 2 | | 5 | | W | 0 | 0 | Cloudy | Vateau, Director. |
| Caen | | | | | | | | | | | | | | | | | | | Normal School. |
| Chartres, Normal School | 29.01 | 736.9 | 29.57 | 751.0 | 58.5 | 14.7 | 91 | NNE | | | 2 | | 10 | | NE | 0.138 | 3.5 | Covered | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.30 | 744.1 | 29.61 | 752.0 | 62.2 | 16.8 | 78 | NW | | | 4 | | 8 | | W | 0 | 0 | Very cloudy | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.32 | 719.3 | 29.66 | 753.3 | 56.3 | 13.5 | 43 | E | | | 2 | | 10 | | W | 0.039 | 1.0 | Covered | Alluard, Director. |
| Commercy, Normal School | 28.76 | 730.5 | 29.63 | 752.7 | 52.9 | 11.6 | 80 | W | | | 2 | | 10 | | W | 1.06 | 27. | Covered | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.57 | 725.6 | 29.71 | 754.6 | 58.8 | 14.9 | 58 | W | | | 2 | | 8 | | NW | 0.55 | 14. | ¾ covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 29.51 | 749.6 | 29.73 | 755.1 | 56.1 | 13.4 | 84 | S | | | 4 | | 8 | | S | 0.126 | 3.2 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.37 | 746.0 | 29.68 | 753.8 | 53.2 | 11.8 | 90 | NE | | | 2 | | 5 | | NE | 0 | 0 | Cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.75 | 730.2 | 29.65 | 753.1 | 57.2 | 14 | 86 | W | | | | | 10 | | W | 0.047 | 1.2 | Covered | Voudez, Director. |
| Lorient, Naval Observatory | 29.69 | 754.2 | 29.79 | 756.7 | 55.0 | 12.8 | 83 | NNE | | | 3 | | 10 | | N | 0 | 0 | Covered | T. Carré, Director. |
| Mâcon, Normal School | 29.01 | 736.9 | 29.65 | 753.2 | 51.1 | 10.6 | 72 | S | | | 2 | | 10 | | | 0.031 | 0.8 | Covered | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | 28.49 | 723.7 | 29.52 | 749.9 | 52.5 | 11.4 | 86 | WSW | | | 2 | | 10 | | SW | 0.94 | 24. | Covered | Normal School. |
| Nismes, Normal School | 29.36 | 745.7 | 29.56 | 750.7 | 67.3 | 19.6 | 58 | N | | | 2 | | 0 | | | 0 | 0 | Clear | Boyer, Director. |
| Orleans, Normal School | 29.37 | 746.0 | 29.74 | 755.4 | 72.5 | 22.5 | 89 | W | | | 2 | | 5 | | W | 0.08 | 2. | Cloudy | Bernard, Director. |
| Paris, Observatory | 29.39 | 746.5 | 29.63 | 752.5 | 56.5 | 13.6 | 70 | NW | | | 1 | | 8 | | NW | 0 | 0 | Almost cov'd | National Observatory. |
| Privas | 28.62 | 726.9 | 29.67 | 753.6 | 56.5 | 13.6 | 59 | N | | | 2 | | 10 | | N | 0.764 | 19.4 | Covered | Normal School |
| Puy de Dome (Summit) | | | | | | | | | | | | | | | | | | | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.74 | 755.5 | 29.78 | 756.3 | 67.1 | 19.5 | 46 | W | | | 3 | | 0 | | | 0 | 0 | Clear | Lt. Decante, Director. |
| Rouen, Normal School | 29.58 | 751.3 | 29.67 | 753.5 | 56.8 | 14.8 | 78 | NNW | | | 1 | | 10 | | NW | 0.106 | 2.7 | Covered | F. Lucard, Director |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | M. H. Hercouet |
| Tarbes, Normal School | 28.64 | 727.4 | 29.69 | 754.2 | 60.8 | 16 | 59 | WSW | | | 2 | | 10 | | | 0.35 | 9. | Raining | T. Hugues, Director |
| Villefranche | | | | | | | | | | | | | | | | | | | Vilot, Director. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.82 | 757.4 | 29.85 | 758.1 | 77.7 | 25.4 | | | | | | | | | | 0.39 | 10. | | L'Abbé Marchési. |
| Lyons | | | 29.71 | 754.5 | 56.3 | 13.5 | 84 | | | | | | 10 | | | 0.31 | 8. | Stormy | M. Jeys. |
| Marseilles, Observatory | | | 29.66 | 753.4 | 59.2 | 15.1 | 59 | W | | | 2 | | 6 | | | 0.232 | 5.90 | Very cloudy | The Staff. |
| Mont-Louis | 24.57 | 624.0 | 29.88 | 759.0 | 39.2 | 4.0 | 66 | N | 20.5 | 9.17 | | | 5 | | SW | 0.067 | 1.7 | | Mr. Falguère. |
| Nice | | | 29.65 | 753.0 | 59.0 | 15.0 | 89 | SW | | | 1 | | 8 | | | 0 | 0 | Covered | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.34 | 745.3 | 29.62 | 752.3 | 56.7 | 13.7 | 74 | NW | | | 3 | | 9 | | NW | 0 | 0 | | Marié Davy, Director |
| Perpignan | | | 29.72 | 754.8 | 62.1 | 16.7 | 46 | N | 3.7 | 1.67 | | | 7 | | W | 0.004 | 0.1 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.20 | 564.0 | | | 25.2 | — 3.8 | | NW | | | 6 | | 10 | | | 0.598 | 15.2 | Snowy | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.46 | 748.3 | 29.63 | 752.5 | 57.2 | 14.0 | 67 | NNW | | | 1 | | 6 | | | 0 | 0 | Cloudy | E. Renou. |
| Toulouse, Observatory | 29.06 | 738.0 | 29.77 | 756.2 | 57.4 | 14.1 | 59 | W | | | 3 | | 9 | | | 0.213 | 5.40 | Raining | The Staff. |
| Tours | 29.47 | 748.5 | 29.67 | 753.5 | 59.0 | 15.0 | 66 | WNW | | | 2 | | 10 | | WNW | 0 | 0 | | C. Marquet. |
| Versailles, (near Paris) | | | 29.64 | 752.8 | 56.5 | 13.6 | 78 | NW | | | 2 | | 9 | | | 0 | 0 | Cloudy | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 30.09 | 764.3 | 30.12 | 765.0 | 55.8 | 13.2 | 95 | NNW | 8.5 | 3.8 | | | 10n | | | 0.024 | 0.6 | Covered | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,368 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.68 | 728.4 | 29.50 | 749.4 | 61.9 | 16.6 | 81 | W | | | 2 | | 10 | | | 0.31 | 8. | Raining | Prof. Dr. Hoh. |
| Berlin | 29.47 | 748.4 | 29.63 | 752.7 | 53.2 | 11.8 | 73 | E | | | 2 | | 10 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.11 | 739.4 | 29.63 | 752.7 | 53.4 | 11.9 | 83 | ESE | | | 4 | | 10 | | | 0.379 | 9.63 | | Royal University Obs'y |
| Carlsruhe | 29.10 | 739.1 | 29.52 | 749.7 | 51.8 | 11.0 | 78 | SW | | | 2 | | 10 | | | 0.354 | 9.0 | Heavy clouds | Albert Senz. |
| Cassel | 29.02 | 737.0 | 29.62 | 752.3 | 58.5 | 14.7 | 59 | ENE | | | 4 | | 8 | NE | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.40 | 746.7 | 29.56 | 750.8 | 61.3 | 16.3 | 52 | NE | | | 5 | | 8k;ks | | | 0.04 | 1. | | Director Lose. |
| Emden | 29.67 | 753.7 | 29.71 | 754.6 | 58.6 | 14.8 | 51 | NE | | | 7 | | 5 | | | 0 | 0 | | Prof. Prestel. |
| Frankfort on the Main | 29.21 | 741.9 | 29.56 | 750.9 | 57.4 | 14.1 | 72 | NNW? | | | 1 | | 10 | | | 0.016 | 0.4 | Raining | Physical Society. |
| Friedrichshafen | 28.17 | 715.5 | 29.78 | 756.3 | 55.8 | 13.2 | 69 | WSW | | | 6 | | 4 | WSW | | 0.642 | 16.3 | Raining | M. Wilhelm. |
| Hamburg | 29.60 | 751.9 | 29.67 | 753.7 | 57.9 | 14.4 | 61 | NE | | | 5 | | 4ck | | | 0.008 | 0.2 | Fine | Captain F. Hegemann. |
| Kiel | 29.71 | 754.7 | 29.73 | 755.1 | 54.5 | 12.5 | 43 | NE | | | 6 | | 2 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.70 | 754.4 | 29.78 | 756.4 | 62.8 | 17.1 | 44 | SE | | | 2 | | 6 | | | 0 | 0 | | Prof. E Luther. |
| Köslin | | | 29.67 | 753.5 | 63.1 | 17.3 | | E | | | 5 | | 2 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.15 | 740 4 | 29.56 | 750.9 | 59.4 | 15.2 | 74 | ENE | | | 3 | | 10 | | | 0 | 0 | | Prof. Bruhns. |
| Memel, Naval School | 29.82 | 757.5 | 29.87 | 758.7 | 59.0 | 15.0 | 31 | E | | | 2 | | 1cs | | | | | | Reinbrecht and Skalweit. |
| Neufahrwasser | 29.76 | 756.0 | 29.78 | 756.4 | 52.2 | 11.2 | 63 | E | | | 2 | | 10 | | | 0.071 | 1.8 | | A. Lothes. |
| Posen | 29.45 | 748.0 | 29.74 | 755 4 | 48.2 | 9.0 | 93 | SE | | | 5 | | 10 | | | 0.173 | 4.4 | | Dr. Magener. |
| Strassburg Obs., (in Alsace | 28.99 | 736.3 | 29.53 | 750.1 | 52.2 | 11.2 | 86 | SW | | | 3 | | 10 | | | 0.807 | 20.50 | Raining | Dr. Schur. |
| Stuttgart | 28.58 | 725.8 | 29.49 | 749.0 | 58.6 | 14.8 | 52 | W | | | 2 | | 8 | W | | 0.075 | 1.9 | Raining | Prof. Schoder. |
| Treves, (Trier) | 28.94 | 735.0 | 29.45 | 748.1 | 56.8 | 13.8 | 86 | E | | | 1 | | 10 | | | 0.191 | 4.85 | Dense fog | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.06 | 712.6 | 29.52 | 749.7 | 55.6 | 13.1 | 66 | Calm | 0 | 0 | | | 10 | | W | 0.063 | 1.6 | Covered | Dr. Von Bebber. |
| Wustrow, Naval School | 29.75 | 755.6 | 29.79 | 756.6 | 52.5 | 11.4 | 55 | ENE | | | 4 | | 3 | | | 0 | 0 | | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.61 | 752.2 | 30.00 | 762.0 | 67.8 | 19.9 | | S | | | 3.0 | | | | | | | ⅔ clear | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.73 | 755.1 | 29.78 | 756.4 | 85.3 | 29.6 | 72 | SW | 23? | 10.3? | | | 1 | | | 0 | 0 | D. clouds | |
| Deesa | 29.37 | 745.9 | 29.83 | 757.6 | 97.3 | 36.3 | 21 | W | | | 0 | | | | | 0 | 0 | Misty | |
| Bombay | 29.78 | 756.3 | 29.81 | 757.2 | 84.8 | 29.3 | 79 | WNW | 14 | 6.3 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.76 | 705.1 | 29.70 | 754.5 | 92.7 | 33.7 | 38 | NNE | | | | | | | | 0 | 0 | Blue sky | |
| Lahore | 29.17 | 740.8 | 29.93 | 760.2 | 67.7 | 19.8 | 85 | E | 3.9 | 1.7 | | | 10 | | | 0.72 | 18.3 | Raining | |
| Belgaum | 27.30 | 693.3 | 29.78 | 756.4 | 86.7 | 30.4 | 51 | W | 13 | 5.8 | | | 1 | | | 0 | 0 | D. clouds | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 29.00 | 736.5 | 29.90 | 759.6 | 76.8 | 24.9 | 49 | Calm | 1.6 | 0.7 | | | 10 | | | 0.04 | 1.0 | | |
| Agra | 29.27 | 743.5 | 29.83 | 757.7 | 88.7 | 31.5 | 44 | Calm | | | | | | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.74 | 729.9 | 29.76 | 755.8 | 91.5 | 33.1 | 42 | NE | 7.2 | 3.2 | | | 9 | | NE | 0 | 0 | Gloomy | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.46 | 748.3 | 29.84 | 757.9 | 74.8 | 23.8 | 79 | SW | 5.2 | 2.3 | | | 5 | NNE | | 0 | 0 | D. clouds | |
| Allahabad | 29.53 | 750.0 | 29.84 | 757.9 | 80.4 | 26.9 | 66 | N | 3.1 | 1.4 | | | 9 | | | 0.02 | 0.5 | D. clouds | |
| Patna | 29.63 | 752.7 | 29.81 | 757.2 | 90.9 | 32.7 | 50 | Calm | 1.6 | 0.7 | | | 4 | E | E | 0.02 | 0.5 | D. clouds | |
| Hazaribagh | 27.82 | 706.7 | 29.82 | 757.4 | 82 | 27.8 | 45 | Calm | 7.8 | 3.5 | | | 9 | | W | | | Raining | |
| Cuttack | 29.77 | 756.1 | 29.85 | 758.2 | 80.3 | 26.8 | 77 | S | 4.2 | 1.9 | | | 1 | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.87 | 758.7 | 29.89 | 759.3 | 78.9 | 26.1 | 78 | ESE | 8 | 3 6 | | | 5 | | NW | 0 | 0 | D. clouds | |
| Goalpara | 29.49 | 749.0 | 29.88 | 759.0 | 76.8 | 24.9 | 84 | E | 5.9 | 2.6 | | | 1 | | | 0.20 | 5.1 | D. clouds | |
| Chittagong | 29.82 | 757.4 | 29.91 | 759.8 | 85.9 | 29.9 | 64 | W | 5.3 | 2.4 | | | 6 | | | 0 | 0 | Gloomy | |
| Sibsagar | 29.59 | 751.5 | 29.92 | 760.0 | 78.5 | 25.8 | 79 | NE | 2.1 | 0.9 | | | 8 | SW | SW | 0.58 | 14.7 | D. clouds | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.50 | 723.8 | 29.86 | 758.5 | 80.5 | 26.9 | 51 | SE | 4.6 | 2.1 | | | 6 | S | | 0 | 0 | D. clouds | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.18 | 741.1 | 29.58 | 751.4 | 62.1 | 16.7 | 70 | SE | 3.1 | 1.4 | ..... | ..... | 10 | ..... | ..... | 2.181 | 55.4 | ..... | Prof. Giovanni Codig. |
| Padua | 29.48 | 748.8 | 29.59 | 751.5 | 60.1 | 15.6 | 69 | SW | 8.1 | 3.6 | ..... | ..... | 9 | ..... | ..... | 1.567 | 39.8 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.40 | 746.8 | 29.59 | 751.6 | 61.2 | 16.2 | 71 | SW | 8.7 | 3.9 | ..... | ..... | 7 | ..... | ..... | 1.539 | 39.1 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.31 | 719.0 | 29.61 | 752.0 | 59.0 | 15.0 | 62 | SW | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0.657 | 16.7 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.11 | 739.4 | 29.63 | 752.5 | 60.8 | 16.0 | ..... | NW | ..... | ..... | 1 | ..... | 5 | E | ..... | 1.087 | 27.6 | ..... | Prof. Schiaparelli. |
| Moncalieri | 28.72 | 729.4 | 29.61 | 752.2 | 55.9 | 13.3 | 70 | SSW | 0 | 0 | ..... | ..... | 8 | NE | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 27.74 | 704.6 | 29.64 | 752.8 | 52.5 | 11.4 | 71 | NW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0.539 | 13.7 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.39 | 746.6 | 29.61 | 752.2 | 60.4 | 15.8 | 70 | SW | ..... | ..... | 4 | ..... | 5 | NE | ..... | 0.016 | 0.4 | ..... | Prof. L. Vassallo. |
| Genoa | 29.47 | 748.5 | 29.64 | 752.8 | 62.2 | 16.8 | 65 | S | 6.3 | 2.8 | ..... | ..... | 2 | SE | ..... | 0.815 | 20.7 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.34 | 745.3 | 29.66 | 753.3 | 55.9 | 13.3 | 79 | SSW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 1.315 | 33.4 | ..... | Prof. P. Pigorini. |
| Florence | 29.41 | 747.1 | 29.67 | 753.5 | 59.9 | 15.5 | 88 | S | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0.354 | 9.0 | ..... | Cav. F. Meucci. |
| Leghorn | 29.58 | 751.3 | 29.66 | 753.4 | 63.0 | 17.2 | 82 | SW | 9.8 | 4.4 | ..... | ..... | 10 | SW | ..... | 0.217 | 5.5 | ..... | Prof. P. Monte. |
| Pesaro | 29.63 | 752.5 | 29.67 | 753.7 | 54.9 | 12.7 | 87 | W | 0 | 0 | ..... | ..... | 10 | W | ..... | 0.638 | 16.2 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.13 | 714.4 | 29.67 | 753.5 | 54.5 | 12.5 | 77 | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.559 | 14.2 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.56 | 750.9 | 29.67 | 753.7 | 65.8 | 18.8 | 70 | SSW | ..... | ..... | 4 | ..... | 4 | S | ..... | 0.142 | 3.6 | ..... | Avv. P. Ponticelli. |
| Rome | 29.56 | 750.9 | 29.74 | 755.3 | 68.4 | 20.2 | 44 | SW | 11.9 | 5.3 | ..... | ..... | 1 | ..... | ..... | 0.024 | 0.6 | ..... | Prof. P. G. S. Ferrar |
| Naples, O. U | 29.61 | 752.0 | 29.80 | 757.0 | 69.4 | 20.8 | 65 | SSW | ..... | ..... | 4 | ..... | 5 | SW | ..... | 0.071 | 1.8 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 60.8 | 16.0 | 77 | SSW | 24.8 | 11.1 | ..... | ..... | 9 | SW | ..... | 0.098 | 2.5 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.59 | 751.5 | 29.78 | 756.4 | 71.4 | 21.9 | 40 | S | ..... | ..... | 2 | ..... | 5 | W | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 28.95 | 735.2 | 29.82 | 757.4 | 71.2 | 21.8 | 79 | NE | 3.8 | 1.7 | ..... | ..... | 9 | ..... | ..... | 0.079 | 2.0 | ..... | Prof. F. D. Conti. |
| Palermo | 29.52 | 749.9 | 29.78 | 756.3 | 65.8 | 18.8 | 63 | ENE | 3.1 | 1.4 | ..... | ..... | 9 | ..... | ..... | 0.028 | 0.7 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.69 | 754.0 | 29.76 | 755.9 | 68.0 | 20.0 | 64 | SSW | ..... | ..... | 6 | ..... | 9 | SW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.24 | 742.7 | 29.80 | 756.8 | 64.9 | 18.3 | 69 | SW | 0.7 | 0.3 | ..... | ..... | 5 | NW | ..... | 0.059 | 1.5 | ..... | Prof. F. Brioschi. |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nagasaki | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Tokei (Yeddo) | 30.11 | 764.8 | 30.18 | 766.6 | 54.1 | 12.3 | 87 | NE | 3.5 | 1.6 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | The Observatory. |
| Tokei (Yeddo) University | 30.07 | 763 8 | 30.17 | 766.3 | 55 | 12.8 | 87 | NE | 2 | 0.9 | ..... | 9cs | ..... | ..... | ..... | 0 | 0 | Cloudy | Prof. P. V. Veeder. |

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 68.0 | 20.0 | 36 | N | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | L. Castillo, A. E. |
| Guadalajara | 25.06 | 636.4 | 30.11 | 764.6 | 48.2 | 9.0 | 53 | S | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | Prof. L. Perez. |
| Guanajuato | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 61.9 | 16.6 | 24 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | Prof. M. Leal. |
| Mexico | 23.11 | 587.0 | 30.16 | 766.0 | 58.8 | 14.9 | 44 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 57.5 | 14.2 | 48 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | M. V. de Leon, M. E. |
| Puebla | 23.36 | 593.3 | 30.08 | 763.9 | 53.6 | 12.0 | 75 | NE | 1.3 | 0.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 29.97 | 761.4 | 29.99 | 761.9 | 67.1 | 19.5 | 90 | S | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 29.95 | 760.7 | 29.98 | 761.4 | 70.7 | 21.5 | 46 | WNW | 3.4 | 1.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 48.2 | 9.0 | 51 | S | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.29 | 591.6 | 30.03 | 762.8 | 55.2 | 12.9 | 49 | W | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hazy | P. Spina. [M.M. D. D |
| Morelia | 24.04 | 610.5 | ..... | ..... | 59.0 | 15.0 | 63 | Calm | 0 | 0 | ..... | 0 | 1 | ..... | W | ..... | ..... | Very hazy | M. Tena, F. L. Param. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,284.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.68 | 753.8 | 29.68 | 753.8 | 57.6 | 14.2 | ..... | NE | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0.087 | 2.2 | ..... | |
| Groningen | 29.65 | 753.0 | 29.70 | 754.4 | 53.8 | 12.1 | ..... | NE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.016 | 0.4 | ..... | |
| Helder | 29.72 | 754.8 | 29.72 | 754.8 | 51.6 | 10.9 | ..... | NNE | ..... | ..... | 5 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 29.66 | 753.4 | 29.66 | 753.4 | 60.6 | 15.9 | 80 | N | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.61 | 752.2 | 29.66 | 753.4 | 58.8 | 14.9 | 61 | NNE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0.004 | 0.1 | Cloudy | H. v d Brink. |

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instru'tal error and temperature. Inches. | Barometer. Corrected for instru'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.91 | 759.7 | 29.97 | 761.1 | 57.6 | 14.2 | 32 | NNW | 8.9 | 4.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 30.02 | 762.4 | 30.06 | 763.4 | 42.8 | 6.0 | 70 | WNW | 9 | 4 | ..... | ..... | 6 | ..... | ..... | 0.228 | 5.8 | ..... | |
| Christiania | 29.82 | 757.3 | 29.96 | 761.0 | 58.6 | 14.8 | 33 | NNE | 11 | 5 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.86 | 758.4 | 29.90 | 759.5 | 33.1 | 0.6 | 85 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.52 | 749.8 | 29.71 | 754.7 | 62.1 | 16.7 | 94 | W | 6.9 | 3.1 | ..... | ..... | 5 | ..... | ..... | 0.354 | 9.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.97 | 735.9 | 30.00 | 762.1 | 59.9 | 15.5 | 57 | WSW | 6.9 | 3.1 | ..... | ..... | 9 | WNW | ..... | 0.055 | 1.4 | ..... | Dr. A. M. R. dos Santos |
| Funchal, (Madeira) | 29.96 | 760.9 | 30.04 | 763.1 | 66.6 | 19.2 | 64 | SE | 14.3 | 6.4 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.67 | 753.6 | 30.03 | 762.7 | 62.6 | 17.0 | 51 | WNW | 8.7 | 3.9 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 29.75 | 755.7 | 29.82 | 757.5 | 61.5 | 16.4 | 92 | S | 6.9 | 3.1 | ..... | ..... | 10 | ..... | ..... | 0.417 | 10.6 | Raining | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.95 | 760.8 | 29.96 | 761.0 | 82.4 | 28.0 | ..... | S | ..... | ..... | 5 | ..... | 1 | ..... | S | 2 | ..... | Blue sky | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Rio Douro, S. 25° 08′, E. 32° 37′ | ..... | ..... | 30.11 | 764.7 | 75.2 | 24.0 | ..... | E | ..... | ..... | 5 | ..... | 1 | ..... | E | 3 | E | D. clouds | J. T. d'Oliveria, Com'd't. |
| Sado, N. 14° 46′, W. 23° 09′ | 30.00* | 762.0* | 30.01* | 762.3* | 78.8 | 26.0 | ..... | NNE | ..... | ..... | 2 | ..... | 6 | ..... | NE | 2 | NE | D. clouds | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, S. 10° 33′ 6″, E. 12° 02′ | 29.72 | 755.0 | 29.73 | 755.2 | ..... | ..... | ..... | SSE | ..... | ..... | 1 | ..... | 1 | ..... | SSE | 2 | SSE | D. clouds | F. Texeira da Silva, Com'd't. |
| Tejo, N. 22° 10′ E. 113° 32′ | ..... | ..... | 30.02 | 762.5 | 77.9 | 25.5 | ..... | E | ..... | ..... | 1 | ..... | 1c | ..... | E | 0 | ..... | ..... | F. J. Ferreina, dos Amas, Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.30 | 744.1 | 29.71 | 754.6 | 61.5 | 16.4 | 41 | SE | 18 | 8 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.50 | 749.2 | 29.91 | 759.7 | 59.0 | 15.0 | 34 | SSE | 9 | 4 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | Light clouds | Astronomical Obs. |
| Dorpat | 29.67 | 753.5 | 29.90 | 759.5 | 57.2 | 14.0 | 48 | W | 7 | 3 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.84 | 758.0 | 29.86 | 758.4 | 48.2 | 9.0 | 70 | NW | 11 | 5 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | Light clouds | Central Physical Obs. |
| Kuopio | 29.53 | 750.0 | 29.85 | 758.3 | 39.2 | 4.0 | 92 | E | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Ch. Forsten. |
| Kieff | 29.32 | 744.8 | 29.96 | 760.9 | 54.0 | 12.2 | 42 | SE | 9 | 4 | ..... | ..... | 1ck | ..... | ..... | ..... | ..... | Light clouds | Physical Cabinet. |
| Nikolaiev | 29.95 | 760.6 | 30.02 | 762.4 | 56.1 | 13.4 | 36 | NE | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.91 | 759.8 | 29.93 | 760.3 | 43.7 | 6.5 | 94 | ENE | 11 | 5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.39 | 746.5 | 29.94 | 760.4 | 55.8 | 13.2 | 41 | NNE | 9 | 4 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.78 | 756.5 | 29.98 | 761.6 | 58.1 | 14.5 | 35 | ESE | 9 | 4• | ..... | ..... | 3s | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Archangel | 29.99 | 761.8 | 30.01 | 762.3 | 26.2 | — 3.2 | 67 | N | 4 | 2 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.33 | 719.5 | 29.72 | 755.0 | 57.9 | 14.4 | 55 | W | 18 | 8 | ..... | ..... | 6k | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.09 | 764.2 | 30.00 | 762.1 | 42.8 | 6.0 | 72 | NE | 9 | 4 | ..... | ..... | 10n | ..... | ..... | Blank | Blank | Heavy clouds | Sebastianof. |
| Krotkowo* | 29.43 | 747.4 | 29.90 | 759.4 | 46.9 | 8.3 | 87 | SSE | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Cand. Fatjanow. |
| Kasan | 29.61 | 752.0 | 29.88 | 759.0 | 39.0 | 3.9 | 48 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.72 | 729.4 | 29.70 | 754.3 | 27.9 | — 2.3 | 53 | W | 31 | 14 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.55 | 750.5 | 29.78 | 756.4 | 59.7 | 15.4 | 38 | NE | 27 | 12 | ..... | ..... | 10k | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.35 | 720.2 | 30.00 | 762.1 | 72.3 | 22.4 | 58 | Calm | 0 | 0 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.41 | 746.9 | 29.93 | 760.3 | 42.8 | 6.0 | 38 | SW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.44 | 747.8 | 29.77 | 756.1 | 39.0 | 3.9 | 79 | SW | 11 | 5 | ..... | ..... | 7 | ..... | ..... | Blank | Blank | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 29.99 | 761.8 | 30.13 | 765.4 | 63.1 | 17.3 | 43 | Calm | 0 | 0 | ..... | ..... | 1s | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.64 | 702.0 | 29.68 | 753.9 | 46.2 | 7.9 | 43 | W | 4 | 2 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 30.06 | 763.4 | 30.15 | 765.8 | 46.9 | 8.3 | 79 | SSE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 32.0 | 0.0 | 90 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.03 | 752.6 | 29.74 | 755.3 | 68.4 | 20.2 | 34 | WSW | 5.7 | 2.56 | ..... | 0 | 2k | ..... | ..... | 0 | 0 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.85 | 758.2 | 29.91 | 759.6 | 61.9 | 16.6 | 74 | NW | 3.5 | 1.56 | ..... | 3 | 4 | NW | ..... | 0.421 | 10.7 | Raining | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.91 | 683.4 | ..... | ..... | 57.9 | 14.0 | 69 | SW | 10.8 | 4.84 | ..... | ..... | 6 | ..... | ..... | 0.728 | 18.5 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.67 | 702.9 | 29.88 | 759.0 | 58.5 | 14.7 | 53 | NW | 18.6 | 8.33 | ..... | 0 | 7 | ..... | ..... | 0.094 | 2.4 | Cloudy | The Staff. |
| Murcia, Met. Obs'y | 29.65 | 753.2 | 29.80 | 756.9 | 76.1 | 24.5 | 39 | NW | 3.7 | 1.67 | ..... | 1 | 2 | NE | ..... | 0 | 0 | Almost clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.60 | 736.6 | 29.89 | 759.2 | 57.0 | 13.9 | 80 | SW | 6.8 | 3.06 | ..... | ..... | 10 | ..... | ..... | 0.094 | 2.4 | Rainy | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.88 | 758.9 | 29.94 | 760.6 | 81.0 | 27.2 | 78 | SE | 7.6 | 3.4 | ..... | 1c | 0 | ..... | ..... | 0 | 0 | Clear | Benito Vines, S. J. |
| San Fernando, Naval Obs'y | 29.93 | 760.2 | 30.03 | 762.7 | 63.0 | 17.2 | 54 | WNW | 19.0 | 8.5 | ..... | 0 | 3 | ..... | WNW | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.87 | 758.8 | 29.97 | 761.1 | 80.2 | 26.8 | 84 | SE | 0 | 0 | ..... | 5s | 2k | SE | SE | 0.974 | 24.75 | Clear | Leonardo de Tejeda, Chief of Engineers. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.92 | 760.0 | 29.96 | 761.0 | 33.8 | 1.0 | ..... | Calm | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0.039 | 1.0 | ..... ..... | |
| Umea | 29.92 | 760.0 | 29.99 | 761.7 | 38.1 | 3.4 | 88 | S | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.89 | 759.3 | 29.95 | 760.6 | 40.3 | 9.6 | 69 | SW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.75 | 755.7 | 29.93 | 760.2 | 54.7 | 12.6 | 40 | E | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.87 | 758.8 | 29.93 | 760.3 | 48.6 | 9.2 | 63 | NE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.86 | 758.5 | 29.94 | 760.4 | 55.0 | 12 5 | 47 | ENE | 9.6 | 4.3 | ..... | ..... | 8 | WSW | ENE | 0 | 0 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.23 | 717.1 | 29.65 | 753.1 | 57.6 | 14.2 | 61 | SW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0.362 | 9.2 | Cloudy..... | The Observatory. |
| Zurich | 27.99 | 711.0 | 29.63 | 752.7 | 52.9 | 11.6 | 79 | W | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0.583 | 14.8 | Rainy..... | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —7.3 mm.; Thermometer, +0.8 cent.; Relative Humidity, +4 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.06 | 763.5 | 51.8 | 11.0 | 58 | SSE | 7 | 3.0 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... ..... | |
| Valona | ..... | ..... | 29.90 | 759.4 | 64.4 | 18.0 | ..... | S | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | ..... ..... | B. Stefanides. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Thunder-storm. | A. Bertrand. |
| Sub-Series. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... ..... | Imperial Observatory. |
| Beirut, (Syria,) Lee Obs'y | 29.78 | 756.4 | 29.90 | 759.4 | 70.0 | 21.1 | 69 | SW | ..... | ..... | 3 | ..... | 8n | ..... | SW | 0.22 | 5.6 | D. clouds.... | Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.88 | 758.9 | 29.94 | 760.5 | 42.3 | 5.7 | 94 | Calm | 0 | 0 | ..... | 5k | 0 | ..... | ..... | ..... | ..... | Clearing .... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.36 | 745.7 | 29.65 | 753.1 | 63 | 17.2 | ..... | SW | 1 | 0.4 | ..... | ..... | 10s | ..... | SW | 0.04 | 1.0 | Cloudy..... | W. R. Rigg. |
| *Chatham, N B | 29.90 | 759.4 | 29.96 | 761.0 | 46 | 7.8 | 96 | SW | 3 | 1.3 | ..... | ..... | 10s | ..... | S | 0.04 | 1.0 | Cloudy..... | G. A. Blair. |
| Charlottetown, P. E. Island. | 29.97 | 761.2 | 30.01 | 762.2 | 43 | 6.1 | 97 | S | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.020 | 0.51 | Cloudy..... | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.42 | 747.3 | 29.61 | 752.1 | 63.8 | 17.7 | 77 | SW | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0 | 0 | Overcast.... | James Smith, M. A. |
| Dalhousie, N. B | 29.92 | 760.0 | 29.95 | 760.7 | 39 | 3.9 | 98 | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0.09 | 2.3 | Foggy ..... | H. A. Johnson. |
| Esquimault, B. C | 30.03 | 762.7 | 30.07 | 763.8 | 42.1 | 5.6 | 92 | Calm | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Cloudy..... | W. H. Revis. |
| *Father Point, Quebec | 29.82 | 757.4 | 29.85 | 758.2 | 40 | 4.4 | 95 | E | 16 | 7.2 | ..... | ..... | 10n | ..... | SW | 0.55 | 14.0 | Cloudy..... | J. McWilliams. |
| Fredericton, N. B | 29.94 | 760.5 | 30.01 | 762.2 | 47.2 | 8.4 | 92 | W | 2 | 0.9 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Misty..... | Prof. Harrison. |
| *Fort Garry Manitoba | 29.12 | 739.6 | 29.96 | 761.0 | 37 | 2.8 | 76 | N | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0.020 | 0.51 | Clear..... | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.40 | 722.9 | 29.54 | 750.3 | 50 | 10.0 | 100 | S | ..... | ..... | 2 | ..... | 10n | ..... | ..... | 0.15 | 3.8 | Cloudy ..... | James Grant. |
| *Halifax, N. S | 29.88 | 758.9 | 30.02 | 762.5 | 44 | 6.7 | 98 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | ..... | 0.039 | 0.99 | Foggy ..... | F. Allison, M. A. |
| Hamilton, Ontario | 29.24 | 742.7 | 29.60 | 751.8 | 54.2 | 12.3 | 79 | SE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | 30.08 | 764.0 | 30.11 | 764.8 | 41 | 5.0 | 87 | SW | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Overcast.... | E. Weedon. |
| *Kingston, Ontario | 29.33 | 745.0 | 29.66 | 753.4 | 50 | 10.0 | 90 | SW | 3 | 1.3 | ..... | ..... | 10ks | ..... | Calm | 0.20 | 5.1 | Cloudy..... | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.02 | 762.5 | 30.06 | 763.5 | 36.0 | 2.2 | ..... | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Misty..... | C. H. Rigby. |
| *Montreal, Quebec | 29.45 | 748.0 | 29.65 | 753.1 | 63 | 17.2 | 80 | S | 25 | 11.2 | ..... | 8k | Haze | E | ..... | 0 | 0 | Cloudy..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 28.83 | 732.3 | 29.51 | 749.5 | 52 | 11.1 | 76 | S | 22 | 9.8 | ..... | 2ck | 5ks | SW | SW | 0.48 | 12.2 | Fair..... | Rev. R. Mosley. |
| Peterboro, Ontario | 28.88 | 733.5 | 29.62 | 752.3 | 52.9 | 11.6 | 80 | E | ..... | ..... | ..... | 0 | 5ks | ..... | ..... | 0 | 0 | Bright..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 28.92 | 734.6 | 29.59 | 751.6 | 51 | 10.6 | 86 | S | 18 | 8.0 | ..... | 2ck | 0 | SW | ..... | 0.68 | 14.7 | Fair ..... | H. Morgan. |
| Port Hastings, N. S | 30.00 | 762.0 | 30.06 | 763.5 | 35.6 | 2.0 | ..... | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Foggy ..... | Peter Grant. |
| Port Stanley, Ontario | 28.92 | 734.6 | 29.56 | 750.8 | 48 | 8.9 | 98 | S | 8 | 3.6 | ..... | 10k | 0 | SW | ..... | 0.43 | 10.9 | Cloudy..... | M. Payne. |
| *Quebec, Quebec | 29.49 | 749.0 | 29.81 | 757.2 | 51 | 10.6 | 93 | E | ..... | ..... | ..... | Haze | Haze | ..... | E | 0 | 0 | Hazy ..... | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.08 | 738.6 | 29.52 | 749.8 | 63 | 17.2 | 66 | S | 8 | 3.6 | ..... | 0 | 2s | ..... | SW | 0.27 | 6.9 | Fair ..... | W. H. McIntyre. |
| St. Andrews, N. B | 29.92 | 760.0 | 29.97 | 761.2 | 44 | 6.7 | 99 | S | 3 | 1.3 | ..... | ..... | Fog | ..... | ..... | 0.03 | 0.8 | Foggy..... | Dr. Gove. |
| St. John, N. B | 29.86 | 758.4 | 30.03 | 762.7 | 42 | 5.6 | 91 | S | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0.020 | 0.51 | Foggy ..... | G. Murdock, C. E. |
| *Saugeen, Ontario | 28.77 | 730.7 | 29.46 | 748.3 | 52 | 11.1 | 78 | S | 22 | 9.8 | ..... | ..... | 10ks | ..... | S | 0.05 | 1.3 | Cloudy ..... | K. Stewart. |
| Stayner, Ontario | 28.77 | 730.7 | 29.53 | 750.0 | 54 | 12.2 | 71 | SE | 13 | 5.8 | ..... | 5k | 0 | SW | ..... | 0.23 | 5.8 | Cloudy..... | R. J. Cole. |
| Stratford, Ontario | 28.28 | 718.3 | 29.54 | 750.3 | 49.0 | 9.4 | 89 | SW | 11 | 4.9 | ..... | ..... | 10ks | ..... | ..... | 0.223 | 5.67 | Cloudy..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.05 | 763.3 | 30.08 | 764.0 | 38 | 3.3 | 95 | SW | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0.01 | 0.3 | Cloudy..... | T. C. Hill. |
| *Toronto, Ontario | 29.24 | 742.7 | 29.62 | 752.3 | 51 | 10.6 | 80 | S | 7 | 3.1 | ..... | 0 | 2ks | ..... | SW | 0.40 | 10.2 | Clear..... | Magnetic Observatory. |
| Windsor, N. S | 29.92 | 760.0 | 30.02 | 762.5 | 54.0 | 12.2 | 97 | SE | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Fair..... | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 43.0 | 6.1 | 59 | NE | ..... | ..... | ..... | 4k | 5s | ..... | ..... | 0 | 0 | Fair..... ..... | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Byt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0 - 10 | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.48 | 748.8 | 29.69 | 754.1 | 64 | 17.8 | 78 | S | 18 | 8.0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Alpena, Michigan | 28.70 | 729.0 | 29.31 | 744.5 | 50 | 10.0 | 78 | SW | 16 | 7.2 | ..... | 0 | 8ks | ..... | SW | 0.49 | 12.4 | Fair | |
| Atlantic City, New Jersey | 29.75 | 755.6 | 29.77 | 756.1 | 56 | 13.3 | 93 | S | 20 | 8.9 | ..... | ..... | 10n | ..... | Calm | Inap. | Inap. | Light rain | |
| Augusta, Georgia | 29.69 | 754.1 | 29.86 | 758.4 | 69 | 20.6 | 61 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0.11 | 2.8 | Clear | |
| Baltimore, Maryland | 29.68 | 753.9 | 29.72 | 754.9 | 61 | 16.1 | 94 | S | 6 | 2.7 | ..... | 2k | 8s | SW | W | 0.55 | 14.0 | Cloudy | |
| Barnegat, New Jersey | 29.76 | 755.9 | 29.78 | 756.4 | 56 | 13.3 | 90 | S | 22 | 9.8 | ..... | ..... | 10s | ..... | S | 0.01 | 0.3 | Threatening | |
| Bismarck, Dakota | 28.12 | 714.2 | 29.97 | 761.2 | 44 | 6.7 | 60 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Boise City, Idaho | 27.14 | 689.3 | 30.02 | 762.5 | 43 | 6.1 | 75 | Calm | 0 | 0 | ..... | 2k | 0 | Calm | ..... | 0 | 0 | Fair | |
| Boston, Massachusetts | 29.74 | 755.4 | 29.89 | 759.2 | 62.5 | 16.9 | 81 | S | 12 | 5.4 | ..... | 2c | 5s | S | SW | Inap. | Inap. | Fair | |
| Brackettville, Texas | 28.79 | 731.3 | 29.81 | 757.2 | 60 | 15.6 | 55 | E | 5 | 2.2 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| Breckenridge, Minnesota | 28.79 | 731.3 | 29.79 | 756.7 | 41 | 5.0 | 87 | N | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Brownsville, Texas | 29.90 | 759.4 | 29.96 | 761.0 | 63 | 17.2 | 83 | E | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 28.92 | 734.6 | 29.59 | 751.6 | 54 | 12.2 | 74 | S | 9 | 4.0 | ..... | 1c | 0 | S | ..... | 0.57 | 14.5 | Clear | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 56 | 13.3 | 51 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.46 | 748.3 | 29.70 | 754.4 | 64 | 17.8 | 72 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| Cairo, Illinois | 29.35 | 745.5 | 29.73 | 755.1 | 58 | 14.4 | 70 | SW | 1 | 0.4 | ..... | 1cs | 0 | Calm | ..... | 0.02 | 0.5 | Clear | |
| Camp Grant, Arizona | 25.29 | 642.4 | 30.09 | 764.3 | 50 | 10.0 | 46 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | 26.76 | 679.7 | 30.25 | 768.3 | 43 | 6.1 | 75 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.42 | 696.5 | 29.99 | 761.7 | 45 | 7.2 | 85 | SW | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Cape Hatteras, N. Carolina | 29.81 | 757.2 | 29.81 | 757.2 | 67 | 19.4 | 100 | SE | 24 | 10.7 | ..... | 0 | 8s | ..... | SW | 0.45 | 11.4 | Clearing | |
| Cape Henry, Virginia | 29.75 | 755.6 | 29.77 | 756.1 | 56 | 13.3 | 94 | E | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 1.54 | 39.1 | Threatening | |
| Cape Lookout, N. Carolina | 29.78 | 756.4 | 29.80 | 756.9 | 68 | 20.0 | 90 | S | 34 | 15.2 | ..... | ..... | 10ks | ..... | SW | 0.60 | 15.2 | Cloudy | |
| Cape May, New Jersey | 29.76 | 755.9 | 29.79 | 756.7 | 58 | 14.4 | 94 | SE | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | 0.30 | 7.6 | Heavy rain | |
| Charleston, South Carolina | 29.82 | 757.4 | 29.89 | 759.2 | 66 | 18.9 | 64 | NW | 8 | 3.6 | ..... | 1ck | 0 | W | ..... | 0.05 | 1.3 | Clear | |
| Cheyenne, Wyoming | 24.02 | 610.1 | 29.96 | 761.0 | 38 | 3.3 | 63 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 28.82 | 732.0 | 29.48 | 748.8 | 51 | 10.6 | 86 | W | 6 | 2.7 | ..... | 8k | 2s | W | W | 0.96 | 24.4 | Cloudy | |
| Cincinnati Ohio | 29.00 | 736.6 | 29.63 | 752.6 | 56 | 13.3 | 75 | S | 6 | 2.7 | ..... | ..... | 9ks | ..... | SW | 0.10 | 2.5 | Cloudy | |
| Cleveland, Ohio | 28.90 | 734.0 | 29.60 | 751.8 | 53 | 11.7 | 67 | S | 15 | 6.7 | ..... | 2ck | 0 | W | ..... | 0.23 | 5.8 | Clear | |
| Concho, Texas | 28.07 | 713.0 | 29.74 | 755.4 | 58 | 14.4 | 53 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.48 | 748.8 | 29.94 | 760.5 | 59 | 15.0 | 76 | SW | 4 | 1.8 | ..... | 2cs | 0 | W | ..... | 0 | 0 | Fair | |
| Davenport, Iowa | 28.95 | 735.3 | 29.57 | 751.1 | 50 | 10.0 | 86 | W | 8 | 3.6 | ..... | ..... | 10s | ..... | W | 0.05 | 1.3 | Cloudy | |
| Deadwood, Dakota | 25.38 | 644.6 | ..... | ..... | 33 | 0.6 | 79 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denison, Texas | 29.14 | 740.1 | 29.93 | 760.2 | 61 | 16.1 | 66 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Denver, Colorado | 24.80 | 629.9 | 30.02 | 762.5 | 35 | 1.7 | 53 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Detroit, Michigan | 28.85 | 732.8 | 29.49 | 749.0 | 53 | 11.7 | 73 | SW | 12 | 5.4 | ..... | ..... | 10s | ..... | SW | 0.04 | 1.0 | Cloudy | |
| Dodge City, Kansas | 27.38 | 695.4 | 29.69 | 754.1 | 47 | 8.3 | 60 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Dubuque, Iowa | 28.86 | 733.0 | 29.53 | 750.0 | 50 | 10.0 | 86 | NW | 7 | 3.1 | ..... | ..... | 10n | ..... | NW | 0.02 | 0.5 | Light rain | |
| Duluth, Minnesota | 28.94 | 735.1 | 29.61 | 752.1 | 42 | 5.6 | 74 | N | 5 | 2.2 | ..... | ..... | 10s | ..... | NE | 0.08 | 2.0 | Cloudy | |
| Eagle Pass, Texas | 29.20 | 741.7 | 29.94 | 760.5 | 57 | 13.9 | 75 | SE | 5 | 2.2 | ..... | 5c | 0 | S | ..... | 0 | 0 | Fair | |
| Eastport, Maine | 29.91 | 759.7 | 29.98 | 761.5 | 48 | 8.9 | 93 | S | 6 | 2.7 | ..... | ..... | Fog | ..... | Calm | 0.19 | 4.8 | Foggy | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 64 | 17.8 | 33 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 28.90 | 734.0 | 29.58 | 751.3 | 57 | 13.9 | 69 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.36 | 9.1 | Clear | |
| Escanaba, Michigan | 28.73 | 729.7 | 29.36 | 745.7 | 46 | 7.8 | 84 | NW | 12 | 5.4 | ..... | ..... | 10n | ..... | NW | 0.93 | 23.6 | Light rain | |
| Florence, Arizona | 28.26 | 717.8 | 29.86 | 758.4 | 50 | 10.0 | 79 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | 24.10 | 612.1 | 30.10 | 764.5 | 48 | 8.9 | 56 | NW | 12 | 5.4 | ..... | 0 | c | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.46 | 646.7 | 29.53 | 750.0 | 43 | 6.1 | 43 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.16 | 639.0 | 30.12 | 765.0 | 59 | 15.0 | 40 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.33 | 745.0 | 29.86 | 758.4 | 52 | 11.1 | 86 | N | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.69 | 728.7 | 29.96 | 761.0 | 51 | 10.6 | 65 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.18 | 741.2 | 29.22 | 742.2 | 27 | — 2.8 | 100 | E | 39 | 17.4 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Fort Sill, Indian Territory | 28.72 | 729.5 | 29.82 | 757.4 | 54 | 12.2 | 73 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Galveston, Texas | 29.93 | 760.2 | 29.97 | 761.2 | 67 | 19.4 | 74 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 28.83 | 732.3 | 29.46 | 748.3 | 48 | 8.9 | 93 | SW | 8 | 3.6 | ..... | ..... | 10ks | ..... | SW | 0.59 | 15.0 | Cloudy | |
| Indianapolis, Indiana | 28.82 | 732.0 | 29.56 | 750.8 | 55 | 12.8 | 74 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | SW | 0.06 | 1.5 | Cloudy | |
| Indianola, Texas | 28.94 | 735.1 | 29.96 | 761.0 | 71 | 21.7 | 75 | S | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.81 | 731.8 | 29.92 | 760.0 | 58 | 14.4 | 53 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 29.88 | 758.9 | 29.90 | 759.4 | 72 | 22.2 | 54 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Keokuk, Iowa | 28.99 | 736.3 | 29.59 | 751.6 | 51 | 10.6 | 79 | NW | 12 | 5.4 | ..... | 0 | 7s | ..... | NW | 0.06 | 1.5 | Fair | |
| Key West, Florida | 29.90 | 759.4 | 29.93 | 760.2 | 78 | 25.6 | 82 | S | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Kittyhawk, North Carolina | 29.74 | 755.4 | 29.77 | 756.1 | 69 | 20.6 | 90 | SW | 40 | 17.9 | ..... | ..... | 10ks | ..... | SW | 0 | 0 | Threatening | |
| Knoxville, Tennessee | 28.82 | 732.0 | 29.81 | 757.2 | 54 | 12.2 | 74 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| La Crosse, Wisconsin | 28.79 | 731.3 | 29.50 | 749.3 | 51 | 10.6 | 79 | N | 10 | 4.5 | ..... | ..... | 10s | ..... | N | 0.02 | 0.5 | Cloudy | |
| La Mesilla, New Mexico | 26.03 | 661.2 | 30.18 | 766.6 | 41 | 5.0 | 56 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.52 | 749.8 | 29.86 | 758.4 | 62 | 16.7 | 83 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 28.95 | 735.3 | 29.78 | 756.4 | 50 | 10.0 | 65 | NW | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.69 | 754.1 | 30.03 | 762.7 | 55 | 12.8 | 81 | Calm | 0 | 0 | ..... | 0 | 8s | ..... | NE | 0 | 0 | Cloudy | |
| Louisville, Kentucky | 29.09 | 738.9 | 29.63 | 752.6 | 58 | 14.4 | 64 | SW | 11 | 4.9 | ..... | 2k | 0 | SW | ..... | 0.07 | 1.8 | Clear | |
| Lynchburg, Virginia | 29.08 | 738.6 | 29.73 | 755.1 | 61 | 16.1 | 83 | W | 4 | 1.8 | ..... | 0 | 8ks | ..... | Calm | 0.69 | 17.5 | Cloudy | |
| Marquette, Michigan | 28.67 | 728.2 | 29.36 | 745.7 | 40 | 4.4 | 100 | NW | 24 | 10.7 | ..... | ..... | 10n | ..... | W | 1.30 | 33.0 | Light rain | |
| Mason, Texas | 28.37 | 720.6 | 30.15 | 765.8 | 51 | 10.6 | 72 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.49 | 749.0 | 29.80 | 756.9 | 62 | 16.7 | 61 | SW | 8 | 3.6 | ..... | 0 | 5ks | ..... | SW | 0.05 | 1.3 | Fair | |
| Milwaukee, Wisconsin | 28.73 | 729.7 | 29.43 | 747.5 | 51 | 10.6 | 86 | W | 7 | 3.1 | ..... | ..... | 10ks | ..... | W | 0.81 | 20.6 | Cloudy | |
| Mobile, Alabama | 29.90 | 759.4 | 29.94 | 760.5 | 65 | 18.3 | 56 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Montgomery, Alabama | 29.68 | 753.9 | 29.91 | 759.7 | 61 | 16.1 | 71 | S | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Morgantown, West Virginia | 28.68 | 728.5 | 29.70 | 754.4 | 58 | 14.4 | 64 | S | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0.95 | 24.1 | Clear | |
| Mt. Washington, N. H. | 23.71 | 602.2 | 30.07 | 763.8 | 42 | 5.6 | 100 | S | 30 | 13.4 | ..... | ..... | 10n | ..... | S | 0.20 | 5.1 | Light rain | |
| Nashville, Tennessee | 29.22 | 742.2 | 29.74 | 755.4 | 61 | 16.1 | 66 | SW | 6 | 2.7 | ..... | 2k | 0 | SW | ..... | 0.16 | 4.1 | Fair | |
| New Haven, Connecticut | 29.70 | 754.4 | 29.82 | 757.4 | 62 | 16.7 | 83 | S | 14 | 6.3 | ..... | 2ck | 2s;hz | Calm | S | Inap. | Inap. | Fair | |
| New London, Connecticut | 29.84 | 757.9 | 29.89 | 759.2 | 53 | 11.7 | 93 | SE | 10 | 4.5 | ..... | 2k | 5s | SW | S | 0 | 0 | Fair | |
| New Orleans, Louisiana | 29.89 | 759.2 | 29.95 | 760.7 | 68 | 20.0 | 74 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Newport, Rhode Island | 29.85 | 758.2 | 29.90 | 759.4 | 56 | 13.3 | 81 | SE | 16 | 7.2 | ..... | 7k | 0 | SW | ..... | 0 | 0 | Fair | |
| New York, New York | 29.59 | 751.6 | 29.77 | 756.1 | 57 | 13.9 | 93 | SE | 20 | 8.9 | ..... | ..... | 10s;fg | ..... | SE | 0 | 0 | Cloudy | |
| Norfolk, Virginia | 29.71 | 754.6 | 29.76 | 755.9 | 62 | 16.7 | 94 | S | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 1.00 | 25.4 | Light rain | |
| North Platte, Nebraska | 27.07 | 687.6 | 29.70 | 754.4 | 36 | 2.2 | 85 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Olympia, Washington Ter. | 30.04 | 763.0 | 30.08 | 764.0 | 39 | 3.9 | 91 | S | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0.15 | 3.8 | Cloudy | |
| Omaha, Nebraska | 28.68 | 728.5 | 29.74 | 755.4 | 48 | 8.9 | 70 | NW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Oswego, New York | 29.33 | 745.0 | 29.64 | 752.8 | 61 | 16.1 | 82 | S | 6 | 2.7 | ..... | ..... | 10n | ..... | Calm | 0.99 | 25.1 | Light rain | |
| Pembina, Dakota | 29.06 | 738.1 | 29.91 | 759.7 | 35.5 | 1.9 | 85 | NW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 6 | 0 | Clear | |
| Philadelphia, Pennsylvania | 29.71 | 754.6 | 29.76 | 755.9 | 61 | 16.1 | 94 | S | 12 | 5.4 | ..... | ..... | 10n | ..... | S | 0.07 | 1.8 | Heavy rain | |
| Phœnix, Arizona | 28.75 | 730.2 | 30.55 | 776.0 | 53 | 11.7 | 67 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.75 | 450.8 | 29.96 | 761.0 | 10 | —12.2 | 58 | W | 28 | 12.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pioche, Nevada | 23.97 | 608.8 | 29.74 | 755.4 | 41 | 5.0 | 57 | S | 1 | 0.4 | ..... | 10k | 0 | S | ..... | 0 | 0 | Cloudy | |
| Pittsburg, Pennsylvania | 28.87 | 733.3 | 29.66 | 753.4 | 55 | 12.8 | 68 | SW | 9 | 4.0 | ..... | 1k | 0 | W | ..... | 0.78 | 19.8 | Clear | |
| Port Huron, Michigan | 28.84 | 732.5 | 29.47 | 748.5 | 53 | 11.7 | 80 | SW | 16 | 7.2 | ..... | ..... | 10ks | ..... | SW | 0.04 | 1.0 | Cloudy | |
| Portland, Maine | 29.88 | 758.9 | 29.93 | 760.2 | 53 | 11.7 | 86 | SE | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | Inap. | Inap. | Foggy | |
| Portland, Oregon | 30.08 | 764.0 | 30.19 | 766.8 | 38 | 3.3 | 90 | SE | 2 | 0.9 | ..... | ..... | 10ks | ..... | SE | 0.12 | 3.0 | Cloudy | |
| Prescott, Arizona | 24.74 | 628.4 | 30.10 | 764.5 | 38 | 3.3 | 63 | SW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Punta Rassa, Florida | 29.87 | 758.7 | 29.89 | 759.2 | 78 | 25.6 | 82 | S | 22 | 9.8 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Red Bluff, California** | 29.63 | 752.6 | 29.99 | 761.7 | 55 | 12.8 | 80 | SE | 4 | 1.8 | ..... | 5k | 0 | S | ..... | 0 | 0 | Fair | |
| **Rochester, New York** | 29.02 | 737.1 | 29.62 | 752.3 | 54 | 12.2 | 87 | W | 4 | 1.8 | ..... | 0 | 8s | ..... | W | 0.08 | 2.0 | Clearing | |
| **Roseburg, Oregon** | 29.57 | 751.1 | 30.16 | 766.1 | 38 | 3.3 | 96 | Calm | 0 | 0 | ..... | 8cs | 2s | Calm | Calm | 0.02 | 0.5 | Fair | |
| **Sacramento, California** | 29.91 | 759.7 | 29.99 | 761.7 | 50 | 10.0 | 79 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **St. Louis, Missouri** | 29.11 | 739.4 | 29.66 | 753.4 | 53 | 11.7 | 73 | SW | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 0.04 | 1.0 | Cloudy | |
| **St. Marks, Florida** | 29.93 | 760.2 | 29.94 | 760.5 | 63 | 17.2 | 78 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.48 | 12.2 | Clear | |
| **St. Paul, Minnesota** | 28.76 | 730.5 | 29.57 | 751.1 | 48 | 8.9 | 62 | N | 16 | 7.2 | ..... | ..... | 10s | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| **Salt Lake City, Utah** | 25.55 | 649.0 | 29.88 | 758.9 | 47 | 8.3 | 48 | SE | 4 | 1.8 | ..... | 2k | 0 | SW | ..... | 0 | 0 | Fair | |
| **San Antonio, Texas** | 29.29 | 744.0 | 29.87 | 758.7 | 58 | 14.4 | 88 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **San Diego, California** | 29.99 | 761.7 | 30.06 | 763.5 | 57 | 13.9 | 81 | NW | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| **Sandusky, Ohio** | 28.92 | 734.6 | 29.57 | 751.1 | 56 | 13.3 | 69 | SW | 16 | 7.2 | ..... | 5c | 0 | S | ..... | 0.04 | 1.0 | Fair | |
| **Sandy Hook, New Jersey** | 29.72 | 754.9 | 29.75 | 755.6 | 56 | 13.3 | 94 | SW | 24 | 10.7 | ..... | 10k | Fog | W | SW | 0 | 0 | Cloudy | |
| **San Francisco, California** | 29.98 | 761.5 | 30.05 | 763.3 | 49 | 9.4 | 79 | W | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Santa Fé, New Mexico** | 23.27 | 591.0 | 29.81 | 757.2 | 42 | 5.6 | 34 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Savannah, Georgia** | 29.79 | 756.7 | 29.88 | 758.9 | 68 | 20.0 | 60 | NW | 8 | 3.6 | ..... | 2ck | 0 | Calm | ..... | 0.40 | 10.2 | Clear | |
| **Shreveport, Louisiana** | 29.72 | 754.9 | 29.94 | 760.5 | 63 | 17.2 | 72 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Smithville, North Carolina** | 29.78 | 756.4 | 29.82 | 757.4 | 70 | 21.1 | 85 | W | 6 | 2.7 | ..... | 2k | 0 | SW | ..... | Inap. | Inap. | Fair | |
| **Springfield, Massachusetts** | 29.63 | 752.6 | 29.76 | 755.9 | 63 | 17.2 | 83 | S | 7 | 3.1 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy | |
| **Stockton, Texas** | 26.91 | 683.5 | 29.91 | 759.7 | 50 | 10.0 | 32 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Thatcher's Island, Mass** | 29.87 | 758.7 | 29.92 | 760.0 | 53 | 11.7 | 93 | S | 16 | 7.2 | ..... | 5c | Fog | NW | SW | 0 | 0 | Foggy | |
| **Toledo, Ohio** | 28.87 | 733.3 | 29.52 | 749.8 | 55 | 12.8 | 68 | SW | 8 | 3.6 | ..... | 5k | 2ks | SW | SW | 0.20 | 5.1 | Fair | |
| **Tucson, Arizona** | ..... | ..... | ..... | ..... | 53 | 11.7 | 79 | SE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Tybee Island, Georgia** | 29.86 | 758.4 | 29.89 | 759.2 | 65 | 18.3 | 78 | W | 14 | 6.3 | ..... | 5ck | 0 | SW | ..... | 0.01 | 0.3 | Fair | |
| **Umatilla, Oregon** | 29.82 | 757.4 | ..... | ..... | 39 | 3.9 | 82 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | W | 0 | 0 | Fair | |
| **Vicksburg, Mississippi** | 29.70 | 754.4 | 29.95 | 760.7 | 65 | 18.3 | 63 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Virginia City, Montana** | 24.16 | 613.6 | 29.64 | 752.8 | 42 | 5.6 | 58 | Calm | 0 | 0 | ..... | 2c | 2s | W | Calm | 0 | 0 | Fair | |
| **Visalia, California** | 29.64 | 752.8 | 30.02 | 762.5 | 52 | 11.1 | 79 | Calm | 0 | 0 | ..... | 0 | 5ks | ..... | N | 0 | 0 | Fair | |
| **Washington, D. C.** | 29.63 | 752.6 | 29.74 | 755.4 | 63 | 17.2 | 89 | S | 11 | 4.9 | ..... | 5k | 5ks | S | S | 0.53 | 13.5 | Cloudy | |
| **Wickenburg, Arizona** | ..... | ..... | ..... | ..... | 46 | 7.8 | 69 | W | ..... | ..... | 1 | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| **Wilmington, N. Carolina** | 29.71 | 754.6 | 29.79 | 756.7 | 72 | 22.2 | 80 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.11 | 2.8 | Clear | |
| **Winnemucca, Nevada** | 25.58 | 649.7 | 29.94 | 760.5 | 45 | 7.2 | 68 | S | 7 | 3.1 | ..... | 5ck | 5s | S | S | 0 | 0 | Cloudy | |
| **Wood's Holl, Mass** | 29.89 | 759.2 | 29.95 | 760.7 | 59 | 15.0 | 76 | S | 20 | 8.9 | ..... | 5cs | Haze | Calm | Calm | 0 | 0 | Fair | |
| **Yankton, Dakota** | 28.58 | 725.9 | 29.86 | 758.4 | 46 | 7.8 | 69 | NW | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| **Yuma, Arizona** | 29.75 | 755.6 | 29.91 | 759.7 | 55 | 12.8 | 55 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| **St. Paul's Island, Alaska** | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| **York Factory, B. A** | 29.85 | 758.2 | 29.90 | 759.4 | 28.0 | — 2.2 | 94 | N | 11 | 4.9 | ..... | 3cs | 0 | W | ..... | 0 | 0 | Fair | J. Fortescue, W. Wood. |
| **Havana, Cuba, W. I** | 29.90 | 759.4 | 29.92 | 760.0 | 80 | 26.7 | 78 | SE | 2.4 | 1.1 | ..... | 8c | 0 | W | ..... | 0 | 0 | Fair | Chas. Hasselbrink. |
| **Kingston, Jamaica, W. I** | 30.13 | 765.3 | 30.14 | 765.5 | 79 | 26.1 | 86 | Calm | 0 | 0 | ..... | 8c | 8n | Calm | ..... | 0 | 0 | ..... | James Gall. |
| **Navassa, W. I** | 29.86 | 758.4 | 29.94 | 760.5 | 81 | 27.2 | ..... | SE | 3 | 1.3 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | F. M. Everett. |
| **Paramaribo, D. Guiana, S. A** | 29.94 | 760.5 | 29.94 | 760.5 | 83 | 28.3 | 83 | NE | ..... | ..... | 2 | 4ck | 5k | E | ..... | 0.260 | 6.60 | Fair | C. J. Hering. |
| **Batavia, Dutch Guiana, S. A** | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dr. H. Groot. |
| **Medellin, Colombia, S. A** | 25.22 | 640.6 | ..... | ..... | 67.5 | 19.7 | 88 | Calm | ..... | ..... | 0 | 4k | 4ks | ..... | ..... | 1.05 | 26.7 | ..... | Thomas Herran. |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medillin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,550 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3,488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er. 0—10. | Clouds. Amount. Low'r. 0—10. | Clouds. Direction. Up'er. From— | Clouds. Direction. Low'r. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.98 | 761.5 | 51 | 10.6 | 48 | 8.9 | 85 | WSW | 17 | 7.6 | .... | ..... | 0† | ..... | S | 0 | 0 | ..... | ..... | Cloudy†..... | |
| Navy Yard, Pensacola, Fla. | 30.04 | 763.0 | 66 | 18.9 | 66 | 18.9 | 89 | W | 1 | 0.4 | .... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear ..... | |
| Navy Yard, Portsmouth, N.H. | 29.97 | 761.2 | 75 | 23.9 | 55 | 12.8 | 100 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | ..... | Foggy..... | |
| Naval Hospital, Yokohama, Japan | 30.12* | 765.0* | 61.8 | 16.6 | 55.2 | 12.9 | 87 | E | ..... | ..... | 3 | ..... | 5k;s;hz. | ..... | E | 0 | 0 | ..... | ..... | Fair ..... | |
| Adams, Panama | 29.97 | 761.2 | 81 | 27.2 | 80 | 26.7 | 91 | NW | ..... | ..... | 1 | ..... | 2 | ..... | NW | ..... | ..... | Smooth | ..... | Fair ..... | |
| Alliance, Villefranche, France | 29.65‡ | 753.1‡ | ..... | ..... | 60 | 15.6 | 76 | NW | ..... | ..... | 1 | ..... | 0† | ..... | NW | ..... | ..... | Light | S | Rainy ..... | |
| Ashuelot, Nagasaki, Japan | 30.18 | 766.6 | 64 | 17.8 | 60 | 15.6 | 100 | NE | ..... | ..... | 0–1 | ..... | 5 | ..... | Calm | ..... | ..... | ..... | ..... | ..... | |
| Canonicus, New Orleans, La | 29.94 | 760.5 | 48 | 8.9 | 64 | 17.8 | 89 | SW | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Colorado, New York, N. Y. | 29.74‡ | 755.4‡ | ..... | ..... | 58 | 14.4 | 94 | SSE | 17 | 7.6 | ..... | ..... | 10 | ..... | SSE | 0 | 0 | ..... | ..... | Threatening | |
| Constellation, Havre, France | 29.78‡ | 756.4‡ | ..... | ..... | 54 | 12.2 | 93 | NE | ..... | ..... | 3 | ..... | 5 | ..... | NE | ..... | ..... | ..... | ..... | Fair..... | |
| Constitution, Havre, France | 29.67‡ | 753.6‡ | ..... | ..... | 55 | 12.8 | 87 | NE | ..... | ..... | 3 | ..... | 5 | ..... | NE | ..... | ..... | ..... | ..... | Fair ..... | |
| Despatch, Constantinople, Turkey | 30.02‡ | 762.5‡ | ..... | ..... | 60 | 15.6 | 65 | SSW | ..... | ..... | 3 | ..... | 2 | ..... | SW | ..... | ..... | ..... | ..... | Clear..... | |
| Franklin, Norfolk, Va | 29.98 | 761.5 | 69 | 20.6 | 63 | 17.2 | 83 | SE | 8.6 | 1.6 | .... | ..... | 10 | ..... | Calm | 1. | 25. | ..... | ..... | Raining..... | |
| Gettysburg Valetta, Malta | 29.84‡ | 757.9‡ | ..... | ..... | 69 | 20.6 | 95 | SSW | ..... | ..... | 4 | ..... | 8 | ..... | Calm | Blank | Blank | ..... | ..... | Fair..... | |
| Guard, Porto Grande, Cape Verde Islands | 30.00 | 762.0 | 75 | 23.9 | 74 | 23.3 | 69 | W | ..... | ..... | 2 | ..... | 2 | ..... | W | ..... | ..... | Smooth | ..... | Clear ..... | |
| Hartford, Montevideo, Uraguay | 29.93 | 760.2 | 69 | 20.6 | 71 | 21.7 | 90 | Calm | 0 | 0 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | Smooth | ..... | Foggy ..... | |
| Marion, Smyrna, Turkey | 30.00 | 762.0 | 59 | 15.0 | 62 | 16.7 | 66 | WSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Michigan, Erie, Pa | 29.10 | 739.1 | 60 | 15.6 | 56 | 13.3 | 69 | SW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Monocacy, Shanghai, China | 30.10‡ | 764.5‡ | ..... | ..... | 58 | 14.4 | 82 | N | ..... | ..... | 2 | ..... | 10 | ..... | N | ..... | ..... | ..... | ..... | Cloudy..... | |
| New Hampshire, Port Royal, S. C | 30.06† | 763.5† | ..... | ..... | 67 | 19.4 | 69 | NNW | 14 | 6.3 | ..... | ..... | 2 | ..... | W | 0.01 | 0.3 | ..... | ..... | Clear..... | |
| Omaha, N. 41° 00′, W. 69° 50′ | 30.03* | 762.7* | 54 | 12 2 | 52 | 11.1 | 93 | SE | 5 | 2.2 | ..... | ..... | 2 | ..... | SE | 0 | 0 | Smooth | ..... | Bright ..... | |
| Onward, Callao, Peru | 30.05† | 763.3† | ..... | ..... | 67 | 19.4 | 89 | SSE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Long | W | Foggy ..... | |
| Ossipee, N. 31° 39′ W. 78° 40′ | 29.93‡ | 760.2‡ | ..... | ..... | 71 | 21.7 | 75 | NNW | ..... | ..... | 6 | ..... | 2 | ..... | NW | ..... | ..... | Rough | SE | Clear..... | |
| Palos, Shanghai, China | 30.14* | 765.5* | 66 | 18.9 | 56 | 13.3 | 100 | NW | ..... | ..... | 3 | ..... | 10 | ..... | N&W | ..... | ..... | ..... | ..... | Rainy..... | |
| Pensacola, N. 37° 50′, W. 124° 00′ | 30.17 | 766.3 | 53 | 11.7 | 51 | 10 6 | 79 | NNW | 19 | 8.5 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | Smooth | NW | Fair ..... | |
| Plymouth, N. 29° 23′ W. 70° 55′ | 30.08‡ | 764.0‡ | ..... | ..... | 69 | 20.6 | 85 | SSE | ..... | ..... | 2 | ..... | 5 | ..... | SSE | ..... | ..... | Smooth | ..... | Clear ..... | |
| Powhatan, Norfolk, Va | 29.76‡ | 755.9‡ | ..... | ..... | 66 | 18.9 | 89 | SSE | 9.0 | 4.0 | ..... | ..... | 10 | ..... | ..... | 1.10 | 27.9 | ..... | ..... | Rainy... ..... | |
| Ranger, Amoy, China | 30.13* | 765.3* | ..... | ..... | 70 | 21.1 | 85 | Calm | ..... | ..... | 0 | ..... | 0† | ..... | ..... | ..... | ..... | Smooth | ..... | D. clouds†... | |
| Rio Bravo, Brownsville, Texas | 29.92 | 760.0 | 68 | 20.0 | 67 | 19 4 | 89 | SE | ..... | ..... | 1 | ..... | 9 | ..... | NW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Santee, Annapolis, Md | 29.70‡ | 754.4‡ | ..... | ..... | 61 | 16.1 | 88 | SW | ..... | ..... | 3 | ..... | 10 | ..... | SW | 0.45 | 11.4 | ..... | ..... | Cloudy..... | |
| Saratoga, Washington, D. C | 29.70 | 754.4 | 66 | 18.9 | 65 | 18.3 | 100 | ESE | ..... | ..... | 1 | ..... | 4 | ..... | E | Slight | Slight | ..... | ..... | Clear..... | |
| St. Louis, League Island, Pa | 29.71 | 754.6 | 68 | 20.0 | 58 | 14.4 | 94 | SE | 15 | 6.7 | ..... | ..... | 10 | ..... | S | 0.1 | 3. | ..... | ..... | Raining..... | |
| Supply, Havre, France | 29.77 | 756.1 | 57 | 13.9 | 56 | 13.3 | 75 | NNE | ..... | ..... | 3 | ..... | 5 | ..... | NNE | ..... | ..... | ..... | ..... | Clear ..... | |
| Swatara, Key West, Fla | 29.94‡ | 760.5‡ | ..... | ..... | 79 | 26.1 | 86 | SSE | ..... | ..... | 2 | ..... | 2 | ..... | S&E | ..... | ..... | ..... | ..... | Clear..... | |
| Tennessee, Kantara, Suez Canal | 29.97* | 761.2* | 85 | 29.4 | 75 | 23.9 | 48 | N | 3 | 1.3 | ..... | ..... | 1 | ..... | N | 0 | 0 | ..... | ..... | D. clouds..... | |
| Trenton, Villefranche, France | 29.62‡ | 752.3‡ | ..... | ..... | 61 | 16.1 | 88 | NW | ..... | ..... | 0–1 | ..... | 10 | ..... | N&E | 0.2 | 5. | ..... | ..... | Drizzling..... | |
| Tuscarora, N. 16° 21′, W. 98° 37′ | 29.81 | 757.2 | 82 | 27.8 | 79 | 26.1 | 86 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Long | SW | Hazy & misty | |
| Vandalia, N. 41° 00′, E. 12° 07′ | 29.78‡ | 756.4‡ | ..... | ..... | 61 | 16.1 | 88 | SSW | ..... | ..... | 3 | ..... | 2 | ..... | SW | ..... | ..... | Smooth | SSW | Clear. ..... | |
| Wabash, Boston, Mass | 29.88‡ | 758.9‡ | ..... | ..... | 66 | 18.9 | 89 | S | 10 | 4.5 | ..... | ..... | 10 | ..... | ..... | 0.04 | 1.0 | ..... | ..... | Cloudy..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable; the position given is that at noon, local time, instead of that at 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | TRUE COURSE TOWARD— | HOURLY RATE IN KNOTS. | BAROMETER REDUCED TO SEA-LEVEL. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. | | | | CLOUDS. | | | | SEA-SWELL. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | CHARACTER. | DIRECTION FROM— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Peking, N. 34° 11′, E. 137° 40′ | | | 30.19† | 766.8† | 63 | 17.2 | 78 | W | 13.0 | 5.8 | | 7 | | W | | Smooth | Calm | D. clouds. | Capt. Seabury. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. Colima, N. 21° 57′, W. 109° 10′ | | | 29.94† | 760.5† | 68 | 20.0 | 95 | NW | | | 2 | 5 | | NW | | | | | Capt. Maury. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | D. clouds. | Capt. Searle. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. W. H. Thompson. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic, Mersey River | | | 29.88† | 758.9† | 55 | 12.8 | 93 | E | | | 4 | | | E | | | | D. clouds. | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Aneroid.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, N. 36° 45′, W. 144° 01′ | | | 30.04* | 763.0* | | | | SW | | | 6 | | n | | SW | High | W | | Capt. John Metcalf. |
| S. S. Gaelic, N. 42° 50′, E. 168° 40′ | | | 29.87† | 758.7† | 42 | 5.6 | 83 | W | | | 4 | | k | | W | Following. | W | D. clouds. | Capt. W. H. Kidley |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andrressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig, N. 47° 46′, W. 28° 19′ | | | 29.75 | 755.6 | 55.1 | 12.8 | 93 | SSE | | | 6 | | 10 | | S | Little rough. | SE | Overcast. | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Obser |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | Character | Direction From— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, Philadelphia, Pa | | | 29.76* | 755.9* | 61 | 16.1 | 94 | SSW | | | 4 | | 9 | | SSW | | | Cloudy | Captain Sargent. |
| S. S. Ohio, N. 47° 50′, W. 32° 56′ | | | 29.56 | 750.8 | 58 | 14.4 | 88 | E | | | 0 | | 7? | | E | Rough | Irregular. | Clear? | Captain Morrison. |
| S. S. Pennsylvania, St. George's Channel | | | 30.01† | 762.2† | 61 | 16.1 | ?? | E | | | 4 | | 1 | | E | Light | SE | Clear | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for elevation; instrumental error not known. †Corrected for temperature and elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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**ALLAN LINE MARINE SERIES.**

Furnished by the coöperation of A. Schumacher, & Co., Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| S. S. Scandinavian, Halifax, N. S. | | | 30.09 | 764.3 | 45 | 7.2 | | SE | | | 2 | | 10 | | | | | Foggy | Capt. W. Richardson. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.,**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller St. John, N. B. | | | 29.92 | 760.0 | 46 | 7.8 | 84 | Calm | 0 | 0 | | | Fog | | | | | Dense fog | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 30.14 | 765.5 | 6 | —14.4 | 79 | Calm | 0 | 0 | | c | 0 | WSW | | | | Fair | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg$^{d}$.) Chief Signal Officer. U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 26, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:38 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | | | 30.01 | 762.3 | 64.6 | 18.1 | 82 | NE | | | 5 | | 2 | | | 0 | 0 | Fair | Dr. Ollive. |
| Nemours | | | 30.04 | 762.9 | 68.5 | 20.3 | 64 | N | | | 1 | | 3 | | | 0 | 0 | Pretty fair. | Michel. |
| Algiers | | | 29.94 | 760.4 | 68.0 | 20.0 | 58 | WNW | | | 5 | | 1 | | | 0 | 0 | Very fair | Towilliere. |
| La Calle | | | 29.93 | 760.3 | 66.9 | 19.4 | 77 | NNW | | | 6 | | 3 | | | 0 | 0 | Pretty fair. | Boulangeot. |
| Tunis | | | 29.91 | 759.6 | 72.7 | 22.6 | 37 | WNW | | | 6 | | 6 | | | 0 | 0 | Cloudy | Jacques. |
| Sfax | | | 29.98 | 761.4 | 71.6 | 22.0 | | N | | | 4 | | 2 | | | 0 | 0 | Fair | Gau. |
| Saida | | | 29.93 | 760.2 | 67.5 | 19.7 | | NNW | | | 1 | | 2 | | | 0 | 0 | Fair | Herbin. |
| Tebessa | | | 29.93 | 760.2 | | | | NW | | | 6 | | 2 | | | 0 | 0 | Fair | Watrin. |
| Geriville | | | 30.11 | 764.9 | 66.2 | 19.0 | 73 | NNW | | | 8 | | 3 | | | 0 | 0 | Pretty fair. | Lemaillot. |
| Laghouat | | | 30.04 | 762.9 | 72.0 | 22.2 | 23 | NE | | | 1 | | 0 | | | 0 | 0 | Clear | Bertrand. |
| Biskra | | | 29.96 | 760.9 | 80.6 | 27.0 | 31 | NW | | | 2 | | 1 | | | 0 | 0 | Very fair | Chanvaux. |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet: Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.02 | 737.2 | 29.57 | 751.0 | 55.6 | 13.1 | 88 | NE | | | 2 | | 10 | | | 0.264 | 6.7 | Raining | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory | 28.88 | 733.6 | 29.64 | 752.8 | 56.8 | 13.8 | 78 | NE | | | 1 | | 10 | | | 0.083 | 2.1 | | Dr. Wierzbiski. |
| Eperies | 28.76 | 730.4 | 29.62 | 752.4 | 55.8 | 13.2 | 73 | S | | | 1 | | 10n;s | | N | 0 | 0 | | Julius Mikolik. |
| Gratz | 28.38 | 720.8 | 29.61 | 752.1 | 53.4 | 11.9 | 81 | NE | | | 4 | | 10 | | | 0.008 | 0.20 | | Andreas Rospini. |
| Hermannstadt | 28.20 | 716.3 | 29.60 | 751.7 | 55.0 | 12.8 | 62 | SE | | | 3 | | 10 | | | 0.104 | 2.65 | | Prof. Reissenberg |
| Kremsmünster | 28.26 | 717.9 | 29.58 | 751.3 | 55.8 | 13.2 | 73 | Calm | | | 0 | | 8 | | | 0.177 | 4.5 | | Prof. C. Wagner |
| Lemberg | 28.64 | 727.4 | 29.60 | 751.9 | 57.4 | 14.1 | 64 | E | | | 2 | | 9 | | | 0 | 0 | | Dr. T. Stanecki. |
| Pola | 29.50 | 749.3 | 29.61 | 752.1 | 61.7 | 16.5 | 73 | SW | | | 1 | | 5ckn | | | 0 | 0 | | I.R.Hydrographic Office |
| Szathmar | 29.22 | 742.2 | 29.68 | 753.9 | 54.3 | 12.4 | 90 | SE | | | 2 | | 10 | | | 0.228 | 5.8 | Raining | Johann Tamas, S. J. |
| Szegedin | 29.31 | 744.4 | 29.58 | 751.4 | 55.9 | 13.3 | 95 | S | | | 2 | | 10 | | | 0.112 | 2.85 | | Karl Stancel. |
| Trieste | 29.54 | 750.3 | 29.64 | 752.9 | 61.0 | 16.1 | 74 | WSW | | | 1 | | 8 | | | 0 | 0 | Cloudy | P. Busin. |
| Vienna | 28.90 | 734.0 | 29.60 | 751.9 | 57.6 | 14.2 | 71 | Calm | | | 0 | | 9 | | | 0.016 | 0.4 | | I. R. Central Met. Obs'y. |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 349.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.80 | 718.7 | 29.80 | 756.8 | 52.3 | 11.3 | 71 | NNW | | | 4 | | 9 | | | 0.016 | 0.4 | | Prof. M. Passau. |
| Brussels | 29.65 | 753.0 | 29.84 | 758.0 | 59.2 | 15.1 | 53 | NNE | | | 4 | 0? | 8 | E | NE;NNE | 0 | 0 | | Royal Observatory. |
| Furnes | 29.94 | 760.5 | 29.97 | 761.1 | 52.3 | 11.3 | 83 | NNE | | | 3 | | 5 | | | 0 | 0 | | M. E. de Cae. |
| Maeseyck | 29.68 | 753.8 | 29.80 | 757.0 | 55.4 | 13.0 | 70 | N | | | 2 | | 10 | | | 0.004 | 0.1 | | M. Pierrot. |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4? set. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.13 | 765.3 | 30.23 | 767.8 | 45.7 | 7.6 | ..... | N | 14 | 6.3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Overcast..... | W. B. swell. |
| Ardrossan | 30.18 | 766.6 | 30.20 | 767.1 | 49 | 9.4 | ..... | ENE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.22 | 767.6 | 49.2 | 9.6 | ..... | ENE | 8 | 3.6 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.13 | 765.3 | 49.2 | 9.6 | ..... | NW | 11 | 4.9 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 30.20 | 767.1 | 52.3 | 11.3 | ..... | ENE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds..... | J. L. E. Dreyer. |
| Bradford, Yorkshire | 29.72 | 754.9 | 30.12 | 765.0 | 51.6 | 10.6 | ..... | N | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 0 | 0 | D. clouds..... | J. McLandsborough. |
| Bridgetown, (Barbados) | ..... | ..... | 29.93 | 760.2 | 80.6 | 26.7 | ..... | NE | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 30.05 | 763.3 | 57.0 | 13.9 | ..... | N | ..... | ..... | 3 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | H. Todd. [H.C. |
| Cardington | ..... | ..... | 30.07 | 763.8 | 56.4 | 13.6 | ..... | N | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | John McLaren. |
| Chatham, School M. E. | 29.91 | 759.7 | 30.04 | 763.0 | 54.2 | 12.3 | ..... | N | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky..... | Q. M. Serg., Geo. Stuart, R. E |
| Dartmoor | 28.59 | 726.2 | 30.05 | 763.3 | 57.0 | 13.9 | ..... | E | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | Fine..... | Alexander Watt. |
| Donaghadee | 30.17 | 766.3 | 30.20 | 767.1 | 51 | 10.6 | ..... | ENE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | J. Mac Gowan. |
| Dover | 29.96 | 761.0 | 29.98 | 761.5 | 54 | 12.2 | ..... | NNE | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | ¾ clouded... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 30.11 | 764.8 | 54.7 | 12.6 | ..... | NE | 2.0 | 0.9 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds..... | Thomas Mackereth. |
| Falmouth, Observatory | 29.88 | 758.9 | 30.11 | 764.8 | 51.8 | 11.0 | ..... | SSE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff. |
| Fort Napier, (Natal) | 27.59 | 700.8 | 29.78 | 756.4 | 81.0 | 27.2 | ..... | N | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. Salmon, A.H. C. |
| Free Town, (Sierra Leone) | 29.61 | 752.1 | 29.84 | 757.9 | 89.0 | 31.7 | ..... | W | ..... | ..... | 0 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's College | ..... | ..... | 30.13 | 765.3 | 56 | 13.3 | ..... | NE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.94 | 760.5 | 30.00 | 762.0 | 69.2 | 20.7 | ..... | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Corpl. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 30.00 | 762.0 | 30.21 | 767.3 | 48.3 | 9.1 | ..... | ENE | ..... | ..... | 3 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy..... | D. G. Maclean. |
| Great Yarmouth | 30.02 | 762.5 | 30.02 | 762.5 | 59 | 10.0 | ..... | N | ..... | ..... | 5 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.86 | 758.4 | 30.03 | 762.7 | 57.4 | 14.1 | ..... | NNE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky ..... | The Staff, for G. B. Airy. |
| Guernsey | 29.84 | 757.9 | 30.06 | 763.5 | 49 | 9.4 | ..... | NNW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds ..... | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 30.11 | 764.8 | 58 | 14.4 | ..... | SW | ..... | ..... | 1 | ..... | 1c | ..... | ..... | 0 | 0 | Very fine..... | M. P. Moyle. |
| Holyhead | 30.11 | 764.8 | 30.16 | 766.1 | 48 | 8.9 | ..... | NNE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Tilston. |
| *Jersey | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 30.05 | 763.3 | 53.9 | 12.2 | ..... | N | 17 | 7.6 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff. |
| Kingstown | 30.18 | 766.6 | 30.21 | 767.3 | 46 | 7.8 | ..... | NNE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.. .. | George Mitchell. |
| Leicester, Museum | ..... | ..... | 30.10 | 764.5 | 56.2 | 13.4 | ..... | N | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.69 | 754.1 | 29.77 | 756.1 | 66.0 | 18.9 | ..... | NW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | Sgt. Fred. Travis, A. H. |
| Nairn | 30.16 | 766.1 | 30.26 | 768.6 | 47 | 8.3 | ..... | E | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded... | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 29.86 | 758.4 | 75.5 | 24.2 | ..... | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 29.90 | 759.4 | 30.09 | 764.3 | 56.3 | 13.5 | ..... | N | ..... | ..... | 3 | ..... | 3k | ..... | N | 0 | 0 | D. clouds..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.56 | 750.8 | 30.09 | 764.3 | 53.3 | 11.8 | ..... | NNE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.07 | 763.8 | 54 | 12.2 | ..... | N | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | Mr. Lucas. |
| Plymouth | 30.00 | 762.0 | 30.07 | 763.8 | 55.1 | 12.8 | ..... | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | John Merrifield. |
| Roche's Point | 30.11 | 764.8 | 30.16 | 766.1 | 59 | 15.0 | ..... | E | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | Fine ..... | W. Kennedy. |
| Saint Ann's Head | 29.94 | 760.5 | 30.11 | 764.8 | 52 | 21.1 | ..... | N | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 30.27 | 768.8 | 47.4 | 8.6 | ..... | NE | 17 | 7.6 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.79 | 756.7 | 63.0 | 17.2 | ..... | SW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | Blank | Blank | Gloomy..... | Sergt. W. H. Lyne. |
| Sheffield | 29.84 | 757.9 | 30.12 | 765.0 | 54.1 | 12.3 | ..... | NE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | D. clouds..... | W. F. Cooper. |
| Silloth Rectory | 30.14 | 765.5 | 30.17 | 766.3 | 50.3 | 10.2 | 70 | SE | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0 | 0 | D. clouds..... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.74 | 755.4 | 30.14 | 765.5 | 49.2 | 9.6 | ..... | NE | ..... | ..... | 0 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. S. J. Perry. |
| Stornoway, Lews C. (Hebr.) | ..... | ..... | 30.22 | 767.6 | 47 | 8.3 | ..... | ENE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Clear..... | John Sutherland. |
| Stratfield Turgiss | 29.84 | 757.9 | 30.06 | 763.5 | 52.9 | 11.6 | ..... | N | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. C. H. Griffith, F.M |
| Thurso | ..... | ..... | 30.25 | 768.3 | 49 | 9.4 | ..... | NNE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 30.11 | 764.8 | 61 | 16.1 | ..... | N | ..... | ..... | 6 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 30.15 | 765.8 | 57.0 | 13.9 | ..... | SW | 13 | 5.8 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Hazy..... | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.44 | 747.8 | 68.0 | 20.0 | 83 | N | ..... | ..... | 2 | ..... | 8kn | ..... | ..... | 0.01 | 0.3 | Cloudy..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.85 | 758.2 | 30.04 | 763.0 | 77.0 | 25.0 | 66 | SE | 15.0 | 6.7 | ..... | 0 | 8 | ..... | ..... | 0.37 | 9.4 | Cloudy..... | C. Meldrum. |
| Melbourne, Observatory | 29.70 | 754.4 | 29.80 | 756.9 | 55.8 | 13.2 | 88 | NNE | 6 | 2.7 | ..... | ..... | 3 | ..... | ..... | 0.62 | 15.8 | Fine..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m. *Observation not simultaneous.

| Marine Series. Vessels. | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Algeria, N. 51° 5′, W. 14° 55′ | Smooth | ..... | ..... | ..... | 30.12 | 765.0 | 52 | 11.1 | ..... | ENE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | Blue sky..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. C. Prehn. |
| S. S. Naid, N. 48° 10′, W. 28° 5′ | ..... | ..... | ..... | ..... | 29.78 | 756.4 | 56 | 13.3 | ..... | ESE | ..... | ..... | 7 | ..... | 6 | ..... | ..... | 5 | ESE | D. clouds..... | Capt. J. Smith. |
| S. S. Peruvian, N. 52° 40′ W. 26° 50′ | ..... | ..... | ..... | ..... | 30.06 | 763.5 | 52 | 11.1 | ..... | ESE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 3 | ESE | Drizzling..... | [R. Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Longley. |

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. | | BAROMETER. Reduced to sea-level. | | TEMPERATURE OF THE AIR. | | RELATIVE HUMIDITY. | WIND. Direction. | WIND. Velocity. | | WIND. Force. | CLOUDS. Amount. | | CLOUDS. Direction. | | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. | | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inches. | Millimeters. | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | (0—10. | Up'er (0—10 | Low'r (0—10. | Upper. From— | Lower. From— | Inches. | Millimeters. | | |
| Punta Arenas | | | | | | | | | | | | | | | | | | | |
| San José | 26.20 | 665.5 | | | 67.1 | 19.5 | 81 | NE | | | 2 | | Haze | | | 0 | 0 | | Mr. Ansart. |
| | | | | | | | | | | | | | | | | | | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.85 | 758.3 | 29.90 | 759.5 | 55.4 | 13.0 | 45 | N | | | 4 | | 4 | | | | | | |
| Fanöe | 29.92 | 759.9 | 29.94 | 760.4 | 60.6 | 15.9 | 35 | ENE | | | 4 | | 1 | | | | | | |
| Godthaab, (Greenland) | 29.81 | 757.1 | 29.85 | 758.2 | 28.9 | —1.7 | 84 | SSW | | | 4 | | 10 | | | | | | |
| Stykkisholm, (Iceland) | 30.09 | 764.3 | 30.13 | 765.4 | 46.6 | 8.1 | 83 | S | | | 4 | | 8 | | | | | | |
| Thorshavn, (Faröe) | 30.29 | 769.3 | 30.32 | 770.2 | 47.3 | 8.5 | 55 | SW | | | 2 | | 0 | | | | | Raining | |
| Vestervig | 29.83 | 757.7 | 30.00 | 762.0 | 58.6 | 14.8 | 49 | NE | | | 2 | | 0 | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.46 | 748.3 | 30.01 | 762.3 | 56.3 | 13.5 | 76 | NE | | | 4 | | 10 | | | 0 | 0 | Covered | Collignon, Director. |
| Amiens, Normal School | | | | | | | | | | | | | | | | | | | Bonvarne, Director. |
| Avignon, Normal School | 29.71 | 754.7 | 29.79 | 756.7 | 66.9 | 19.4 | 54 | N | | | 2 | | 0 | | | 0.110 | 2.8 | Very clear | Mr. Giraud, Director |
| Bar-sur-Seine | 29.26 | 743.3 | 29.82 | 757.3 | 55.6 | 13.1 | 70 | N | | | 3 | | 10n | | | 0.394 | 10.0 | Covered | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 55.2 | 12.9 | 61 | N | | | 3 | | 10 | | N | 0.098 | 2.5 | Covered | Normal School. |
| Besançon | 28.90 | 734.1 | 29.78 | 756.4 | 58.6 | 14.8 | 68 | S | | | 2 | | 8 | | SW | 0.358 | 9.1 | Very cloudy | Normal School. |
| Bourg-en-Bresse | 28.94 | 735.0 | 29.85 | 758.2 | 54.7 | 12.6 | 74 | NW | | | 2 | | 10n | | NW | 0.563 | 14.3 | Covered | Normal School. |
| Bourges, Normal School | 29.25 | 742.9 | 29.80 | 757.0 | 49.1 | 9.5 | 81 | NW | | | 2 | | 10 | | NW | 0.413 | 10.5 | Covered | A. Wagner, Director. |
| Brest, Naval Observatory | 29.78 | 756.3 | 30.00 | 761.9 | 54.9 | 12.7 | 59 | NE | | | 3 | | 1k | | NE | 0 | 0 | | The Staff. |
| Carcassonne, Normal School | 29.50 | 749.3 | 29.92 | 760.0 | 62.6 | 17 | 70 | W | | | 4 | | 5 | | W | 0.256 | 6.5 | Cloudy | Vateau, Director. |
| Caen | | | | | | | | | | | | | | | | | | | Normal School. |
| Chartres, Normal School | 29.25 | 742.9 | 29.81 | 757.2 | 48.2 | 9 | 86 | N | | | 4 | | 10 | | NE | 0.114 | 2.9 | Covered | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.48 | 748.9 | 29.80 | 756.9 | 59.4 | 15.2 | 83 | W | | | 4 | | 8 | | N | 0 | 0 | Very cloudy | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.52 | 724.3 | 29.86 | 758.5 | 55.6 | 13.1 | 59 | WNW | | | 2 | | 8 | | NW | 0.705 | 17.9 | Very cloudy | Alluard, Director. |
| Commercy, Normal School | 28.93 | 734.8 | 29.80 | 756.8 | 57.2 | 14 | 60 | NW | | | 2 | | 10 | | NW | 0 | 0 | Covered | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.67 | 728.3 | 29.82 | 757.3 | 61.7 | 16.5 | 44 | NW | | | 6 | | 5 | | NW | 0 | 0 | ½ Covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 29.79 | 756.7 | 30.01 | 762.2 | 57.2 | 14.0 | 74 | NW | | | 2 | | 8 | | NW | 0 | 0 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.63 | 752.6 | 29.94 | 760.4 | 53.6 | 12 | 74 | NE | | | 2 | | 5 | | NE | 0 | 0 | Cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.89 | 733.8 | 29.81 | 757.1 | 53.2 | 11.8 | 80 | W | | | 3 | | 10 | | | 0.24 | 6. | Raining | Voudez, Director. |
| Lorient, Naval Observatory | 29.95 | 760.8 | 30.06 | 763.4 | 58.6 | 14.8 | 70 | N | | | 3 | | 2 | | NW | 0 | 0 | ¾ Covered | T. Carré, Director. |
| Mâcon, Normal School | 29.01 | 736.9 | 29.65 | 753.2 | 51.1 | 10.6 | 72 | NNE | | | 2 | | 5 | | NNE | 0.59 | 15. | Cloudy | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | 28.71 | 729.1 | 29.74 | 755.5 | 54.0 | 12.2 | 74 | NW | | | 2 | | 8 | | NW | 1.02 | 26. | Very cloudy | Normal School. |
| Nismes, Normal School | 29.65 | 753.0 | 29.85 | 758.1 | 65.5 | 18.6 | 59 | N | | | 2 | | 0 | | | 0 | 0 | Clear | Boyer, Director. |
| Orleans, Normal School | 29.44 | 747.7 | 29.82 | 757.3 | 63.5 | 17.5 | 70 | NW | | | 2 | | 10 | | | 0 | 0 | Covered | Bernard, Director. |
| Paris, Observatory | 29.67 | 753.6 | 29.91 | 759.8 | 52.3 | 11.3 | 69 | N | | | 2 | | 10 | | N | 0.065 | 1.64 | Covered | National Observatory. |
| Privas | 28.76 | 730.4 | 29.82 | 757.3 | 56.3 | 13.5 | 63 | N | | | 2 | | 2 | | N | 0 | 0 | Slightly cl'dy | Normal School |
| Puy de Dome (Summit) | | | | | | | | | | | | | | | | | | | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.97 | 761.3 | 30.00 | 762.1 | 58.6 | 14.8 | 53 | N | | | 2 | | 10 | | N | 0 | 0 | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 29.89 | 759.2 | 29.98 | 761.4 | 54.3 | 12.4 | 61 | N | | | 8 | | 5 | | N | 0.118 | 3.0 | Cloudy | F. Lucard, Director |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | M. H. Hercouet |
| Tarbes, Normal School | 28.84 | 732.4 | 29.90 | 759.4 | 57.2 | 14 | 67 | WSW | | | 2 | | 10 | | | 0.39 | 10. | Raining | T. Hugues, Director |
| Villefranche | | | | | | | | | | | | | | | | | | | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.78 | 756.3 | 29.80 | 757.0 | 79.2 | 26.2 | | | | | | | | | | | | | |
| Lyons | | | 29.87 | 758.7 | 56.5 | 13.6 | 73 | | | | | 7 | | | | 0.63 | 16. | | L'Abbé Marchést. |
| Marseilles, Observatory | | | 29.76 | 755.9 | 62.4 | 16.9 | 45 | W | | | 3 | 4 | | | | 0.20 | 5. | Rainy | M. Jeys. |
| Mont-Louis | 24.74 | 628.5 | 30.06 | 763.5 | 48.6 | 9.2 | 35 | WNW | 14.9 | 6.66 | | 2 | | | W | 0 | 0 | Partly cl'dy | The Staff. |
| Nice | | | 29.71 | 754.5 | 59.2 | 15.1 | 89 | W | | | 2 | 0 | | | | 0.063 | 1.6 | | Mr. Falguère. |
| Paris, Montsouris Obs'y | 29.62 | 752.4 | 29.90 | 759.4 | 52.0 | 11.1 | 73 | NNW | | | 4 | 10 | | | N | 0 | 0 | Clear | Dr. A. Niepce. |
| Perpignan | | | 29.91 | 759.6 | 63.3 | 17.4 | 47 | N | 26.1 | 11.67 | | 2 | | | NW | 0.043 | 1.1 | | Marié Davy, Director |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Plantade,) H. P. | 22.42 | 569.4 | | | 29.3 | — 1.5 | | NW | | | 3 | 10 | | | | 0.846 | 21.5 | Snowy | M. Baylac. |
| Saint Maur, (near Paris) | 29.74 | 755.4 | 29.91 | 759.6 | 55.4 | 13.0 | 60 | NNW | | | 2 | 10 | | | | 0.079 | 2.0 | Covered | Gen'l de Nansouty |
| Toulouse, Observatory | 29.27 | 743.5 | 29.99 | 761.8 | 58.3 | 14.6 | 72 | W | | | 3 | 7 | | | | 0.207 | 5.25 | Raining | E. Renou. |
| Tours | 29.77 | 756.1 | 29.97 | 761.1 | 51.8 | 11.0 | 71 | WNW | | | 1 | 10 | | | NNE | 0.039 | 1.0 | | The Staff. |
| Versailles, (near Paris) | | | 29.92 | 760.0 | 53.6 | 12.0 | 67 | N | | | 2 | 10 | | | | 0.102 | 2.60 | Covered | C. Marquet. |
| Zi-Ka-Wei, (near Shanghai) | 30.08 | 764.1 | 30.11 | 754.7 | 54.3 | 12.4 | 87 | WNW | 4.3 | 1.9 | | 0 | | | | 0 | 0 | Clear | Dr. A. Bérigny. |
| | | | | | | | | | | | | | | | | | | | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.78 | 731.0 | 29.57 | 751.1 | 58.1 | 14.5 | 81 | NNW | | | 4 | | 9 | NW | | 0.24 | 6. | Raining | Prof. Dr. Hoh. |
| Berlin | 29.56 | 750.8 | 29.73 | 755.1 | 52 7 | 11.5 | 85 | NE | | | 1 | | 10 | | | 0.154 | 3.9 | Raining | Prof. Arndt. |
| Breslau | 29.13 | 739.9 | 29.65 | 753.2 | 61.5 | 16.4 | 62 | ENE | | | 1 | | 8 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.30 | 744.1 | 29.72 | 754.8 | 53.8 | 12.1 | 76 | NE | | | 1 | | 10 | | | 0.295 | 7.5 | Raining | Albert Senz. |
| Cassel | 29.19 | 741.5 | 29.84 | 757.8 | 48.9 | 9.4 | 87 | N | | | 6 | | 8 | NNE | | 0.010 | 0.25 | | Dr. H. Möhl. |
| Crefeld | 29.63 | 752.5 | 29.79 | 756.6 | 55.9 | 13.3 | 61 | NE | | | 4 | | 9 | | | 0 | 0 | | Director Lose. |
| Emden | 29.87 | 758.7 | 29.91 | 759.6 | 58.8 | 14.9 | 49 | NE | | | 4 | | 0 | | | 0 | 0 | | Prof. Prestel. |
| Frankfort on the Main | 29.41 | 746.9 | 29.77 | 756.1 | 53.6 | 12 | 65 | NNE | | | 2 | | 10 | | | 0.094 | 2.4 | | Physical Society. |
| Friedrichshafen | 28.33 | 719.5 | 29.75 | 755.6 | 53.6 | 12.0 | 83 | SW | | | 4 | | 10 | SW | | 0.157 | 4.0 | Raining | M. Wilhelm. |
| Hamburg | 29.77 | 756.1 | 29.84 | 757.9 | 55.4 | 13.0 | 58 | NE | | | 5 | | 8s | | | 0 | 0 | Fair | Captain F. Hegemann. |
| Kiel | 29.88 | 758.9 | 29.89 | 759.3 | 54.7 | 12.6 | 51 | NE | | | 7 | | 1 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.68 | 753.8 | 29.76 | 755.9 | 58.6 | 14.8 | 59 | NE | | | 3 | | 6 | | | 0 | 0 | | Prof. E Luther. |
| Köslin | | | 29.76 | 756.0 | 49.1 | 9.5 | | NNE | | | 4 | | 4 | | | 0.055 | 1.4 | | H. Müller. |
| Leipsic, Observatory | 29.30 | 744.1 | 29.71 | 754.7 | 54.3 | 12.4 | 77 | NNE | | | 2 | | 10 | N | | 0 | 0 | | Prof. Bruhns. |
| Memel, Naval School | 29.76 | 755.9 | 29.81 | 757.1 | 63.5 | 17.5 | 30 | NE | | | 2 | | 6cs;ck | | | | | | Reinbrecht and Skalweit. |
| Neufahrwasser | 29.78 | 756.4 | 29.80 | 756.8 | 49.3 | 9.6 | 76 | NE | | | 3 | | 8 | WNW | | 0.098 | 2.5 | | A. Lothes. |
| Posen | 29.43 | 747.4 | 29.72 | 754.8 | 55.4 | 13.0 | 80 | SW | | | 1 | | 10 | | | 0.012 | 0.3 | | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.21 | 742.0 | 29.76 | 755.9 | 54.7 | 12.6 | 83 | NE | | | 1 | | 9 | NW | | 0.379 | 9.62 | | Dr. Schur. |
| Stuttgart | 28.75 | 730.2 | 29.68 | 753.9 | 54.5 | 12.5 | 65 | W | | | 2 | | 10 | | | 0.110 | 2.8 | Raining | Prof. Schoder. |
| Treves, (Trier) | 29.16 | 740.6 | 29.67 | 753.7 | 56.8 | 13.8 | 56 | NNE | | | 6 | | 10 | | | 0.034 | 0.86 | Foggy | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.17 | 715.5 | 29.64 | 752.9 | 53.1 | 11.7 | 76 | NW | 2 | 1 | | | 10 | | WNW | 0.465 | 11.8 | Raining | Dr. Von Bebber. |
| Wustrow, Naval School | 29.84 | 758.0 | 29.88 | 759.0 | 49.1 | 9.5 | 69 | NE | | | 5 | | 3 | | | 0 | 0 | | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.43 | 747.5 | 29.82 | 757.3 | 70.0 | 21.1 | | S | | | 3.0 | | | | | | | ½ clear | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.81 | 757.2 | 29.86 | 758.4 | 89.0 | 31.7 | 76 | WSW | 29? | 13.0? | | | 8 | | | 0 | 0 | D. clouds | |
| Deesa | 29.38 | 746.4 | 29.84 | 758.0 | 100.2 | 37.9 | 13 | NNW | | | | | 1 | WNW | | 0 | 0 | Misty | |
| Bombay | 29.75 | 755.7 | 29.79 | 756.6 | 84.3 | 29.1 | 83 | NW | 23 | 10.3 | | | 0 | | | 0 | 0 | Misty | |
| Poona | 27.75 | 704.9 | 29.70 | 754.2 | 92.8 | 33.8 | 43 | N | | | | | 9 | NNE | NW | 0 | 0 | Dust-whirl | |
| Lahore | 29.16 | 740.8 | 29.90 | 759.5 | 85.2 | 29.6 | 43 | Calm | 0.7 | 0.3 | | | 3 | | | 0.05 | 1.3 | Drizzling | |
| Belgaum | 27.31 | 693.6 | 29.80 | 757.0 | 83.9 | 28.8 | 69 | W | 24 | 10.7 | | | 1 | | W;E | 0 | 0 | Misty | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.98 | 736.0 | 29.87 | 758.6 | 84.2 | 29.0 | 34 | NE | 3.3 | 1.5 | | | 2 | | | 0 | 0 | | |
| Agra | 29.28 | 743.8 | 29.84 | 757.8 | 91.7 | 33.2 | 37 | N | | | | | | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | Thunder-storm | |
| Nagpur | 28.84 | 732.4 | 29.86 | 758.4 | 91.5 | 33.1 | 45 | Calm | 6.3 | 2.8 | | | 10 | | E | | | | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.46 | 748.4 | 29.83 | 757.7 | 90.8 | 32.7 | 50 | SSW | 0.4 | 0.2 | | | | | | 0 | 0 | Blue sky | |
| Allahabad | 29.50 | 749.2 | 29.80 | 757.0 | 92.1 | 33.4 | 31 | Calm | 1.5 | 0.7 | | | 2 | | | 0 | 0 | D. clouds | |
| Patna | 29.61 | 752.1 | 29.79 | 756.6 | 89.5 | 31.9 | 45 | W | 1.6 | 0.7 | | | 8 | W | W | 0 | 0 | D. clouds | |
| Hazaribagh | 27.82 | 706.7 | 29.80 | 756.8 | 87.8 | 31.0 | 31 | NW | 5.1 | 2.3 | | | 5 | | W | | | Raining | |
| Cuttack | 29.73 | 755.2 | 29.81 | 757.2 | 96.1 | 35.6 | 24 | NW | 3.7 | 1.7 | | | | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.80 | 757.0 | 29.82 | 757.5 | 88.1 | 31.2 | 66 | E | 4 | 1.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.43 | 747.6 | 29.82 | 757.4 | 80.9 | 27.2 | 73 | Calm | 3.1 | 1.4 | | | 1 | | W | 0 | 0 | D. clouds | |
| Chittagong | 29.80 | 756.9 | 29.89 | 759.2 | 85.4 | 29.7 | 67 | Calm | 5.9 | 2.6 | | | 2 | | | 0 | 0 | Misty | |
| Sibsagar | 29.52 | 749.7 | 29.85 | 758.1 | 85.2 | 29.6 | 68 | NE | 2 | 0.9 | | | 9 | W | W | 0 | 0 | D. clouds | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.47 | 723.1 | 29.80 | 757.0 | 92.5 | 33.6 | 26 | NE | 3.8 | 1.7 | | | 3 | SW | | 0 | 0 | D. clouds | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.18 | 741.0 | 29.58 | 751.3 | 63.9 | 17.7 | 63 | SW | 1.8 | 0.8 | ..... | ..... | 5 | ..... | ..... | 1.665 | 42.3 | ..... | Prof. Giovanni Codig. |
| Padua | 29.48 | 748.7 | 29.58 | 751.4 | 62.4 | 16.9 | 60 | WNW | 4.3 | 1.9 | ..... | ..... | 5 | WNW | ..... | 0 | 0 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.40 | 746.7 | 29.59 | 751.5 | 63.7 | 17.6 | 59 | S | 4.3 | 1.9 | ..... | ..... | 3 | W | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.31 | 719.1 | 29.61 | 752.1 | 62.6 | 17.0 | 61 | SW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.11 | 739.4 | 29.62 | 752.3 | 65.8 | 18.8 | ..... | W | ..... | ..... | 2 | ..... | 7 | W | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 28.74 | 730.0 | 29.64 | 752.8 | 61.9 | 16.6 | 58 | SSW | 0.7 | 0.3 | ..... | ..... | 6 | S | ..... | 0 | 0 | ..... | Prof. P. F. Denza. |
| Mondovi | 27.74 | 704.6 | 29.64 | 752.8 | 61.7 | 16.5 | 44 | ENE | ..... | ..... | 2 | ..... | 3 | NW | ..... | 0 | 0 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.46 | 748.3 | 29.68 | 753.9 | 62.2 | 16.8 | 67 | SW | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.50 | 749.4 | 29.67 | 753.7 | 62.8 | 17.1 | 64 | SW | 4.9 | 2.2 | ..... | ..... | 2 | SE | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.33 | 744.9 | 29.64 | 752.8 | 66.2 | 19.0 | 55 | NW | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.40 | 746.8 | 29.65 | 753.2 | 64 4 | 18.0 | 64 | W | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.925 | 23.5 | ..... | Cav. F Meucci. |
| Leghorn | 29.59 | 751.5 | 29.67 | 753.6 | 62.6 | 17.0 | 73 | W | 11.9 | 5.3 | ..... | ..... | 5 | W | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 29.59 | 751.5 | 29.63 | 752.7 | 57.9 | 14.4 | 72 | NW | 6.3 | 2.8 | ..... | ..... | 6 | W | ..... | 0.417 | 10.6 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.10 | 713.7 | 29.64 | 752.8 | 57.2 | 14.0 | 66 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.591 | 15.0 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.57 | 751.0 | 29.68 | 753.8 | 67.6 | 19.8 | 55 | SSE | ..... | ..... | 2 | ..... | 4 | S | ..... | 0.087 | 2.2 | ..... | Avv. P. Ponticelli. |
| Rome | 29.53 | 750.0 | 29.70 | 754.4 | 66.9 | 19.4 | 57 | W | 6.3 | 2.8 | ..... | ..... | 8 | ..... | ..... | 0.098 | 2.5 | ..... | Prof. P. G. S. Ferrar |
| Naples, O. U | 29.56 | 750.8 | 29.76 | 755.8 | 63.5 | 17.5 | 66 | W | ..... | ..... | 4 | ..... | 9 | WNW | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 66.2 | 19.0 | 63 | WNW | 12.5 | 5.6 | ..... | ..... | 7 | NW | ..... | 0.071 | 1.8 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.60 | 751 7 | 29.79 | 756.6 | 66.2 | 19.0 | 46 | NW | ..... | ..... | 4 | ..... | 2 | NW | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 28.88 | 733.6 | 29.76 | 755.8 | 66.2 | 19.0 | 77 | SW | 7.4 | 3.3 | ..... | ..... | 9 | ..... | ..... | 0.071 | 1.8 | ..... | Prof. F. D. Conti. |
| Palermo | 29.50 | 749.4 | 29.76 | 755.8 | 62.4 | 16.9 | 53 | W | 12.5 | 5.6 | ..... | ..... | 8 | W | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.60 | 751.7 | 29.67 | 753.6 | 68.0 | 20.0 | 69 | NE | ..... | ..... | 4 | ..... | 6 | W | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.17 | 741.0 | 29.73 | 755.1 | 58.6 | 14.8 | 76 | WNW | 11.9 | 5.3 | ..... | ..... | 7 | W | ..... | 0.122 | 3.1 | ..... | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nagasaki | | | | | | | | | | | | | | | | | | | |
| Tokei (Yeddo) | 30.04 | 763.0 | 30.11 | 764.8 | 54.7 | 12.6 | 86 | ENE | 4.4 | 2.0 | ..... | ..... | 58 | ..... | ..... | 0.330 | 8.38 | Fair | The Observatory. |
| Tokei (Yeddo) University | 29.99 | 761.7 | 30.09 | 764.3 | 54 | 12.2 | 90 | E | 5 | 2.2 | ..... | 3cs | ..... | ..... | ..... | 0.394 | 10.0 | Fair | Prof. P. V. Veeder. |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | | | | | | | | | | | | | | | | | | | I. N. Marin, M. D. |
| Córdoba | | | | | | | | | | | | | | | | | | | C. Peña, M. D. |
| Cuernavaca | | | | | 68.0 | 20.0 | 42 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | ..... | L. Castillo, A. E. |
| Guadalajara | 25.02 | 635.5 | 30.05 | 763.3 | 50.0 | 10.0 | 51 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy... | Prof. L. Perez. |
| Guanajuato | | | | | | | | | | | | | | | | | | | Prof. V. Fernandez |
| Leon | | | | | 63.1 | 17.3 | 49 | NNW | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy... | Prof. M. Leal. |
| Mexico | 23.08 | 586.2 | 30.09 | 764.2 | 59.0 | 15.0 | 47 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy... | Central Observatory. |
| Orizaba | | | | | | | | | | | | | | | | | | | N. N. |
| Orizaba | | | | | | | | | | | | | | | | | | | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | | | | | 63.1 | 17.3 | 34 | SW | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | M. V. de Leon, M. E. |
| Puebla | 23.34 | 592.9 | 30.06 | 763.5 | 53.6 | 12.0 | 75 | N | 1.3 | 0.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy... | Prof. B. Gonzalez. |
| Toluca | | | | | | | | | | | | | | | | | | | Prof. C. Velazquez. |
| Tlacotalpam | 29.93 | 760.2 | 29.94 | 760.5 | 72.5 | 22 5 | 78 | SE | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Foggy | Prof. F. R. Bayly. |
| San Luis Potosi | | | | | | | | | | | | | | | | | | | G. Barroeta, M. D. |
| Vera-Cruz | 29.91 | 759.6 | 29.94 | 760.3 | 74.3 | 23.5 | 79 | W | 1.8 | 0.8 | ..... | 0 | 3s | ..... | ..... | 0 | 0 | Hazy | Prof. J. Rossell. |
| Zacatecas | | | | | 55.4 | 13.0 | 45 | S | 4.9 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.27 | 591.1 | 30.01 | 762.3 | 53.6 | 12.0 | 65 | W | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | P. Spina. [M. M. D. D |
| Morelia | 24.02 | 610.0 | ..... | ..... | 60.8 | 16.0 | 56 | S | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | M. Tena, F. L. Param. |
| Durango | | | | | | | | | | | | | | | | | | | M. V. de Leon, C. E. |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,821 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.92 | 759.9 | 29.92 | 759.9 | 54.0 | 12.2 | ..... | N | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0.209 | 5.3 | ..... | |
| Groningen | 29.84 | 758.0 | 29.90 | 759.4 | 55.8 | 13.2 | ..... | NE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 29.92 | 760.0 | 29.92 | 760.0 | 53.6 | 12.0 | ..... | NNE | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 29.91 | 759.6 | 29.91 | 759.6 | 58.6 | 14.8 | 68 | NNE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.84 | 757.8 | 29.88 | 759.0 | 58.5 | 14.7 | 50 | NNE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 0 | 0 | Light cloudy | H. v d Brink. |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.01 | 762.3 | 30.07 | 763.7 | 57.6 | 14.2 | 37 | NW | 9.4 | 4.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Bröno | 29.93 | 760.3 | 29.97 | 761.3 | 44.6 | 7.0 | 71 | WNW | 18 | 8 | ..... | ..... | 8 | ..... | ..... | 0.079 | 2.0 | ..... | |
| Christiania | 29.86 | 758.4 | 30.00 | 762.1 | 57.7 | 14.3 | 40 | SE | 0 | 0 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.86 | 758.5 | 29.91 | 759.6 | 32.4 | 0.2 | 89 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.41 | 746.9 | 29.60 | 751.8 | 58.8 | 14.9 | 80 | W | 9.4 | 4.2 | ..... | ..... | 2 | ..... | ..... | 0.236 | 6.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.04 | 737.5 | 30.05 | 763.3 | 66.2 | 19.0 | 48 | SE | 3.1 | 1.4 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos. |
| Funchal, (Madeira) | 29.90 | 759.4 | 29.98 | 761.6 | 66.2 | 19.0 | 72 | SE | 8.1 | 3.6 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.72 | 755.0 | 30.08 | 764.0 | 62.8 | 17.1 | 58 | S | 8.7 | 3.9 | ..... | ..... | 4 | NNW | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 29.58 | 751.4 | 29.65 | 753.2 | 63.7 | 17.6 | 59 | SW | 16.1 | 7.2 | ..... | ..... | 3 | ..... | ..... | 0.102 | 2.6 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.92 | 760.0 | 29.93 | 760.2 | 81.5 | 27.5 | ..... | S | ..... | ..... | 5 | ..... | 1 | ..... | S | 2 | ..... | Blue sky | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Rio Douro, S. 25° 08′, E. 32° 37′ | ..... | ..... | 30.00 | 761.9 | 78.8 | 26.0 | ..... | ENE | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 3 | E | Blue sky | J. T. d'Oliveria, Com'd't. |
| Sado, N. 14° 42′, W. 23° 13′ | 30.02* | 762.5* | 30.03* | 762.8* | 78.4 | 25.8 | ..... | NNE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 3 | NE | Blue sky | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, S. 11° 04′ 7″, E. 12° 12′ 8″ | 29.78 | 756.4 | 29.79 | 756.6 | ..... | ..... | ..... | WSW | ..... | ..... | 1 | ..... | 4 | ..... | WSW | 2 | SW | D. clouds | F. Texeira da Silva, Com'd't. |
| Tejo, N. 22° 10′ E. 113° 32′ | ..... | ..... | 30.07 | 763.7 | 79.7 | 26.5 | ..... | E | ..... | ..... | 3 | ..... | 2kn | ..... | E | 1 | E | ..... | F. J. Ferreina, dos Amas, Com' |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.25 | 742.9 | 29.66 | 753.4 | 58.8 | 14.9 | 55 | NNE | 11 | 5 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.37 | 745.9 | 29.78 | 756.3 | 62.4 | 16.9 | 35 | ESE | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Light clouds | Astronomical Obs. |
| Dorpat | 29.57 | 751.0 | 29.81 | 757.1 | 54.9 | 12.7 | 52 | N | 4 | 2 | ..... | ..... | 9ks | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weilrauch. |
| St. Petersburg | 29.79 | 756.7 | 29.81 | 757.1 | 37.4 | 3.0 | 85 | N | 9 | 4 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.49 | 749.0 | 29.82 | 757.4 | 35.6 | 2.0 | 100 | E | 7 | 3 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Ch. Forsten. |
| Kieff | 29.16 | 740.7 | 29.78 | 756.5 | 57.9 | 14.4 | 34 | SE | 11 | 5 | ..... | ..... | 6c | ..... | ..... | ..... | ..... | Light clouds | Physical Cabinet. |
| Nikolaiev | 29.82 | 757.5 | 29.89 | 759.3 | 52.9 | 11.6 | 64 | S | 9 | 4 | ..... | ..... | 10kn | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.92 | 760.0 | 29.94 | 760.5 | 49.3 | 9.6 | 94 | S | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.27 | 743.5 | 29.81 | 757.2 | 59.9 | 15.5 | 38 | SW | 9 | 4 | ..... | ..... | 4ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.74 | 755.4 | 29.94 | 760.5 | 62.8 | 17.1 | 35 | SE | 2 | 1 | ..... | ..... | 4k | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.93 | 760.2 | 29.95 | 760.7 | 29.8 | − 1.2 | 80 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.52 | 724.5 | 29.93 | 760.2 | 57.7 | 14.3 | 48 | NW | 18 | 8 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.07 | 763.7 | 29.98 | 761.6 | 47.7 | 8.7 | 59 | ENE | 9 | 4 | ..... | ..... | 10n | ..... | ..... | Blank | Blank | Heavy clouds | Sebastianof. |
| Krotkowo* | 29.44 | 747.7 | 29.91 | 759.6 | 55.0 | 12.8 | 34 | WSW | 2 | 1 | ..... | ..... | 1s | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.61 | 752.0 | 29.88 | 758.9 | 45.9 | 7.7 | 59 | SW | 2 | 1 | ..... | ..... | 2ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.85 | 732.7 | 29.82 | 757.3 | 36.1 | 2.3 | 35 | W | 27 | 12 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.51 | 749.5 | 29.74 | 755.5 | 54.0 | 12.2 | 83 | NNW | 11 | 5 | ..... | ..... | 5ks | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.18 | 715.8 | 29.80 | 757.0 | 77.7 | 25.4 | 65 | Calm | 0 | 0 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.38 | 746.3 | 29.91 | 759.6 | 46.8 | 8.2 | 21 | WSW | 13 | 6 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.44 | 747.7 | 29.76 | 756.0 | 35.2 | 1.8 | 72 | SW | 11 | 5 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Snowing | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 29.72 | 755.0 | 29.87 | 758.6 | 68.4 | 20.2 | 31 | S | 2 | 1 | ..... | ..... | 2cs | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.57 | 700.2 | 29.60 | 751.8 | 48.0 | 8.9 | 45 | Calm | 0 | 0 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Vladivostock | 30.24 | 768.0 | 30.33 | 770.4 | 39.7 | 4.3 | 96 | SE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 27.1 | − 2.7 | 57 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 469 meters, or 1,341.8 feet; Tashkend, 494.27 m., or 1,621.37 ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.07 m., or 1,942.27 ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.78 | 756.3 | 29.88 | 758.9 | 64 0 | 17.8 | 51 | SSE | 3.2 | 1.44 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.05 | 763.2 | 30.10 | 764.6 | 64.4 | 18.0 | 70 | NW | 3.1 | 1.37 | ..... | 3 | 5 | NW | ..... | 0 | 0 | Almost cov. | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.09 | 688.1 | ..... | ..... | 53.6 | 12.0 | 83 | N | 3.8 | 1.70 | ..... | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.77 | 705.4 | 29.95 | 760.7 | 68.0 | 20.0 | 41 | SW | 8.9 | 4.00 | ..... | 0 | 6 | ..... | ..... | 0 | 0 | Cloudy | The Staff. |
| Murcia, Met. Obs'y | 29.78 | 756.3 | 29.92 | 760.0 | 78.3 | 25.7 | 36 | SW | 1.5 | 0.69 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Almost clear | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.13 | 740.0 | 30.02 | 762.5 | 62.4 | 16.9 | 67 | SSW | 2.7 | 1.19 | ..... | ..... | 9 | ..... | ..... | 0.299 | 7.6 | Almost cov. | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.83 | 757.5 | 29.89 | 759.2 | 75.4 | 24.1 | 92 | N | 1.6 | 0.7 | ..... | ..... | 10n | ..... | ..... | 0.232 | 5.9 | Raining | Benito Vines, S. J. |
| San Fernando, Naval Obs'y | 29.95 | 760.8 | 30.05 | 763.3 | 66.6 | 19.2 | 56 | WNW | 18.3 | 8.2 | ..... | 0 | 1 | ..... | NW | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.87 | 758.6 | 29.96 | 760.9 | 78.8 | 26.0 | 83 | SE | 0 | 0 | ..... | 2s | 1k | SE | SE | 2.047 | 52.00 | Clear | Leonardo de Tejeda, Chief of Engineers. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.



Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATION. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.91 | 759.6 | 29.95 | 760.6 | 34.2 | 1.2 | ..... | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.82 | 757.3 | 29.87 | 758.6 | 43.9 | 6.6 | 62 | SSE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.84 | 758.0 | 29.89 | 759.3 | 50.4 | 10.2 | 44 | NNW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.74 | 755.4 | 29.92 | 759.9 | 52.0 | 11.0 | 40 | N | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.89 | 759.3 | 30.19 | 766.8 | 44.2 | 6.8 | 80 | NNE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.84 | 757.9 | 29.91 | 759.8 | 54.5 | 12.5 | 41 | N | 10.3 | 4.6 | ..... | ..... | 8 | ..... | ..... | 0.009 | 0.01 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.36 | 720.4 | 29.78 | 756.3 | 58.3 | 14.6 | 65 | SSW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0.079 | 2.0 | Covered | The Observatory. |
| Zurich | 28.13 | 714.4 | 29.77 | 756.2 | 51.1 | 10.6 | 85 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.571 | 14.5 | Raining | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —4.0 mm.; Thermometer, +1.1 cent.; Relative Humidity, +8 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.86 | 758.4 | 64.9 | 18.3 | 46 | S | 3 | 1.5 | ..... | ..... | 10 | ..... | ..... | 0.646 | 16.4 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Valona | ..... | ..... | 29.76 | 755.8 | 66.2 | 19.0 | ..... | SW | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanides. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0.59 | 15. | Raining | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | Imperial Observatory. |
| Beirut, (Syria,) Lee Obs'y | 29.86 | 758.4 | 29.97 | 761.2 | 71.4 | 21.9 | 61 | W | ..... | ..... | 3 | ..... | 1ck | ..... | ..... | 0 | 0 | Blue sky | Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 29.98 | 761.5 | 30.05 | 763.3 | 39.8 | 4.3 | 92 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Foggy | Hon. J. Ferguson. |
| Brockville, Ontario | 29.47 | 748.5 | 29.77 | 756.1 | 55 | 12.8 | ..... | SW | 1 | 0.4 | ..... | ..... | 8s | ..... | SW | 0 | 0 | Cloudy | W. R. Bigg. |
| *Chatham, N B | 29.99 | 761.7 | 30.05 | 763.3 | 48 | 8.9 | 96 | Calm | 0 | 0 | ..... | ..... | Haze | ..... | Calm | 0 | 0 | Hazy | G. A. Blair. |
| Charlottetown, P. E. Island. | 30.07 | 763.8 | 30.12 | 765.0 | 50 | 10.0 | 86 | S | 2 | 0.9 | ..... | ..... | 8cs | ..... | S | 0 | 0 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.53 | 750.0 | 29.73 | 755.1 | 34.9 | 1.6 | 98 | E | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0.182 | 4.62 | Overcast | James Smith, M. A. |
| Dalhousie, N. B | 30.03 | 762.7 | 30.06 | 763.5 | 38 | 3.3 | 100 | E | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | Foggy | H. A. Johnson. |
| Esquimault, B. C | 29.99 | 761.7 | 30.04 | 763.0 | 38.1 | 3.4 | 92 | Calm | ..... | ..... | ..... | 4cs | 0 | ..... | ..... | 0 | 0 | Fair | W. H. Bevis. |
| *Father Point, Quebec | 29.93 | 760.2 | 29.95 | 760.7 | 39 | 3.9 | 93 | N | 3 | 1.3 | ..... | 5k | 5s | Calm | S | 0 | 0 | Cloudy | J. McWilliams. |
| Fredericton, N. B | 30.02 | 762.5 | 30.08 | 764.0 | 52.2 | 11.2 | 91 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Misty | Prof. Harrison. |
| *Fort Garry Manitoba | 29.17 | 740.9 | 30.01 | 762.2 | 37 | 2.8 | 86 | SE | 5 | 2.2 | ..... | 2c | 2s | S | S | 0 | 0 | Fair | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Granton, Ontario | 28.61 | 726.7 | 29.70 | 754.4 | 48 | 8.9 | 93 | E | ..... | ..... | 1 | ..... | 10n | ..... | ..... | Inap. | Inap. | Cloudy | H. J. Strang, M. A. |
| *Halifax, N. S | 30.00 | 762.0 | 30.13 | 765.3 | 43 | 6.1 | 99 | SE | 2 | 0.9 | ..... | ..... | Fog | ..... | ..... | ..... | ..... | Foggy | James Grant. |
| Hamilton, Ontario | 29.38 | 746.2 | 29.75 | 755.6 | 48.7 | 9.3 | 88 | SE | ..... | ..... | 1 | 10cs | ..... | ..... | ..... | 0 | 0 | Foggy | F. Allison, M. A. |
| Heart's Content, N. F | 30.20 | 767.1 | 30.23 | 767.8 | 39 | 3.9 | 73 | N | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Cloudy | Geo. Dickson, M. A. |
| *Kingston, Ontario | 29.44 | 747.8 | 29.77 | 756.1 | 57 | 13.9 | 83 | NE | 4 | 1.8 | ..... | 2ck | 0 | Calm | ..... | 0 | 0 | Fine | E. Weedon. |
| Little Glace Bay, N. S | 30.16 | 766.1 | 30.20 | 767.1 | 45.0 | 7.2 | ..... | SW | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Clear | S. Woods, M. A. |
| *Montreal, Quebec | 29.67 | 751.1 | 29.76 | 755.9 | 55 | 12.8 | 99 | NE | 7 | 3.1 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Overcast | C. H. Rigby. |
| *Parry Sound, Ontario | 29.08 | 738.6 | 29.77 | 756.1 | 50 | 10.0 | 86 | NE | 11 | 4.9 | ..... | 2ck | 2ks | SE | SE | 0.40 | 10.2 | Foggy | C. H. McLeod, C. E. |
| Peterboro, Ontario | 29.02 | 737.1 | 29.75 | 755.6 | 53.1 | 11.7 | 96 | NE | ..... | ..... | ..... | 0 | 6n | ..... | ..... | 0.20 | 5.1 | ..... | Rev. R. Mosley. |
| Port Dover, Ontario | 29.03 | 737.3 | 29.72 | 754.9 | 53 | 11.7 | 86 | S | 4 | 1.8 | ..... | ..... | 5n | ..... | SE | Inap. | Inap. | Cloudy | J. F. Jeffers, B. A. |
| Port Hastings, N. S | 30.12 | 765.0 | 30.17 | 766.3 | 44.5 | 6.9 | ..... | S | 3 | 1.3 | ..... | ..... | ..... | ..... | ..... | Inap. | Inap. | Cloudy | H. Morgan. |
| Port Stanley, Ontario | 29.02 | 737.1 | 29.66 | 753.4 | 49 | 9.4 | 91 | E | 12 | 5.4 | ..... | ..... | 10n | ..... | S | 0 | 0 | Fine | Peter Grant. |
| *Quebec, Quebec | 29.55 | 750.6 | 29.88 | 758.9 | 42 | 5 6 | 96 | NE | ..... | ..... | ..... | ..... | 10n | ..... | NE | 0.26 | 6.6 | Cloudy | M. Payne. |
| *Rockliffe, Ontario | 29.37 | 746.0 | 29.83 | 757.7 | 48 | 8.9 | 82 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Cloudy | Capt. Ashe, R. N. |
| St. Andrews, N. B | 30.01 | 762.2 | 30.06 | 763.5 | 44 | 6.7 | 95 | SE | 3 | 1.3 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Clear | W. H. McIntyre. |
| St. John, N. B | 29.94 | 760.5 | 30.11 | 764.8 | 40 | 9.4 | 96 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Foggy | Dr. Gove. |
| *Saugeen, Ontario | 29.01 | 736.8 | 29.71 | 754.6 | 53 | 11.7 | 79 | E | 9 | 4.0 | ..... | 2cs | 8ks | ..... | E | 0 | 0 | Cloudy | K. Stewart. |
| Stayner, Ontario | 28.97 | 735.8 | 29.74 | 755.4 | 48 | 8.9 | 89 | Calm | 0 | 0 | ..... | 10k | 0 | SE | ..... | Inap. | Inap. | Cloudy | R. J. Cole. |
| Stratford, Ontario | 28.43 | 722.1 | 29.70 | 754.4 | 47.3 | 8.5 | 92 | SE | 5 | 2.2 | ..... | ..... | 10s | ..... | ..... | 0.013 | 0.33 | Overcast | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.16 | 766.1 | 30.19 | 766.8 | 45 | 7.2 | 90 | S | 4 | 1.8 | ..... | ..... | 10n | ..... | ..... | Inap. | Inap. | Cloudy | T. C. Hill. |
| *Toronto, Ontario | 29.36 | 745.7 | 29.74 | 755.4 | 51 | 10.6 | 86 | Calm | 0 | 0 | ..... | 5ck | Haze | SE | Calm | 0 | 0 | Fair | Magnetic Observatory. |
| Windsor, N S | 30.01 | 762.2 | 30.11 | 764.8 | 59.0 | 15.0 | 94 | Calm | 0 | 0 | ..... | ..... | 9k | ..... | ..... | 0 | 0 | Fair | Prof. John E. Orrm. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 43.0 | 6.1 | 92 | NE | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r. 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.52 | 749.8 | 29.74 | 755.4 | 61 | 16.1 | 88 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.12 | 3.0 | Cloudy..... | |
| Alpena, Michigan | 29.06 | 738.1 | 29.70 | 754.4 | 43 | 6.1 | 91 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | NE | 0.06 | 1.5 | Cloudy..... | |
| Atlantic City, New Jersey | 29.72 | 754.9 | 29.74 | 755.4 | 54 | 12.2 | 100 | E | 8 | 3.6 | ..... | ..... | Fog | ..... | E | 1.13 | 28.7 | Dense fog.... | |
| Augusta, Georgia | 29.63 | 752.6 | 29.81 | 757.2 | 63 | 17.2 | 72 | Calm | 0 | 0 | ..... | 2ck | 0 | W | ..... | 0 | 0 | Clear ..... | |
| Baltimore, Maryland | 29.67 | 753.6 | 29.72 | 754.9 | 60 | 15.6 | 94 | N | 3 | 1.3 | ..... | ..... | 10s | ..... | E | 0.13 | 3.3 | Cloudy..... | |
| Barnegat, New Jersey | 29.75 | 755 6 | 29.77 | 756.1 | 53 | 11.7 | 100 | SE | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0.71 | 18.0 | Foggy..... | |
| Bismarck, Dakota | 28.14 | 714.7 | 30.00 | 762.0 | 44 | 6.7 | 76 | E | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Boise City, Idaho | 27.08 | 687.8 | 29.96 | 761.0 | 48 | 8.9 | 85 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.11 | 2.8 | Light rain... | |
| Boston, Massachusetts | 29.69 | 754.1 | 29.84 | 757 9 | 59 | 15.0 | 94 | S | 10 | 4.5 | ..... | ..... | 10n;fg | ..... | S | 0.52 | 13.2 | Light rain... | |
| Brackettville, Texas | 28.74 | 730.0 | 29.74 | 755.4 | 67 | 19.4 | 64 | SE | 2 | 0.9 | ..... | ..... | 10s | ..... | S | 0 | 0 | Cloudy..... | |
| Breckenridge, Minnesota | 28.94 | 735.1 | 29.96 | 761.0 | 38 | 3.3 | 91 | N | 6 | 2.7 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear..... | |
| Brownsville, Texas | 28.87 | 733.3 | 29.94 | 760.5 | 70 | 21.1 | 75 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Buffalo, New York | 29.00 | 736.6 | 29.68 | 753.9 | 56 | 13.3 | 75 | E | 5 | 2.2 | ..... | 2ck | 5s | S | SW | 0 | 0 | Fair... ..... | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 60 | 15.6 | 39 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Burlington, Vermont | 29.50 | 749.3 | 29.75 | 755.6 | 59 | 15.0 | 87 | Calm | 0 | 0 | ..... | 5cs | 2s | S | Calm | 0.14 | 3.6 | Cloudy..... | |
| Cairo, Illinois | 29.39 | 746.5 | 29.77 | 756.1 | 61 | 16.1 | 61 | W | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| Camp Grant, Arizona | 25.16 | 639.0 | 29.96 | 761.0 | 51 | 10.6 | 34 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Camp Verde, Arizona | 26.76 | 679.7 | 30.24 | 768.1 | 45 | 7.2 | 76 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| Campo, California | 27.41 | 696.2 | 29.98 | 761.5 | 44 | 6.7 | 92 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Cape Hatteras, N. Carolina | 29.79 | 756.7 | 29.80 | 756.9 | 66 | 18.9 | 89 | SW | 8 | 3.6 | ..... | 0 | 2s | ..... .... | S | 0.33 | 8.4 | Fair ..... | |
| Cape Henry, Virginia | 29.70 | 754.4 | 29.72 | 754.9 | 66 | 18.9 | 69 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.96 | 24.4 | Clear..... | |
| Cape Lookout, N. Carolina | 29.78 | 756.4 | 29.79 | 756.7 | 66 | 18.9 | 79 | W | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Cape May, New Jersey | 29.71 | 754.6 | 29.74 | 755.4 | 57 | 13.9 | 94 | SE | 12 | 5.4 | ..... | ..... | Fog | ..... | ..... | 0.40 | 10.2 | Foggy ..... | |
| Charleston, South Carolina | 29.78 | 756.4 | 29.85 | 758.2 | 67 | 19.4 | 74 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Cheyenne, Wyoming | 23.97 | 608.8 | 29.91 | 759.7 | 35 | 1.7 | 61 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Chicago, Illinois | 28.99 | 736.3 | 29.68 | 753.9 | 42 | 5.6 | 83 | NE | 13 | 5.8 | ..... | ..... | 10s | ..... | NE | 0.23 | 5.8 | Cloudy..... | |
| Cincinnati Ohio | 29.01 | 736.8 | 29.64 | 752 8 | 55 | 12.8 | 74 | SW | 5 | 2.2 | ..... | ..... | 10ks | ..... | SW | 0.09 | 2.3 | Cloudy..... | |
| Cleveland, Ohio | 28.96 | 735.6 | 29.67 | 753.6 | 50 | 10.0 | 86 | SE | 8 | 3.6 | ..... | 2k | 2s | W | Calm | 0.22 | 5.6 | Fair ..... | |
| Concho, Texas | 27.96 | 710.2 | 29.61 | 752.1 | 54 | 12.2 | 14 | SW | ..... | ..... | 1 | 4c | 0 | SW | ..... | 0 | 0 | Fair ..... | |
| Corsicana, Texas | 29.42 | 747.3 | 29.88 | 758.9 | 59 | 15.0 | 76 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Davenport, Iowa | 29.15 | 740.4 | 29.78 | 756.4 | 46 | 7.8 | 77 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Deadwood, Dakota | 25.37 | 644.4 | ..... | ..... | 36 | 2.2 | 80 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... .... | ..... | 0 | 0 | Clear. ..... | |
| Denison, Texas | 29.11 | 739.4 | 29.88 | 758.9 | 63 | 17.2 | 67 | N | 2 | 0.9 | ..... | 2cs | 0 | NW | ..... | 0 | 0 | Fair ..... | |
| Denver, Colorado | 24.74 | 628.4 | 29.96 | 761.0 | 41 | 5.0 | 41 | SE | 8 | 3.6 | ..... | 2c | 0 | E | ..... | 0 | 0 | Clear. ..... | |
| Detroit, Michigan | 28.97 | 735.8 | 29.62 | 752.3 | 52 | 11.1 | 86 | S | 3 | 1.3 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy..... | |
| Dodge City, Kansas | 27.28 | 692.9 | 29.50 | 749.3 | 58 | 14.4 | 53 | E | 8 | 3.6 | ..... | 2cs | 5ks | Calm | N | 0 | 0 | Fair ..... | |
| Dubuque, Iowa | 29.07 | 738.4 | 29.77 | 756.1 | 43 | 6.1 | 75 | N | 8 | 3.6 | ..... | ..... | 10ks | ..... | N | 0.01 | 0.3 | Cloudy..... | |
| Duluth, Minnesota | 29.21 | 741.9 | 29.89 | 759.2 | 42 | 5.6 | 83 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.24 | 6.1 | Cloudy..... | |
| Eagle Pass, Texas | 29.17 | 740.9 | 29.91 | 759.7 | 60 | 15.6 | 100 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| Eastport, Maine | 29.97 | 761.2 | 30.04 | 763.0 | 46 | 7.8 | 100 | Calm | 0 | 0 | ..... | ..... .... | Fog | ..... | ..... | 0.03 | 0.8 | Foggy ..... | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 65 | 18.3 | 33 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| Erie, Pennsylvania | 28.98 | 736.1 | 29.68 | 753.9 | 55 | 12.8 | 81 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | ..... | 0 03 | 0.8 | Cloudy. ..... | |
| Escanaba, Michigan | 29.12 | 739.6 | 29.77 | 756.1 | 39 | 3.9 | 82 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | N | 0.21 | 5.3 | Cloudy..... | |
| Florence, Arizona | 28.27 | 718.0 | 29.87 | 758.7 | 53 | 11.7 | 73 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Fort Bayard, New Mexico | 24.10 | 612.1 | 30.10 | 764.5 | 43 | 6.1 | 8 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Fort Craig, New Mexico | 25.43 | 645.9 | 29.50 | 749.3 | 44 | 6.7 | 37 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Fort Davis, Texas | 25.12 | 638.0 | 30.08 | 764.0 | 63 | 17.2 | 26 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| Fort Gibson, Indian Ter | 29.32 | 744.7 | 29.85 | 758.2 | 54 | 12.2 | 87 | NE | 2 | 0.9 | ..... | 2ck | 0 | W | ..... | 0 | 0 | Clear ..... | |
| Fort Griffin, Texas | 28.59 | 726.2 | 29.84 | 757.9 | 55 | 12.8 | 68 | Calm | 0 | 0 | ..... | 2ck | 5s | Calm | Calm | 0 | 0 | Fair..... | |
| Fort St. Michael, Alaska | 29.37 | 746.0 | 29.40 | 746.7 | 22 | — 5.6 | 100 | S | 16 | 7.2 | ..... | ..... | 10s | ..... | S | 0.01 | 0.3 | Cloudy..... | |
| Fort Sill, Indian Territory | 28.66 | 728.0 | 29.75 | 755.6 | 57 | 13.9 | 69 | NE | 6 | 2.7 | ..... | 0 | 8s | ..... | W | 0 | 0 | Fair ..... | |
| Galveston, Texas | 29.89 | 759.2 | 29.93 | 760.2 | 68 | 20.0 | 84 | SW | 3 | 1.3 | ..... | 5cs | 0 | W | ..... | 0 | 0 | Fair ..... | |
| Grand Haven, Michigan | 29.02 | 737.1 | 29.67 | 753.6 | 43 | 6.1 | 100 | NE | 9 | 4.0 | ..... | ..... | 10n | ..... | Calm | 0.23 | 5.8 | Light rain... | |
| Indianapolis, Indiana | 28.87 | 733.3 | 29.62 | 752.3 | 53 | 11.7 | 80 | SW | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0.06 | 1.5 | Cloudy..... | |
| Indianola, Texas | 29.92 | 760.0 | 29.94 | 760.5 | 70 | 21.1 | 85 | S | 4 | 1.8 | ..... | 1k | 0 | Calm | ..... | 0 | 0 | Clear. ..... | |
| Jacksboro, Texas | 28.74 | 730.0 | 29.85 | 758.2 | 60 | 15.6 | 65 | Calm | 0 | 0 | ..... | 4ck | 1s | N | N | 0 | 0 | Cloudy..... | |
| Jacksonville, Florida | 29.84 | 757.9 | 29.86 | 758.4 | 70 | 21.1 | 66 | SW | 1 | 0.4 | ..... | 2k | 0 | Calm | ..... .... | 0 | 0 | Fair ..... | |
| Keokuk, Iowa | 29.14 | 740.1 | 29.75 | 755.6 | 48 | 8.9 | 70 | N | 10 | 4.5 | ..... | ..... | 10s | ..... .... | Calm | 0.05 | 1.3 | Cloudy..... | |
| Key West, Florida | 29.84 | 757.9 | 29.87 | 758.7 | 75 | 23.9 | 68 | N | 18 | 8.0 | ..... | 2k | Haze | N | Calm | 0 | 0 | Cloudy..... | |
| Kittyhawk, North Carolina | 29.74 | 755.4 | 29.76 | 755.9 | 67 | 19.4 | 89 | SW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear..... | |
| Knoxville, Tennessee | 28.89 | 731.5 | 29.79 | 756.7 | 51 | 10.6 | 86 | W | 2 | 0.9 | ..... | ..... | 9ks | ..... | W | 0.09 | 2.3 | Cloudy..... | |
| La Crosse, Wisconsin | 29.06 | 738.1 | 29.79 | 756.7 | 44 | 6.7 | 68 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy..... | |
| La Mesilla, New Mexico | 25.02 | 635.5 | 30.17 | 766.3 | 44 | 6.7 | 60 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Laredo, Texas | 29.46 | 748.3 | 29.79 | 756.7 | 65 | 18.3 | 84 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Leavenworth, Kansas | 29.02 | 737.1 | 29.86 | 758.4 | 46 | 7.8 | 69 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Los Angeles, California | 29.68 | 753.9 | 30.01 | 762.2 | 56 | 13.3 | 84 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair ..... | |
| Louisville, Kentucky | 29.12 | 739.6 | 29.66 | 753.4 | 55 | 12.8 | 68 | SW | 8 | 3.6 | ..... | 8ck | 2s | W | W | 0.21 | 5.3 | Cloudy..... | |
| Lynchburg, Virginia | 29.06 | 738.1 | 29.71 | 754.6 | 62 | 16.7 | 61 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Marquette, Michigan | 29.07 | 738.4 | 29.77 | 756.1 | 39 | 3.9 | 100 | NW | 11 | 4.9 | ..... | ..... | 10n | ..... | Calm | 0.62 | 15.7 | Light rain... | |
| Mason, Texas | 28.30 | 718.8 | 30.03 | 762.7 | 59 | 15.0 | 70 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Memphis, Tennessee | 29.50 | 749.3 | 29.81 | 757.2 | 62 | 16.7 | 57 | W | 6 | 2.7 | ..... | 0 | 0 | .. ..... | ..... | 0 | 0 | Clear..... | |
| Milwaukee, Wisconsin | 29.00 | 736.6 | 29.73 | 755.1 | 40 | 4.4 | 91 | N | 13 | 5.8 | ..... | ..... | 10s | ..... | NW | 0.17 | 4.3 | Cloudy..... | |
| Mobile, Alabama | 29.84 | 757.9 | 29.89 | 759.2 | 68 | 20.0 | 56 | NW | 8 | 3.6 | ..... | 1c | 0 | NW | ..... | 0 | 0 | Clear. ..... | |
| Montgomery, Alabama | 29.81 | 752.1 | 29.84 | 757.9 | 63 | 17.2 | 67 | SW | 2 | 0.9 | ..... | 0 | 0 | .. ..... | ..... | 0 | 0 | Clear..... | |
| Morgantown, West Virginia | 28.68 | 728.5 | 29.70 | 754.4 | 54 | 12.2 | 80 | NE | 2 | 0.9 | ..... | ..... | 10n | ..... | SW | 0.06 | 1.5 | Light rain... | |
| Mt. Washington, N. H. | 23.68 | 601.5 | 30.04 | 763.0 | 41 | 5.0 | 100 | S | 60 | 26.8 | ..... | ..... | 10n | ..... | S | 2.30 | 58.4 | Light rain... | |
| Nashville, Tennessee | 29.22 | 742.2 | 29.74 | 755.4 | 58 | 14.4 | 70 | SW | 4 | 1.8 | ..... | 0 | 5s | ..... | SW | 0.06 | 1.5 | Fair... ..... | |
| New Haven, Connecticut | 29.65 | 753.1 | 29.77 | 756.1 | 54 | 12.2 | 96 | E | 5 | 2.2 | ..... .. | ..... | Fog | ..... | Calm | 1.51 | 38.4 | Foggy ..... | |
| New London, Connecticut | 29.78 | 756.4 | 29.83 | 757.7 | 53 | 11.7 | 100 | SE | 8 | 3.6 | ..... | ..... | 10n;fg | ..... | Calm | 0.41 | 10.4 | Light rain... | |
| New Orleans, Louisiana | 29.86 | 758.4 | 29.91 | 759.7 | 68 | 20.0 | 79 | W | 6 | 2.7 | ..... | 8c | Haze | W | Calm | 0 | 0 | Fair ..... | |
| Newport, Rhode Island | 29.80 | 756.9 | 29.85 | 758.2 | 53 | 11.7 | 100 | SE | 9 | 4.0 | ..... | ..... | 10n | ..... | S | 0.40 | 10.2 | Light rain... | |
| New York, New York | 29.58 | 751.3 | 29.76 | 755.9 | 57 | 13.9 | 100 | NE | 10 | 4.5 | ..... | ..... | Fog | ..... | Calm | 0.45 | 11.4 | Foggy ..... | |
| Norfolk, Virginia | 29.68 | 753.9 | 29.74 | 755.4 | 67 | 19.4 | 74 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.22 | 5.6 | Clear ... .... | |
| North Platte, Nebraska | 27.05 | 687.1 | 29.64 | 752.8 | 41 | 5.0 | 82 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| Olympia, Washington Ter. | 29.98 | 761.5 | 30.02 | 762.5 | 37 | 2.8 | 90 | SW | 1 | 0.4 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Dense fog... | |
| Omaha, Nebraska | 28.78 | 731.0 | 29.86 | 758.4 | 46 | 7.8 | 69 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Oswego, New York | 29.42 | 747.3 | 29.74 | 755.4 | 56 | 13.3 | 81 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.03 | 0.8 | Clear..... | |
| Pembina, Dakota | 29.16 | 740.7 | 30.00 | 762.0 | 37.5 | 3.1 | 81 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Philadelphia, Pennsylvania | 29.68 | 753.9 | 29.74 | 755.4 | 57 | 13.9 | 100 | NE | 8 | 3.6 | ..... | ..... | Fog | ..... | NE | 0.21 | 5.3 | Foggy..... | |
| Phœnix, Arizona | 28.75 | 730.2 | 30.58 | 776.7 | 52 | 11.1 | 73 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Pike's Peak, Colorado | 17.74 | 450.6 | 29.96 | 761.0 | 18 | — 7.8 | 53 | E | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Pioche, Nevada | 23.94 | 608.1 | 29.72 | 754.9 | 42 | 5.6 | 59 | S | 5 | 2.2 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear ..... | |
| Pittsburg, Pennsylvania | 28.89 | 733.8 | 29.68 | 753.9 | 52 | 11.1 | 86 | W | 2 | 0.9 | ..... | ..... | 10n | ..... | W | 0.08 | 2.0 | Light rain... | |
| Port Huron, Michigan | 28.99 | 736.3 | 29.64 | 752.8 | 49 | 9.4 | 85 | SE | 3 | 1.3 | ..... | ..... | 10ks | ... .... | SE | 0.02 | 0.5 | Cloudy..... | |
| Portland, Maine | 29.85 | 758.2 | 29.90 | 759.4 | 54 | 12.2 | 87 | S | 6 | 2.7 | ..... | ..... | 10n | ..... | S | 0.28 | 7.1 | Light rain... | |
| Portland, Oregon | 30.00 | 762.0 | 30.11 | 764.8 | 40 | 4.4 | 100 | SE | 1 | 0.4 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy ..... | |
| Prescott, Arizona | 24.74 | 628.4 | 30.10 | 764.5 | 37 | 2.8 | 71 | SW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| Punta Rassa, Florida | 29.89 | 759.2 | 29.90 | 759.4 | 70 | 21.1 | 61 | N | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0.34 | 8.6 | Clear..... | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Red Bluff, California** | 29.72 | 754.9 | 30.08 | 764.0 | 50 | 10.0 | 79 | S | 7 | 3.1 | ..... | ..... | 10s | ..... | Calm | 0.59 | 15.0 | Cloudy..... | |
| **Rochester, New York** | 29.10 | 739.1 | 29.70 | 754.4 | 55 | 12.8 | 74 | NW | 2 | 0.9 | ..... | 5ck | 0 | S | ..... | Inap. | Inap. | Fair ..... | |
| **Roseburg, Oregon** | 29.50 | 749.3 | 30.08 | 764.0 | 45 | 7.2 | 92 | Calm | 0 | 0 | ..... | ..... | 1pn | ..... | Calm | 0.02 | 0.5 | Light rain... | |
| **Sacramento, California** | 29.99 | 761.7 | 30.08 | 764.0 | 45 | 7.2 | 84 | SE | 4 | 1.8 | ..... | 1c | 1ks | S | N | 0 | 0 | Clear..... | |
| **St. Louis, Missouri** | 29.19 | 741.4 | 29.75 | 755.6 | 50 | 10.0 | 65 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy..... | |
| **St. Marks, Florida** | 29.86 | 758.4 | 29.88 | 758.9 | 63 | 17.2 | 94 | Calm | 0 | 0 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair..... | |
| **St. Paul, Minnesota** | 29.00 | 736.6 | 29.82 | 757.4 | 45 | 7.2 | 67 | N | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| **Salt Lake City, Utah** | 25.54 | 648.7 | 29.87 | 758.7 | 49 | 9.4 | 57 | SE | 2 | 0.9 | ..... | 2k | 0 | SW | ..... | 0 | 0 | Fair..... | |
| **San Antonio, Texas** | 29.23 | 742.4 | 29.80 | 756.9 | 58 | 14.4 | 88 | Calm | 0 | 0 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair..... | |
| **San Diego, California** | 29.96 | 761.0 | 30.03 | 762.7 | 57 | 13.9 | 87 | N | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy..... | |
| **Sandusky, Ohio** | 29.00 | 736.6 | 29.65 | 753.1 | 55 | 12.8 | 81 | SW | 8 | 3.6 | ..... | 4ck | 0 | SW | ..... | 0.17 | 4.3 | Fair ..... | |
| **Sandy Hook, New Jersey** | 29.72 | 754.9 | 29.76 | 755.9 | 53 | 11.7 | 100 | SE | 7 | 3.1 | ..... | ..... | Fog | ..... | SE | 0.43 | 10.9 | Foggy ..... | |
| **San Francisco, California** | 30.05 | 763.3 | 30.11 | 764.8 | 48 | 8.9 | 85 | W | 6 | 2.7 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy ..... | |
| **Santa Fé, New Mexico** | 23.22 | 589.8 | 29.76 | 755.9 | 40 | 4.4 | 48 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| **Savannah, Georgia** | 29.76 | 755.9 | 29.84 | 757.9 | 71 | 21.7 | 62 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| **Shreveport, Louisiana** | 29.72 | 754.9 | 29.93 | 760.2 | 65 | 18.3 | 68 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| **Smithville, North Carolina** | 29.80 | 756.9 | 29.83 | 757.7 | 66 | 18.9 | 74 | W | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| **Springfield, Massachusetts** | 29.60 | 751.8 | 29.72 | 754.9 | 60 | 15.6 | 88 | SE | 3 | 1.3 | ..... | ..... | 10n | ..... | SE | 1.62 | 41.1 | Light rain... | |
| **Stockton, Texas** | 26.85 | 682.0 | 29.85 | 758.2 | 52 | 11.1 | 53 | SW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| **Thatcher's Island, Mass** | 29.81 | 757.2 | 29.86 | 758.4 | 50 | 10.0 | 93 | S | 8 | 3.6 | ..... | ..... | Fog | ..... | S | 0.18 | 4.6 | Foggy ..... | |
| **Toledo, Ohio** | 28.96 | 735.6 | 29.62 | 752.3 | 54 | 12.2 | 87 | S | 2 | 0.9 | ..... | ..... | 10ks | ..... | S | 0.17 | 4.3 | Cloudy..... | |
| **Tucson, Arizona** | ..... | ..... | ..... | ..... | 46 | 7.8 | 54 | SE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| **Tybee Island, Georgia** | 29.80 | 756.9 | 29.83 | 757.7 | 68 | 20.0 | 60 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| **Umatilla, Oregon** | 29.72 | 754.9 | ..... | ..... | 44 | 6.7 | 68 | W | 4 | 1.8 | ..... | 0 | 8s | ..... | W | 0 | 0 | Cloudy..... | |
| **Vicksburg, Mississippi** | 29.67 | 753.6 | 29.92 | 760.0 | 58 | 14.4 | 76 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| **Virginia City, Montana** | 24.15 | 613.4 | 29.63 | 752.6 | 42 | 5.6 | 74 | NW | 1 | 0.4 | ..... | ..... | 10s | ..... | W | 0.27 | 6.9 | Cloudy..... | |
| **Visalia, California** | 29.70 | 754.4 | 30.07 | 763.8 | 47 | 8.3 | 77 | Calm | 0 | 0 | ..... | 0 | 8s | ..... | Calm | 0 | 0 | Cloudy ..... | |
| **Washington, D. C** | 29.60 | 751.8 | 29.72 | 754.9 | 57 | 13.9 | 100 | E | 4 | 1.8 | ..... | ..... | Fog | ..... | E | 0.03 | 0.8 | Foggy ..... | |
| **Wickenburg, Arizona** | ..... | ..... | ..... | ..... | 46 | 7.8 | 54 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| **Wilmington, N. Carolina** | 29.72 | 754.9 | 29.80 | 756.9 | 65 | 18.3 | 68 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| **Winnemucca, Nevada** | 25.57 | 649.5 | 29.93 | 760.2 | 38 | 3.3 | 63 | Calm | 0 | 0 | ..... | 10k | 0 | SW | ..... | Inap. | Inap. | Cloudy..... | |
| **Wood's Holl, Mass** | 29.81 | 757.2 | 29.86 | 758.4 | 54 | 12.2 | 93 | SW | 15 | 6.7 | ..... | ..... | 10n | ..... | ..... | 0.03 | 0.8 | Light rain.. | |
| **Yankton, Dakota** | 28.69 | 728.7 | 29.99 | 761.7 | 41 | 5.0 | 82 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| **Yuma, Arizona** | 29.75 | 755.6 | 29.92 | 760.0 | 55 | 12.8 | 73 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. ..... | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| **St. Paul's Island, Alaska** | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| **York Factory, B. A** | 30.04 | 763.0 | 30.09 | 764.3 | 27.0 | — 2.8 | 100 | NW | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | 0.02 | 0.5 | Snowing..... | J. Fortescue, W. Wood. |
| **Havana, Cuba, W. I** | 29.85 | 758.2 | 29.87 | 758.7 | 76 | 24.4 | 86 | NW | 2.4 | 1.1 | ..... | ..... | 10n | ..... | N | 0.28 | 7.1 | Light rain... | Chas. Hasselbrink. |
| **Kingston, Jamaica, W. I** | 30.09 | 764.3 | 30.10 | 764.5 | 77 | 25.0 | 82 | Calm | 0 | 0 | ..... | 2k | 0 | Calm | ..... | 0 | 0 | ..... | James Gall. |
| **Navassa, W. I** | 29.83 | 757.7 | 29.91 | 759.7 | 81 | 27.2 | ..... | E | 2 | 0.9 | ..... | ..... | ..... | ..... | ..... | 0.70 | 17.8 | Raining..... | F. M. Everett. |
| **Paramaribo, D. Guiana, S. A** | 29.94 | 760.5 | 29.94 | 760.5 | 82 | 27.8 | 87 | NE | ..... | ..... | 2 | ..... | 10ks | ..... | ..... | 1.620 | 41.15 | Cloudy..... | C. J. Hering. |
| **Batavia, Dutch Guiana, S. A** | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dr. H. Groot. |
| **Medellin, Colombia, S. A** | 25.21 | 640.3 | ..... | ..... | 67.5 | 19.7 | 80 | Calm | ..... | ..... | 0 | 2cs | 0 | ..... | ..... | 0 | 0 | ..... | Thomas Herran |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Podge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,170.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,550 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 m.; Tucson, 2.59 m.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.07 | 763 8 | 49 | 9.4 | 46 | 7.8 | 84 | NW | 7 | 3.1 | ..... | ..... | 5 | ..... | Calm | 0 | 0 | ..... | ..... | Fair..... | |
| Navy Yard, Pensacola, Fla. | 30.01 | 762.2 | 71 | 21.7 | 71 | 21.7 | 90 | W | 3 | 1.3 | ..... | ..... | 5 | ..... | W | 0 | 0 | ..... | ..... | Cloudy..... | |
| Navy Yard, Portsmouth, N.H | 29.94 | 760.5 | 72 | 22.2 | 51 | 10.6 | 100 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.2 | 5. | ..... | ..... | Dense fog.... | |
| Naval Hospital, Yokohama, Japan | 30.10* | 764.5* | 63 | 17.2 | 57.8 | 14.3 | 88 | E | ..... | ..... | 2 | ..... | 9ks | ..... | SW | 0 | 0 | ..... | ..... | Gloomy..... | |
| Adams. Panama | 29.98 | 761.5 | 81 | 27.2 | 81 | 27.2 | 91 | NW | ..... | ..... | 1 | ..... | 2 | ..... | NW | ..... | ..... | Smooth | ..... | Fair..... | |
| Alliance. Villefranche, France | 29.68‡ | 753.9‡ | ..... | ..... | 64 | 17.8 | 68 | SW | ..... | ..... | 0–1 | ..... | 1 | ..... | SW | ..... | ..... | Light | S | Pleasant..... | |
| Ashuelot. Nagasaki, Japan | 29.95 | 760.7 | 61 | 16.1 | 59 | 15.0 | 100 | N | ..... | ..... | 0–1 | ..... | 10 | ..... | N | ..... | ..... | ..... | ..... | Overcast.. ... | |
| Canonicus, New Orleans, La | 29.92 | 760.0 | 50 | 10.0 | 67 | 19.4 | 84 | WSW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Colorado, New York, N. Y. | 29.73‡ | 755.1‡ | ..... | ..... | 57 | 13.9 | 100 | ENE | 2 | 0.9 | ..... | ..... | 10 | ..... | ENE | 0.48 | 12.2 | ..... | ..... | Foggy ..... | |
| Constellation, Havre, France | 30.09‡ | 764.3‡ | ..... | ..... | 49 | 9.4 | 93 | NE | ..... | ..... | 3 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Fair ..... | |
| Constitution. Havre, France | 29.97‡ | 761.2‡ | ..... | ..... | 50 | 10.0 | 86 | NNE | ..... | ..... | 5 | ..... | 9 | ..... | NNE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Despatch, Constantinople, Turkey | 29.88‡ | 758.9‡ | ..... | ..... | 62 | 16.7 | 51 | SE | ..... | ..... | 1 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Clear ..... | |
| Franklin, Norfolk, Va | 29.86 | 758.4 | 68 | 20.0 | 65 | 18.3 | 73 | S | 7.2 | 3.2 | ..... | ..... | 5 | ..... | S | 2. | 51. | ..... | ..... | D. clouds..... | |
| Gettysburg Valetta, Malta | 29.82‡ | 757.4‡ | ..... | ..... | 64 | 17.8 | ?? | NW | ..... | ..... | 6 | ..... | 0 | ..... | ..... | Blank | Blank | ..... | ..... | Clear..... | |
| Guard, N. 16° 26′, W. 25° 21′ | 30.00 | 762.0 | 75 | 23.9 | 76 | 24.4 | 73 | W | ..... | ..... | 1 | ..... | 2 | ..... | W | ..... | ..... | Smooth | ..... | Clear. ..... | |
| Hartford, Montevideo, Uraguay | 29.94 | 760.5 | 70 | 21.1 | 65 | 18.3 | 94 | E | 12 | 5.4 | ..... | ..... | 10 | ..... | ..... | 0.097 | 24.6 | Smooth | ..... | Foggy ..... | |
| Marion, Smyrna, Turkey | 29.93 | 760.2 | 62 | 16.7 | 63 | 17.2 | 78 | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | Light | Light | Smooth | ..... | Drizzling..... | |
| Michigan, Erie, Pa | 29.20 | 741.7 | 60 | 15.6 | 54 | 12.2 | 100 | S | ..... | ..... | 1 | ..... | 10 | ..... | S | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monocacy. Shaughai, China | 30.15‡ | 765.8‡ | ..... | ..... | 60 | 15.6 | 65 | WNW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| New Hampshire, Port Royal, S. C | 30.04† | 763.0† | ..... | ..... | 69 | 20.6 | 65 | W | 9 | 4.0 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Omaha, Off Portsmouth, N. H | 30.03* | 762.7* | 54 | 12.2 | 50 | 10.0 | 93 | SE | 5 | 2.2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Smooth | ..... | Rain & fog... | |
| Onward, Callao, Peru | 30.02† | 762.5† | ..... | ..... | 66 | 18.9 | 89 | N | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | Long | W | Foggy ..... | |
| Ossipee, N. 34° 01′ W. 76° 20′ | 29.85‡ | 758.2‡ | ..... | ..... | 70 | 21.1 | 80 | WNW | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Heavy cross | WNW; SE | Clear..... | |
| Palos, Shanghai, China | 30.16* | 766.1* | 66 | 18.9 | 60 | 15.6 | 76 | W | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Pensacola, San Francisco, Cal | 30.18 | 766.6 | 53 | 11.7 | 51 | 10.6 | 52 | W | 4 | 1.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | NW | Fair ..... | |
| Plymouth. N. 28° 23′ W. 71° 33′ | 29.98‡ | 761.5‡ | ..... | ..... | 71 | 21.7 | 90 | SSE | ..... | ..... | 4–5 | ..... | 10 | ..... | SSE | ..... | ..... | Mod'ate | SE | Cloudy..... | |
| Powhatan, Norfolk, Va | 29.76‡ | 755.9‡ | ..... | ..... | 65 | 18.3 | 94 | S | 7.2 | 3.2 | ..... | ..... | 0 | ..... | ..... | 0.06 | 1.5 | ..... | ..... | Clear..... | |
| Ranger. Amoy, China | 30.19* | 766.8* | ..... | ..... | 69 | 20.6 | 85 | NNE | ..... | ..... | 3 | ..... | 0? | ..... | ..... | ..... | ..... | Smooth | NE | D. clouds?... | |
| Rio Bravo Brownsville, Texas | 29.86 | 758.4 | 65 | 18.3 | 66 | 18.9 | 94 | SE | ..... | ..... | 1 | ..... | 8 | ..... | NW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Santee, Annapolis, Md | 29.73‡ | 755.1‡ | ..... | ..... | 62 | 16.7 | 88 | SE | ..... | ..... | 1 | ..... | 10 | ..... | SE | 0.21 | 5.3 | ..... | ..... | Cloudy..... | |
| Saratoga, Washington, D. C | 29.66 | 753.4 | 66 | 18.9 | 62 | 16.7 | 88 | SE | ..... | ..... | 3 | ..... | 9 | ..... | SE | Slight | Slight | ..... | ..... | Cloudy..... | |
| St. Louis, League Island, Pa | 29.75 | 755.6 | 69 | 20.6 | 62 | 16.7 | 88 | NE | 4 | 1.8 | ..... | ..... | 10 | ..... | ..... | 0.23 | 5.8 | ..... | ..... | Foggy ..... | |
| Supply, Havre, France | 30.10 | 764.5 | 54 | 12.2 | 52 | 11.1 | 73 | NE | ..... | ..... | 2 | ..... | 8 | ..... | NE | ..... | ..... | ..... | ..... | Fair ..... | |
| Swatara, Key West, Fla | 29.88‡ | 758.9‡ | ..... | ..... | 75 | 23.9 | 77 | N | ..... | ..... | 4 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear ..... | |
| Tennessee, Port Said, Egypt | 29.78* | 756.4* | 74 | 23.3 | 67 | 19.4 | 89 | N | 2 | 0.9 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Blue sky..... | |
| Trenton, Villefranche, France | 29.66‡ | 753.4‡ | ..... | ..... | 65 | 18.3 | 84 | S | ..... | ..... | 0–1 | ..... | 2 | ..... | N | 0 | 0 | ..... | ..... | Fair ..... | |
| Tuscarora, N. 16° 21′, W. 98° 37′ | 29.80 | 756.9 | 75 | 23.9 | 78 | 25.6 | 86 | NNW | ..... | ..... | 0–1 | ..... | 5 | ..... | Calm | 0 | 0 | Smooth | ..... | Haze & mist.. | |
| Vandalia, N. 38° 35′, E. 15° 30′ | 29.63‡ | 752.6‡ | ..... | ..... | 64 | 17.8 | 78 | WSW | ..... | ..... | 3 | ..... | 2 | ..... | SW | ..... | ..... | Smooth | WNW | Clear.. ..... | |
| Wabash, Boston, Mass | 29.82‡ | 757.4‡ | ..... | ..... | 60 | 15.6 | 100 | S | 6 | 2.7 | ..... | ..... | 10 | ..... | ..... | 0.49 | 12.4 | ..... | ..... | Light rain.. | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable; the position given is that at noon, local time, instead of that at 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | |
| S. S. City of Peking. | | | | | | | | | | | | | | | | | | | |
| N. 38° 44', E. 137° 36' | | | 30.13† | 765.5† | 66 | 18.9 | 89 | ENE | 11.0 | 4.9 | | 8 | | ENE | Small | ENE | D. clouds | | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. Colima, | | | | | | | | | | | | | | | | | | | |
| N. 19° 20', W. 105° 34' | | | 29.92† | 760.0† | 74 | 23.3 | 81 | Var. | | | 1 | | 2 | | SE | | | D. clouds | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. W. H. Thompson. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic, | | | | | | | | | | | | | | | | | | | |
| Queenstown, Ireland | | | 30.17† | 766.3† | 53 | 11.7 | ?? | E | | | 3 | | | | SE | None | | D. clouds | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Aneroid.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, | | | | | | | | | | | | | | | | | | | |
| N. 36° 31', W. 148° 10' | | | 30.06* | 763.5* | | | | W | | | 6 | | d | | W | High | W | Squally | Capt. John Metcalf. |
| S. S. Gaelic, | | | | | | | | | | | | | | | | | | | |
| N. 43° 45', E. 169° 30' | | | 30.02† | 762.5† | 48 | 8.9 | 43 | SW | | | 4 | | n:hz | | Var. | Smooth | W | Raining | Capt. W. H. Kidley |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig, | | | | | | | | | | | | | | | | | | | |
| N. 46° 30', W. 34° 29' | | | 29.71 | 754.6 | 66.0 | 18.9 | 68 | WNW | | | 1 | | 1 | | S | Mod'ate | W | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | Character | Direction From— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, Philadelphia, Pa | | | 29.74* | 755.4* | 58 | 14.4 | ?? | E | | | 3 | | 9 | | E | | | Cloudy | Captain Sargent. |
| S. S. Ohio, N. 49° 09′, W. 28° 02′ | | | 29.78 | 756.4 | 56 | 13.3 | 90 | ENE | | | 6 | | 5? | | ENE | Rough | ENE | Clear? | Captain Morrison. |
| S. S. Pennsylvania, N. 50° 59′, W. 17° 33′ | | | 30.16† | 766.1† | 56 | 13.3 | 100 | ESE | | | 2 | | 1 | | ESE | Light | ESE | Clear | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for elevation; instrumental error not known. †Corrected for temperature and elevation, instrumental error not known.

## RED STAR LINE MARINE SERIES.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
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## ALLAN LINE MARINE SERIES.

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| S. S. Austrian | | | | | | | | | | | | | | | | | | | |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| S. S. Scandinavian, Halifax, N. S. | | | 30.17 | 766.3 | 46 | 7.8 | | SSE | | | 1 | | 10s; fg | | | | | Foggy | Capt. W. Richardson. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

## MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, St. John, N. B. | | | 29.96 | 761.0 | 55 | 12.8 | 80 | Calm | 0 | 0 | | | Fog | | | | | Dense fog | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.81 | 757.2 | 15 | — 9.4 | 86 | WNW | 4.6 | 2.1 | | | 10s | | | | | Snowing | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg$^{d}$.) Chief Signal Officer. U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 27, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 29.99 | 761.7 | 65.5 | 18.6 | 86 | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair. | Dr. Ollive. |
| Nemours | ..... | ..... | 30.04 | 763.1 | 70.3 | 21.3 | 55 | N | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Michel. |
| Algiers | ..... | ..... | 30.02 | 762.5 | 73.4 | 23.0 | 31 | WNW | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair. | Towillere. |
| La Calle | ..... | ..... | 30.06 | 763.5 | 67.6 | 19.8 | 70 | NW | ..... | ..... | 5 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Boulangeot. |
| Tunis | ..... | ..... | 30.02 | 762.4 | 70.7 | 21.5 | 39 | NW | ..... | ..... | 6 | ..... | 6 | ..... | ..... | 0 | 0 | Cloudy | Jacques. |
| Sfax | ..... | ..... | 30.11 | 764.9 | 73.4 | 23.0 | ..... | W | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Gau. |
| Saida | ..... | ..... | 29.96 | 761.0 | 73.9 | 23.3 | ..... | NW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair. | Herbin. |
| Tebessa | ..... | ..... | 30.03 | 762.8 | ..... | ..... | ..... | NW | ..... | ..... | 6 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair. | Watrin. |
| Geriville | ..... | ..... | 30.17 | 766.3 | 67.6 | 19.8 | 72 | WNW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair. | Lemaillot. |
| Laghouat | ..... | ..... | 30.15 | 765.7 | 78.4 | 25.8 | 21 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Bertrand. |
| Biskra | ..... | ..... | 30.13 | 765.3 | 80.6 | 27.0 | 31 | NW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair. | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.16 | 740.7 | 29.70 | 754.3 | 63.7 | 17.6 | 50 | N | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.020 | 0.5 | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.02 | 737.0 | 29.77 | 756.1 | 60.1 | 15.6 | 55 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.031 | 0.8 | ..... | Dr. Wierzbiski. |
| Eperies | 28.76 | 730.6 | 29.62 | 752.3 | 61.9 | 16.6 | 54 | N | ..... | ..... | 3 | ..... | 8k;s | ..... | S | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.49 | 723.7 | 29.71 | 754.5 | 63.5 | 17.5 | 44 | NW | ..... | ..... | 5 | ..... | 5 | ..... | ..... | 0.150 | 3.80 | ..... | Andreas Rospini. |
| Hermannstadt | 28.10 | 713.7 | 29.47 | 748.6 | 62.8 | 17.1 | 65 | N | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0.303 | 7.70 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.52 | 724.5 | 29.87 | 758.8 | 47.8 | 8.8 | 92 | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.787 | 20.0 | ..... | Prof. C. Wagner |
| Lemberg | 28.71 | 729.3 | 29.70 | 754.3 | 49.8 | 9.9 | 83 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Dr. T. Stanecki. |
| Pola | 29.62 | 752.4 | 29.73 | 755.2 | 60.6 | 15.9 | 79 | WNW | ..... | ..... | 2 | ..... | 7ck;n | ..... | ..... | ..... | ..... | Thunder-storm. | I.R.Hydrographic Office |
| Szathmar | 29.15 | 740.4 | 29.60 | 751.8 | 63.3 | 17.4 | 57 | NW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.33 | 744.9 | 29.60 | 751.8 | 63.3 | 17.4 | 65 | NW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Karl Stancel. |
| Trieste | 29.67 | 753.6 | 29.77 | 756.2 | 61.9 | 16.6 | 73 | NW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.378 | 9.6 | Raining | P. Busin. |
| Vienna | 29.08 | 738.5 | 29.79 | 756.7 | 51.8 | 11.0 | 91 | W | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.118 | 3.0 | Raining | I. R. Central Met.Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.56 | 725.3 | 30.07 | 763.7 | 52.3 | 11.3 | 71 | NNW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0.004 | 0.1 | ..... | Prof. M. Passau. |
| Brussels | 29.91 | 759.7 | 30.11 | 764.8 | 57.9 | 14.4 | 39 | ENE | ..... | ..... | 3 | ..... | 10 | ..... | ENE | 0 | 0 | ..... | Royal Observatory. |
| Furnes | 30.17 | 766.4 | 30.20 | 767.0 | 54.3 | 12.4 | 79 | N | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | M. E. de Cae. |
| Maeseyck | 29.97 | 761.2 | 30.10 | 764.4 | 56.3 | 13.5 | 53 | NE | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0.031 | 0.8 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4? feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

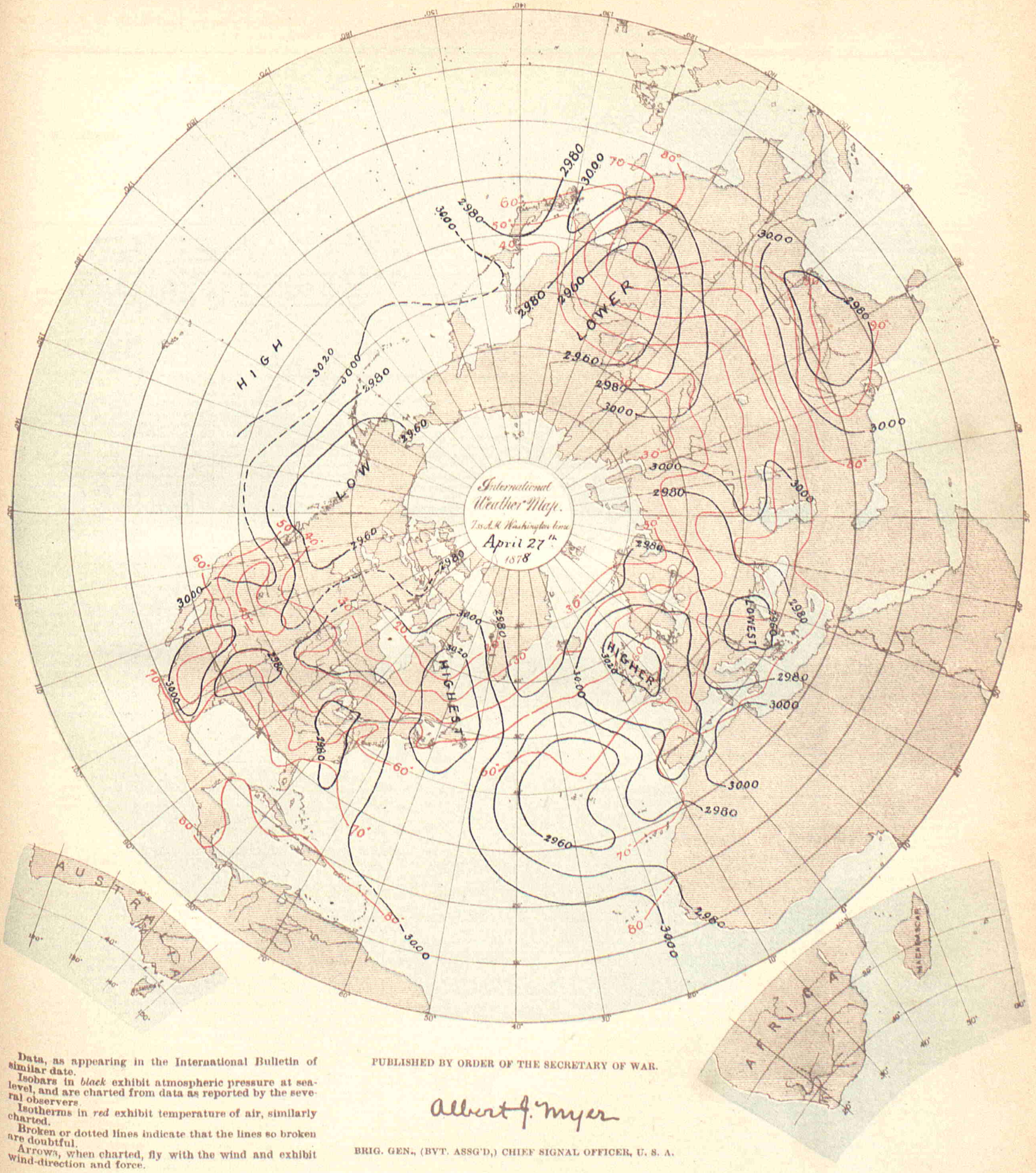
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.17 | 766.3 | 30.27 | 768.8 | 46.4 | 8.0 | ..... | E | 10 | 4.5 | ..... | ..... | 3 | ..... | ..... | 0 | 0 | Blue sky..... | W. B swell. |
| Ardrossan | 30.20 | 767.1 | 30.22 | 767.6 | 55 | 12.8 | ..... | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.19 | 766.8 | 55.6 | 12.8 | ..... | ESE | 10 | 4.5 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.21 | 767.3 | 55.3 | 12.9 | ..... | ESE | 13 | 5.8 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 30.16 | 766.1 | 57.9 | 14.4 | ..... | SE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | J. L. E. Dreyer. |
| Bradford, Yorkshire | 29.82 | 757.4 | 30.22 | 767.6 | 52.0 | 11.1 | ..... | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | J. McLandsborough. |
| Bridgetown, (Barbados) | ..... | ..... | 29.92 | 760.0 | 83.0 | 28.3 | ..... | NE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 30.22 | 767.6 | 60.5 | 15.8 | ..... | N | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds..... | H. Todd. [H. C. |
| Cardington | ..... | ..... | 30.22 | 767.6 | 57.4 | 14.1 | ..... | N | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | John McLaren. |
| Chatham, School M. E. | 30.04 | 763.0 | 30.17 | 766.3 | 57.2 | 14.0 | ..... | Calm | ..... | ..... | 0 | ..... | 4 | ..... | ..... | ..... | ..... | Blue sky..... | Q. M. Serg., Geo. Stuart, R. E |
| Dartmoor | 28.71 | 729.2 | 30.18 | 766.6 | 56.0 | 13.3 | ..... | E | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Fine..... | Alexander Watt. |
| Donaghadee | 30.20 | 767.1 | 30.23 | 767.8 | 51 | 10.6 | ..... | ENE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | J. Mac Gowan. |
| Dover | 30.17 | 766.3 | 30.19 | 766.8 | 55 | 12.8 | ..... | NNE | ..... | ..... | 5 | ..... | 4 | ..... | ..... | ..... | ..... | ½ clouded... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 30.22 | 767.6 | 59.7 | 15.4 | ..... | SE | 2.0 | 0.9 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Blue sky..... | Thomas Mackereth. |
| Falmouth, Observatory | 29.98 | 761.5 | 30.22 | 767.6 | 48.7 | 9.3 | ..... | ESE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast.... | The Staff. |
| Fort Napier, (Natal) | 27.66 | 702.6 | 29.88 | 758.9 | 77.5 | 25.3 | ..... | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.65 | 753.1 | 29.88 | 758.9 | 86.0 | 30.0 | ..... | W | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | |
| Galway, Queen's College | ..... | ..... | 30.09 | 764.3 | 60 | 15.6 | ..... | SE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.95 | 760.7 | 30.00 | 762.0 | 71.5 | 21.9 | ..... | E | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | Corpl. Wm. Allen, A. H. C. |
| Glasgow, Observatory | 30.01 | 762.2 | 30.22 | 767.6 | 52.2 | 11.2 | ..... | E | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Blue sky..... | D. G. Maclean. |
| Great Yarmouth | 30.22 | 767.6 | 30.22 | 767.6 | 47 | 8.3 | ..... | N | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | G. T. Watson. |
| Greenwich, Royal Obs'y | 30.03 | 762.7 | 30.20 | 767.1 | 61.9 | 16.6 | ..... | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds..... | The Staff, for G. B. Airy. |
| Guernsey | 29.96 | 761.0 | 30.19 | 766.8 | 51.5 | 10.8 | ..... | NE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Dr. S. E. Hoskins, F. R. S. |
| Helston | ..... | ..... | 30.18 | 766.6 | 55 | 12.8 | ..... | E | ..... | ..... | 4 | ..... | 6k | ..... | ..... | 0 | 0 | Fine..... | M. P. Moyle. |
| Holyhead | 30.15 | 765.8 | 30.20 | 767.1 | 56 | 13.3 | ..... | NW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky..... | John Tilston. |
| *Jersey | 29.91 | 759.7 | 30.21 | 767.3 | 57.0 | 13.9 | ..... | NE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | D clouds..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 30.20 | 767.1 | 57.7 | 14.3 | ..... | NNE | 9 | 4.0 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Misty..... | The Staff. |
| Kingstown | 30.18 | 766.6 | 30.20 | 767.1 | 52 | 11.1 | ..... | E | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 30.23 | 767.8 | 55.9 | 13.3 | ..... | NE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds..... | Wm. J. Harrison, F. G. S. |
| Malta, (Mediterranean) | 29.86 | 758.4 | 29.94 | 760.5 | 65.0 | 18.3 | ..... | NW | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | Sgt. Fred. Travis, A. H. |
| Nairn | 30.15 | 765.8 | 30.24 | 768.1 | 51 | 10.6 | ..... | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Clear..... | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 29.89 | 759.2 | 76.8 | 24.9 | ..... | NE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | C. S. Duncombe. |
| Nottingham, Observatory | 30.06 | 763.5 | 30.25 | 768.3 | 58.1 | 14.5 | ..... | SE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.69 | 754.1 | 30.21 | 767.3 | 56.7 | 13.7 | ..... | ESE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.21 | 767.3 | 57 | 13.9 | ..... | Calm | ..... | ..... | 0 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | Mr. Lucas. |
| Plymouth | 30.11 | 764.8 | 30.19 | 766.8 | 55.4 | 13.0 | ..... | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | John Merrifield. |
| Roche's Point | 30.13 | 765.3 | 30.18 | 766.6 | 58 | 14.4 | ..... | SE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Fine..... | W. Kennedy. |
| Saint Ann's Head | 30.02 | 762.5 | 30.18 | 766.6 | 51 | 10.6 | ..... | SE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 30.26 | 768.6 | 51.2 | 10.7 | ..... | SW | 5 | 2.2 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds..... | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 29.54 | 750.3 | 61.4 | 16.3 | ..... | SW | ..... | ..... | 1 | ..... | 4 | ..... | ..... | Blank | Blank | D. clouds..... | Sergt. W. H. Lyne. |
| Sheffield | 30.00 | 762.0 | 30.28 | 769.1 | 50.9 | 10.5 | ..... | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | D. clouds..... | W. F. Cooper. |
| Silloth Rectory | 30.18 | 766.6 | 30.21 | 767.3 | 61.6 | 16.4 | 56 | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky..... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.82 | 757.4 | 30.22 | 767.6 | 58.0 | 14.4 | ..... | SE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | Blue sky..... | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 30.18 | 766.6 | 49 | 9.4 | ..... | SSE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Clear..... | John Sutherland. |
| Stratfield Turgiss | 30.04 | 763.0 | 30.26 | 768.6 | 55.8 | 13.2 | ..... | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Rev. C. H. Griffith, F. M |
| Thurso | ..... | ..... | 30.22 | 767.6 | 55 | 12.8 | ..... | ESE | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 30.20 | 767.1 | 57 | 13.9 | ..... | SE | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds..... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 30.14 | 765.5 | 51.6 | 10.9 | ..... | WSW | 12 | 5.4 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | Hazy..... | The Staff. |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.50 | 749.3 | 55.0 | 12.8 | 94 | S | ..... | ..... | 2 | ..... | 8k | ..... | ..... | 0 | 0 | Hazy..... | Francis Abbott, F. R. A. S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.86 | 758.1 | 30.05 | 763.2 | 79.1 | 26.2 | 72 | ESE | 15.5 | 6.9 | ..... | 2 | 4 | ..... | SE | 0 | 0 | Fine..... | C. Meldrum. |
| Melbourne, Observatory | 29.62 | 752.3 | 29.71 | 754.6 | 65.2 | 18.4 | 72 | NNE | 14 | 6.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Fine..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m.

| MARINE SERIES. VESSELS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0—9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Algeria, N. 51° 55', W. 7° 10' | ..... | ..... | 30.15 | 765.8 | 49 | 9.4 | ..... | SE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | Smooth | ..... | Blue sky..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. C. Prehn. |
| S. S. Naid, N. 47° 5', W. 27° 0' | ..... | ..... | 29.57 | 751.1 | 54 | 12.2 | ..... | E | ..... | ..... | 7 | ..... | 10 | ..... | ..... | 4 | ENE | Raining..... | Capt. J. Smith. [R. |
| S. S. Peruvian, N. 54° 10' W. 19° 20' | ..... | ..... | 30.03 | 762.7 | 51 | 10.6 | ..... | SE | ..... | ..... | 4 | ..... | 2 | ..... | ..... | 3 | SE | Blue sky..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Longley. |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the Minister of Foreign Affairs.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Mr. Ansart. |
| San José | 26.21 | 665.7 | ..... | ..... | 68.9 | 20.5 | 72 | NE | ..... | ..... | 1 | 4p | Haze | ..... | ..... | 0 | 0 | ..... | Federico Maison. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 30.00 | 762.0 | 30.05 | 763.2 | 53.4 | 11.9 | 55 | NNW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... |
| Fanöe | 30.08 | 764.0 | 30.10 | 764.5 | 50.2 | 10.1 | 80 | W | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... |
| Godthaab, (Greenland) | 29.84 | 758.0 | 29.89 | 759.1 | 23.7 | —4.6 | ..... | NNW | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... |
| Stykkisholm, (Iceland) | 29.66 | 753.3 | 29.70 | 754.4 | 43.0 | 6.1 | 90 | S | ..... | ..... | 7 | ..... | 8 | ..... | ..... | ..... | ..... | ..... | Raining |
| Thorshavn, (Faröe) | 30.18 | 766.5 | 30.21 | 767.4 | 47.3 | 8.5 | 64 | W | ..... | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... |
| Vestervig | 29.93 | 760.1 | 30.10 | 764.4 | 59.7 | 15.4 | 55 | SW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.67 | 753.7 | 30.23 | 767.7 | 55.4 | 13 | 57 | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear. | Collignon, Director. |
| Amiens, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bonvarne, Director. |
| Avignon, Normal School | 29.91 | 759.8 | 29.99 | 761.8 | 64.4 | 18 | 53 | NNW | ..... | ..... | 8 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Mr. Giraud, Director |
| Bar-sur-Seine | 29.51 | 749.6 | 30.08 | 763.9 | 52.5 | 11.4 | 79 | NE | ..... | ..... | 2 | ..... | 10n | ..... | N | 0.476 | 12.1 | Covered | C. Saillard. |
| Beaumette Obs'y (Angers) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Albert Cheux. |
| Beauvais | ..... | ..... | ..... | ..... | 58.5 | 14.7 | 44 | NE | ..... | ..... | 3 | ..... | 8 | ..... | NE | 0 | 0 | Very cloudy | Normal School. |
| Besançon | 29.15 | 740.5 | 30.05 | 763.2 | 55.0 | 12.8 | 83 | NNW | ..... | ..... | 2 | ..... | 8 | ..... | NW | 0.291 | 7.4 | Very cloudy | Normal School. |
| Bourg-en-Bresse | 29.18 | 741.2 | 30.10 | 764.4 | 50.5 | 10.3 | 86 | N | ..... | ..... | 2 | ..... | 10n | ..... | N | 0.563 | 14.3 | Covered | Normal School. |
| Bourges, Normal School | 29.51 | 749.6 | 30.07 | 763.6 | 50.0 | 10 | 79 | NW | ..... | ..... | 2 | ..... | 10 | ..... | NW | 0.031 | 0.8 | Covered | A. Wagner, Director. |
| Brest, Naval Observatory | 29.87 | 758.8 | 30.09 | 764.3 | 63.5 | 17.5 | 57 | SW | ..... | ..... | 2 | 2c | ..... | WNW | ..... | 0 | 0 | ..... | The Staff. |
| Carcassonne, Normal School | 29.68 | 753.9 | 30.09 | 764.3 | 63.3 | 17.4 | 49 | W | ..... | ..... | 2 | ..... | 5 | ..... | W | 0.098 | 2.5 | Cloudy | Vateau, Director. |
| Caen | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| Chartres, Normal School | 29.47 | 748.5 | 30.05 | 763.2 | 47.7 | 8.7 | 81 | N | ..... | ..... | 4 | ..... | 10 | ..... | N | 0.122 | 3.1 | Covered | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.66 | 753.4 | 29.98 | 761.5 | 55.9 | 13.3 | 55 | NE | ..... | ..... | 4 | ..... | 5 | ..... | NE | 0 | 0 | Cloudy | T. Leloup, Director. |
| Clermont-Fd., Puy de D.Obs | 28.71 | 729.2 | 30.07 | 763.6 | 57.2 | 14.0 | 58 | N | ..... | ..... | 1 | ..... | 8 | ..... | N | 0.079 | 2.0 | Very cloudy | Alluard, Director. |
| Commercy, Normal School | 29.17 | 741.0 | 30.06 | 763.4 | 53.6 | 12 | 87 | N | ..... | ..... | 4 | ..... | 10 | ..... | N | 0.083 | 2.1 | Covered | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.76 | 730.5 | 29.90 | 759.5 | 64.6 | 18.1 | 46 | NW | ..... | ..... | 4 | ..... | 2 | ..... | NW | 0 | 0 | ¼ covered | M. Kina. |
| Grenoble | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| La Roche-sur-Yon, N. School | 29.95 | 760.7 | 30.17 | 766.2 | 59.4 | 15.2 | 45 | NNW | ..... | ..... | 1 | ..... | 5 | ..... | NNW | 0 | 0 | Cloudy | Monillot, Director. |
| Le Mans, Normal School | 29.84 | 757.8 | 30.15 | 765.7 | 56.1 | 13.4 | 62 | ENE | ..... | ..... | 2 | ..... | 5 | ..... | ENE | 0 | 0 | Cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N.School | 29.11 | 739.4 | 30.04 | 762.9 | 50.0 | 10 | 86 | W | ..... | ..... | 3 | ..... | 10 | ..... | W | 1.740 | 44.2 | Covered | Voudez, Director. |
| Lorient, Naval Observatory | 30.08 | 764.1 | 30.18 | 766.6 | 60.8 | 16.0 | 83 | SSW | ..... | ..... | 3 | ..... | 2 | ..... | NE | 0 | 0 | ¼ covered | T. Carré, Director. |
| Mâcon, Normal School | 29.39 | 746.4 | 30.06 | 763.5 | 49.6 | 9.8 | 69 | N | ..... | ..... | 4 | ..... | 5 | ..... | NW | 0.20 | 5. | Cloudy | M. Marchal, Director. |
| Metz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. A. Schuster, Dir. |
| Mirecourt | 28.93 | 734.8 | 29.99 | 761.8 | 54.3 | 12.4 | 83 | N | ..... | ..... | 2 | ..... | 8 | ..... | N | 0.08 | 2. | Very cloudy | Normal School. |
| Nismes, Normal School | 29.75 | 755.6 | 29.95 | 760.7 | 66.9 | 19.4 | 49 | NW | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Boyer, Director. |
| Orleans, Normal School | 29.72 | 755.0 | 30.10 | 764.5 | 67.1 | 19.5 | 83 | E | ..... | ..... | 2 | ..... | 5 | ..... | N | 0 | 0 | Cloudy | Bernard, Director. |
| Paris, Observatory | 29.87 | 758.6 | 30.10 | 764.6 | 58.3 | 14.6 | 39 | N | ..... | ..... | 1 | ..... | 10 | ..... | NNE | 0 | 0 | Covered | National Observatory. |
| Privas | 28.93 | 734.7 | 29.99 | 761.8 | 56.3 | 13.5 | 48 | N | ..... | ..... | 2 | ..... | 2 | ..... | N | 0 | 0 | Slightly cl'dy | Normal School |
| Puy de Dome (Summit) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.11 | 764.9 | 30.15 | 765.7 | 64.0 | 17.8 | 87 | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Lt. Decante, Director. |
| Rouen, Normal School | 30.07 | 763.7 | 30.15 | 765.9 | 62.2 | 16.8 | 50 | N | ..... | ..... | 2 | ..... | 2 | ..... | NE | 0 | 0 | Slightly cl'dy | F. Lucard, Director |
| Saint Malo (Port) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. H. Hercouet |
| Tarbes, Normal School | 29.02 | 737.2 | 30.09 | 764.2 | 62.6 | 17 | 70 | SSE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | T. Hugues, Director |
| Villefranche | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Vilot, Director |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.79 | 756.6 | 29.82 | 757.3 | 80.6 | 27 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchési. |
| Lyons | ..... | ..... | 30.09 | 764.2 | 55.0 | 12.8 | 68 | ..... | ..... | ..... | ..... | ..... | 9 | ..... | ..... | 0.04 | 1. | Rainy | M. Jeys. |
| Marseilles, Observatory | ..... | ..... | 29.84 | 757.9 | 66.9 | 19.4 | 55 | NW | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0.002 | 0.05 | ..... | The Staff. |
| Mont-Louis | 24.87 | 631.6 | 30.18 | 766.6 | 46.6 | 8.1 | 23 | NNE | 7.4 | 3.33 | ..... | ..... | 1 | ..... | W | 0 | 0 | ..... | Mr. Falguère. |
| Nice | ..... | ..... | 29.84 | 757.9 | 61.7 | 16.5 | 89 | S | ..... | ..... | 2 | ..... | 1? | ..... | ..... | 0 | 0 | Cloudy? | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.82 | 757.4 | 30.10 | 764.4 | 58.1 | 14.5 | 43 | NE | ..... | ..... | 4 | ..... | 10 | ..... | NNE | 0 | 0 | ..... | Marié Davy, Director |
| Perpignan | ..... | ..... | 30.06 | 763.4 | 63.0 | 17.2 | 43 | N | 20.5 | 9.17 | ..... | ..... | 1 | ..... | NW | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.52 | 571.9 | ..... | ..... | 39.2 | 4.0 | ..... | N | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0.150 | 3.8 | Clear | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.94 | 760.5 | 30.11 | 764.7 | 57.7 | 14.3 | 53 | NNE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.008 | 0.2 | Covered | E. Renou. |
| Toulouse, Observatory | 29.43 | 747.6 | 30.15 | 765.9 | 56.3 | 13.5 | 62 | NNW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Tours | 29.85 | 758.3 | 30.05 | 763.3 | 59.5 | 15.3 | 63 | NE | ..... | ..... | 1 | ..... | 6 | ..... | NNE | 0 | 0 | ..... | C. Marquet. |
| Versailles, (near Paris) | ..... | ..... | 30.12 | 765.1 | 57.6 | 14.2 | 45 | NE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.005 | 0.12 | Light clouds | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 29.94 | 760.5 | 29.97 | 761.2 | 59.7 | 15.4 | 56 | SE | 12.1 | 5.4 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Marc Dechevrens, S. J |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Gréasque, 322 m., or 1,055.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instru-m'tal error and temperature. Inches. | Barometer. Corrected for instru-m'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-10 | Clouds. Amount. Up'er 0-10 | Clouds. Amount. Low'r 0-10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.06 | 738.0 | 29.89 | 759.3 | 57.9 | 14.4 | 77 | NNE | | | 4 | | 7 | N | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 29.87 | 758.6 | 30.04 | 762.9 | 58.1 | 14.5 | 40 | NE | | | 2 | | 0 | | | 0.031 | 0.8 | | Prof. Arndt. |
| Breslau | 29.37 | 745.9 | 29.89 | 759.3 | 59.2 | 15.1 | 52 | NNE | | | 4 | | 6 | | | 0.140 | 3.56 | | Royal University Obs'y |
| Carlsruhe | 29.58 | 751.2 | 30.00 | 762.1 | 53.2 | 11.8 | 92 | N | | | 1 | | 10 | | | 0.264 | 6.7 | Heavy clouds... | Albert Senz. |
| Cassel | 29.51 | 749.6 | 30.12 | 765.1 | 56.8 | 13.8 | 40 | NNE | | | 4 | | 4 | N | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.90 | 759.5 | 30.07 | 763.6 | 61.3 | 16.3 | 38 | NE | | | 4 | | 8 | | | 0 | 0 | | Director Lose. |
| Emden | 30.13 | 765.4 | 30.17 | 766.3 | 58.3 | 14.6 | 42 | N | | | 3 | | 0 | | | 0 | 0 | | Prof. Prestel. |
| Frankfort on the Main | 29.71 | 754.6 | 30.07 | 763.8 | 59.4 | 15.2 | 47 | NE | | | 2 | | 5 | | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 28.56 | 725.5 | 29.99 | 761.8 | 55.8 | 13.2 | 78 | SW | | | 3 | | 6 | SW | | 0.043 | 1.1 | Light rain... | M. Wilhelm. |
| Hamburg | 30.02 | 762.6 | 30.10 | 764.4 | 59.7 | 15.4 | 41 | NW | | | 1 | | 7k | | | 0 | 0 | Fine | Captain F. Hegemann. |
| Kiel | 30.07 | 763.7 | 30.09 | 764.2 | 57.2 | 14.0 | 46 | NNE | | | 3 | | 2 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.88 | 758.9 | 29.96 | 761.0 | 50.4 | 10.2 | 55 | N | | | 5 | | 0 | | | 0 | 0 | | Prof. E Luther. |
| Köslin | | | 30.01 | 762.3 | 50.2 | 10.1 | | N | | | 4 | | 0 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.61 | 752 2 | 30.03 | 762.8 | 59.0 | 15.0 | 48 | NNW | | | 1 | | 3 | N | | 0.087 | 2.2 | | Prof. Bruhns. |
| Memel, Naval School | 29.92 | 760.0 | 29.97 | 761.2 | 46.4 | 8 0 | 59 | NW | | | 5 | | 1cs | | | | | | Reinbrecht and Skalweit. |
| Neufahrwasser | 30.04 | 762.9 | 30.05 | 763.3 | 45.1 | 7.3 | 79 | N | | | 4 | | 1 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.58 | 751.4 | 29.87 | 758 8 | 57.6 | 14.2 | 43 | NW | | | 8 | | 2 | | | 0 | 0 | | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.49 | 749.0 | 30.04 | 763.1 | 53.8 | 12.1 | 82 | Calm | | | 0 | | 10 | NW | | 0.085 | 2.17 | Raining | Dr. Schur. |
| Stuttgart | 29.04 | 737.6 | 29.98 | 761.6 | 51.3 | 10.7 | 87 | N | | | 1 | | 10 | | | 0.142 | 3.6 | Raining | Prof. Schoder. |
| Treves, (Trier) | 29.43 | 747.6 | 29.96 | 760.9 | 56.3 | 13.5 | 68 | NE | | | 4 | | 10 | | | 0.069 | 0.22 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.46 | 722.8 | 29.95 | 760.6 | 54.0 | 12 2 | 75 | N | 2 | 1 | | | 10 | | | 0.626 | 15.9 | Raining | Dr. Von Bebber. |
| Wustrow, Naval School | 30.11 | 764.8 | 30.15 | 765.8 | 51.1 | 10.6 | 70 | NE | | | 3 | | 2 | | | 0 | 0 | | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.29 | 743.9 | 29.67 | 753.6 | 73.0 | 22.8 | | SW | | | 4.5 | | | | | | | ½ clear | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.79 | 756.7 | 29.84 | 758.0 | 88.6 | 31.4 | 72 | W | 23? | 10.3? | | | 8 | | | 0 | 0 | | D. clouds. |
| Deesa | 29 38 | 746.2 | 29.83 | 757.8 | 101.1 | 38.4 | 17 | NNE | | | | | 3 | WNW | | 0 | 0 | | Misty |
| Bombay | 29.82 | 757.5 | 29.86 | 758.4 | 86.4 | 30.2 | 78 | W | 8 | 3.6 | | | 4 | | W | 0 | 0 | | D. clouds. |
| Poona | 27.83 | 706.9 | 29.80 | 757.0 | 85.8 | 29.9 | 64 | SW | | | | | 10 | | W | 0 | 0 | | Thunder. |
| Lahore | 29.09 | 739.0 | 29.82 | 757.5 | 91.1 | 32.8 | 38 | Calm | 1.2 | 0.5 | | | 4 | | | 0 | 0 | | Misty |
| Belgaum | 27.33 | 694.1 | 29.86 | 758.5 | 76.8 | 24.9 | 83 | W | 16 | 7.2 | | | 8 | W | NW;E | 1.20 | 30.5 | Thunder storm. | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.91 | 734.4 | 29.79 | 756.8 | 88.8 | 31.6 | 30 | NW | 1.7 | 0.8 | | | 0 | | | 0 | 0 | | |
| Agra | 29.29 | 743.9 | 29.84 | 758.0 | 92.6 | 33.7 | 22 | Calm | | | | | | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.75 | 730.2 | 29.76 | 755.9 | 93.8 | 34.3 | 30 | Calm | 5.1 | 2.3 | | | 9 | E | | 0 | 0 | | D. clouds. |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.42 | 747.2 | 29.78 | 756.4 | 93.3 | 34.1 | 30 | NW | 0.1 | 0.04 | | | | | | | | | |
| Allahabad | 29.44 | 747.8 | 29.74 | 755.4 | 96.1 | 35.6 | 26 | Calm | 1.6 | 0.7 | | | 0 | | | 0 | 0 | | Blue sky |
| Patna | 29.58 | 751.2 | 29.75 | 755.7 | 94.3 | 34.6 | 21 | W | 1.2 | 0.5 | | | 4 | W | W | 0 | 0 | | Blue sky |
| Hazaribagh | 27.79 | 705.9 | 29.76 | 755.8 | 89.8 | 32.1 | 21 | NW | 4.6 | 2.1 | | | 4 | | W | 0.03 | 0.8 | | D. clouds |
| Cuttack | 29.74 | 755.3 | 29.82 | 757.3 | 91.9 | 33.3 | 50 | S | 2.7 | 1.2 | | | | | SW | 0 | 0 | | |
| Calcutta (Alipore) | 29.77 | 756.2 | 29.79 | 756.8 | 89.8 | 32.1 | 47 | SSW | 6 | 2.7 | | | | | | 0 | 0 | | Blue sky |
| Goalpara | 29.40 | 746.6 | 29.78 | 756.4 | 84.7 | 29.3 | 61 | Calm | 2.1 | 0.9 | | | 1 | W | | 0 | 0 | | Blue sky |
| Chittagong | 29.74 | 755.3 | 29.83 | 757.6 | 84.9 | 29.4 | 79 | W | 5.7 | 2 5 | | | 8 | | | 0 | 0 | | D. clouds |
| Sibsagar | 29.53 | 750.0 | 29.87 | 758.6 | 76.8 | 24.9 | 85 | NNE | 3.8 | 1.7 | | | 8 | W | | 0 | 0 | | Overcast |
| Rangoon | | | | | | | | | | | | | | | | 0.13 | 3.3 | | D. clouds |
| Jubbulpore | 28.38 | 720.9 | 29.71 | 754.6 | 93.5 | 34.2 | 26 | NW | 5 | 2.2 | | | | | | | | | |
| | | | | | | | | | | | | | | | | 0 | 0 | | Blue sky |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.32 | 744.7 | 29.72 | 755.0 | 63.7 | 17.6 | 63 | W | 1.8 | 0.8 | ..... | ..... | 8 | ..... | ..... | 0.315 | 8.0 | ..... | Prof. Giovanni Codig. |
| Padua | 29.62 | 752.4 | 29.73 | 755.1 | 65.1 | 18.4 | 63 | S | 1.3 | 0.6 | ..... | ..... | 6 | ..... | ..... | 1.303 | 33.1 | ..... | Prof. Dott. Lorenzloni |
| Vicenza | 29.55 | 750.5 | 29.74 | 755.3 | 66.4 | 19.1 | 74 | S | 3.8 | 1.7 | ..... | ..... | 3 | E | ..... | 0 | 0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.45 | 722.6 | 29.75 | 755.6 | 68.4 | 20.2 | 48 | SSW | ..... | ..... | 2 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.25 | 742.9 | 29.76 | 755.8 | 68.5 | 20.3 | ..... | SW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 28.91 | 734.3 | 29.81 | 757.1 | 62.6 | 17.0 | 59 | SSE | 2.5 | 1.1 | ..... | ..... | 5 | NE | ..... | 0.110 | 2.8 | ..... | Prof. P. F. Denza. |
| Mondovi | 27.93 | 709.4 | 29.83 | 757.6 | 56.7 | 13.7 | 54 | WNW | ..... | ..... | 2 | ..... | 6 | SW | ..... | 0.146 | 3.7 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.60 | 751.9 | 29.82 | 757.5 | 61.2 | 16.2 | 74 | ESE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.64 | 752.8 | 29.81 | 757.1 | 63.3 | 17.4 | 61 | SW | 6.3 | 2.8 | ..... | ..... | 2 | N | ..... | 0 | 0 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.48 | 748.9 | 29.80 | 756.8 | 60.8 | 16.0 | 59 | SW | ..... | ..... | 6 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Prof. P. Pigorini. |
| Florence | 29.51 | 749.6 | 29.76 | 756.0 | 57.2 | 14.0 | 90 | SW | ..... | ..... | 4 | ..... | 10 | SW | ..... | 0.031 | 0.8 | ..... | Cav. F Meucci. |
| Leghorn | 29.71 | 754.5 | 29.79 | 756.6 | 63.0 | 17.2 | 66 | W | 6.3 | 2.8 | ..... | ..... | 4 | N | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 29.72 | 754.9 | 29.77 | 756.1 | 61.0 | 16.1 | 86 | N | 12.5 | 5.6 | ..... | ..... | 2 | N | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.24 | 717.2 | 29.78 | 756.3 | 59.0 | 15.0 | 64 | NE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0.130 | 3.3 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.64 | 752.9 | 29.75 | 755.7 | 64.4 | 18.0 | 65 | WNW | ..... | ..... | 4 | ..... | 6 | NE | ..... | 0 | 0 | ..... | Avv. P. Ponticelli. |
| Rome | 29.59 | 751.6 | 29.76 | 756.0 | 63.0 | 17.2 | 72 | W | 7.4 | 3.3 | ..... | ..... | 9 | ..... | ..... | 0.287 | 7.3 | ..... | Prof. P. G. S. Ferrar |
| Naples, O. U. | 29.59 | 751.5 | 29.78 | 756.5 | 70.2 | 21.2 | 55 | SSW | ..... | ..... | 4 | ..... | 6 | SW | ..... | 0.197 | 5.0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 57.4 | 14.1 | 87 | WNW | 6.3 | 2.8 | ..... | ..... | 9 | NW | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.69 | 754.1 | 29.88 | 759.0 | 65.1 | 18.4 | 34 | NW | ..... | ..... | 6 | ..... | 4 | NW | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 28.94 | 735.1 | 29.82 | 757.3 | 61.5 | 16.4 | 80 | WSW | 3.8 | 1.7 | ..... | ..... | 10 | ..... | ..... | 0.528 | 13.4 | ..... | Prof. F. D. Conti. |
| Palermo | 29.57 | 751.1 | 29.82 | 757.5 | 64.4 | 18.0 | 50 | W | 11.9 | 5.3 | ..... | ..... | 6 | W | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.69 | 754.0 | 29.76 | 755.9 | 68.7 | 20.4 | 51 | SSW | ..... | ..... | 4 | ..... | 7 | W | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.24 | 742 8 | 29.80 | 756.9 | 63.0 | 17.2 | 65 | WNW | 3.8 | 1.7 | ..... | ..... | 7 | W | ..... | 0.157 | 4.0 | ..... | Prof. F. Brioschi. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nagasaki | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Tokei (Yeddo) | 29.67 | 753 6 | 29.74 | 755.4 | 51.7 | 10.9 | 95 | NE | 4.0 | 1.8 | ..... | ..... | 10s | ..... | ..... | 0.175 | 4.45 | Cloudy | The Observatory. |
| Tokei (Yeddo) University | 29.63 | 752.6 | 29.73 | 755.0 | 53 | 11.7 | 93 | NW | 1 | 0.4 | ..... | ..... | 7ks | ..... | ..... | 0 | 0 | Fair. | Prof. P. V. Veeder. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The data are published as given. The rain-fall at the Obsezvatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 66.7 | 19.3 | 35 | N | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | L. Castillo, A. E. |
| Guadalajara | 25.00 | 635.0 | 30.04 | 763.0 | 47.3 | 8.5 | 44 | S | 0.9 | 0.4 | ..... | 0 | 2 | ..... | SE | 0 | 0 | Very clear | Prof. L. Perez. |
| Guanajuato | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 61.3 | 16.3 | 39 | N | 1.8 | 0.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico | 23.05 | 585.6 | 30.00 | 762.1 | 60.2 | 16.2 | 46 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 52.7 | 11.5 | 38 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | M. V. de Leon, M. E. |
| Puebla | 23.32 | 592.2 | 30.03 | 762.6 | 51.3 | 10.7 | 81 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 29.92 | 759.9 | 29.93 | 760.2 | 74.3 | 23.5 | 81 | SW | 0.9 | 0.4 | ..... | 0 | 10k | ..... | ..... | 0 | 0 | Threatening | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 29.90 | 759.5 | 29.93 | 760.2 | 77.9 | 25.5 | 76 | NW | ..... | ..... | ..... | 0 | 10sk | ..... | ..... | 0 | 0 | Covered | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 55.4 | 13.0 | 45 | Calm | 0 | 0 | ..... | 3 | 0 | S | ..... | 0 | 0 | Clear | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.29 | 591.6 | 30.03 | 762.7 | 53.4 | 11.9 | 64 | NNE | 1.3 | 0.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | P. Spina. [M.M. D. D |
| Morelia | 24.00 | 609.5 | ..... | ..... | 57.2 | 14.0 | 54 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | M. Tena, F. L. Param. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,135 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.16 | 766.0 | 30.16 | 766.0 | 58.1 | 14.5 | ..... | N | ..... | ..... | 4 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 30.10 | 764.4 | 30.15 | 765.8 | 57.2 | 14.0 | ..... | N | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 30.16 | 766.0 | 30.16 | 766.0 | 54.5 | 12.5 | ..... | NNE | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 30.15 | 765.7 | 30.15 | 765.7 | 61.5 | 16.4 | 67 | N | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 30.10 | 764.6 | 30.15 | 765.8 | 61.0 | 16.1 | 33 | NNE | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Light cloudy | H. v d Brink. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.06 | 763.5 | 30.11 | 764.9 | 50.0 | 10.0 | 57 | NNW | 23.0 | 10.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.87 | 758.8 | 29.91 | 759.8 | 42.8 | 6.0 | 72 | W | 18 | 8 | ..... | ..... | 9 | ..... | ..... | 0.039 | 1.0 | ..... | |
| Christiania | 29.87 | 758.6 | 30.01 | 762.3 | 58.3 | 14.6 | 43 | S | 11 | 5 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.59 | 751.6 | 29.63 | 752.7 | 33.8 | 1.0 | 81 | SW | 7 | 3 | ..... | 10 | ..... | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.38 | 746.2 | 29.57 | 751.1 | 59.5 | 15.3 | 87 | SSW | 9.8 | 4.4 | ..... | ..... | 7 | ..... | ..... | 0.167 | 4.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 29.03 | 737.3 | 30.02 | 762.6 | 74.3 | 23.5 | 36 | E | 5.6 | 2.5 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos |
| Funchal, (Madeira) | 29.84 | 757.9 | 29.93 | 760.1 | 67.1 | 19.5 | 75 | SE | 3.8 | 1.7 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.66 | 753.4 | 30.02 | 762.4 | 72.0 | 22.2 | 37 | E | 3.8 | 1.7 | ..... | ..... | 1 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 29.60 | 751.8 | 29.67 | 753.6 | 65.8 | 18.8 | 61 | SSW | 17.4 | 7.8 | ..... | ..... | 4 | ..... | ..... | 0.043 | 1.1 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell: Height scale 0-9 | Sea or swell: Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.92 | 759.9 | 29.93 | 760.1 | 82.4 | 28.0 | ..... | S | ..... | ..... | 5 | ..... | 2 | ..... | S | 2 | ..... | D. clouds.... | J. F. R. R. Bastos, Com'd't. A. J. de Mattos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Rio Douro, S. 25° 58′, E. 32° 37′ | ..... | ..... | 29.96 | 760.9 | 78.8 | 26.0 | ..... | E | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 3 | E | Blue sky..... | J. T. d'Oliveria, Com'd't. |
| Sado, N. 14° 49′, W. 23° 22′ | 30.04* | 763.0* | 30.05* | 763.3* | 78.8 | 26.0 | ..... | NNE | ..... | ..... | 2 | ..... | 5 | ..... | NE | 2 | NE | D. clouds..... | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, S. 11° 37′ 4″, E. 13° 12′ 7″ | 29.76 | 756.0 | 29.77 | 756.2 | ..... | ..... | ..... | WNW | ..... | ..... | 2 | ..... | 5 | ..... | W | 2 | W | D. clouds.... | F. Texeira da Silva, Com'd't. |
| Tejo, N. 22° 10′ E. 113° 32′ | ..... | ..... | 30.07 | 763.6 | 80.2 | 26.8 | ..... | SE | ..... | ..... | 2 | ..... | 2ck | ..... | SE | 1 | SE | ..... | F. J. Ferreira, dos Amas, Com |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.39 | 746.6 | 29.81 | 757.1 | 61.7 | 16.5 | 40 | NNE | 13 | 6 | ..... | ..... | 7ks | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.41 | 747.0 | 29.82 | 757.5 | 56.7 | 13.7 | 38 | NNW | 4 | 2 | ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 29.64 | 752.9 | 29.89 | 759.1 | 46.4 | 8.0 | 44 | NNW | 4 | 2 | ..... | ..... | 9ks | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.84 | 757.8 | 29.85 | 758.2 | 38.7 | 3.7 | 62 | WNW | 13 | 6 | ..... | ..... | 7n;ks | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.49 | 749.1 | 29.83 | 757.6 | 34.0 | 1.1 | 100 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Ch. Forsten. |
| Kieff | 29.07 | 738.4 | 29.70 | 754.4 | 52.0 | 11.1 | 85 | SE | 4 | 2 | ..... | ..... | 10kn | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.62 | 752.3 | 29.69 | 754.1 | 57.6 | 14.2 | 61 | NE | 4 | 2 | ..... | ..... | 10kn | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.72 | 754.9 | 29.74 | 755.4 | 54.1 | 12.3 | 80 | SSE | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.23 | 742.4 | 29.78 | 756.5 | 41.9 | 5.6 | 88 | N | 4 | 2 | ..... | ..... | 10s | ..... | ..... | Raining | ..... | ..... | Meteorological Obs. |
| Lugan | 29.61 | 752.2 | 29.82 | 757.3 | 63.9 | 17.7 | 27 | SSE | 13 | 6 | ..... | ..... | 6cs | ..... | ..... | Light clouds | ..... | ..... | Meteorological Obs. |
| Archangel | 29.76 | 755.8 | 29.78 | 756.3 | 29.5 | — 1.4 | 60 | WNW | 13 | 6 | ..... | ..... | 2cs | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.56 | 725.5 | 29.96 | 760.9 | 64.2 | 17.9 | 57 | Calm | 0 | 0 | ..... | ..... | 5k | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 30.07 | 763.8 | 29.99 | 761.7 | 56.3 | 13.5 | 53 | ESE | 4 | 2 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Krotkowo* | 29.34 | 745.2 | 29.80 | 757.0 | 57.9 | 14.4 | 42 | WSW | 11 | 5 | ..... | ..... | 3ks | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.42 | 747.2 | 29.89 | 754.0 | 54.0 | 12.2 | 52 | SW | 7 | 3 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.91 | 734.2 | 29.85 | 758.2 | 47.8 | 8.8 | 39 | SSE | 11 | 5 | ..... | ..... | 6c;ck | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.74 | 755.4 | 29.97 | 761.3 | 60.4 | 15.8 | 56 | W | 9 | 4 | ..... | ..... | 10k | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.48 | 723.5 | 30.19 | 766.7 | 59.4 | 15.2 | 91 | NW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | Heavy clouds... | ..... | ..... | Michelson. |
| Barnaul | 29.41 | 746.9 | 29.96 | 760.9 | 44.4 | 6.9 | 36 | NW | 0 | 0 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.50 | 749.3 | 29.84 | 757.8 | 27.5 | — 2.5 | 69 | W | 7 | 3 | ..... | ..... | 5 | ..... | ..... | Blank | Blank | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 29.41 | 746.9 | 29.55 | 750.5 | 79.7 | 26.5 | 13 | Calm | 0 | 0 | ..... | ..... | 9n | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.52 | 699.1 | 29.52 | 749.7 | 56.1 | 13.4 | 39 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.84 | 757.8 | 29.93 | 760.2 | 39.4 | 4.1 | 95 | S | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 24.4 | — 4.2 | 70 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 469 meters, or 1,541.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.90 | 759.4 | 30.00 | 762.1 | 64.4 | 18 | 54 | S | 6.0 | 2.69 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 30.08 | 763.9 | 30.13 | 765.3 | 69.6 | 20.9 | 51 | S | 2.8 | 1.26 | ..... | 3 | ..... | S | ..... | 0 | 0 | Almost clear | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.14 | 689.4 | ..... | ..... | 62.6 | 17.0 | 63 | N | 5.1 | 2.29 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Light clouds | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.86 | 707.6 | 30.02 | 762.6 | 71.1 | 21.7 | 43 | SW | 1.5 | 0.67 | ..... | 2 | 0 | WNW | ..... | 0 | 0 | Light clouds | The Staff. |
| Murcia, Met. Obs'y | 29.86 | 758.4 | 30.00 | 762.1 | 80.6 | 27.0 | 42 | NE | 2.9 | 1.31 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear..... | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 29.08 | 738.7 | 29.96 | 761.0 | 66.0 | 18.9 | 65 | WSW | 9.0 | 4.03 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | Cloudy..... | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.86 | 758.3 | 29.92 | 760.0 | 74.9 | 23.8 | 64 | N | 6.3 | 2.8 | ..... | 5ck | 0 | ..... | ..... | 0.847 | 21.5 | Fair..... | Benito Vines, S. J. |
| San Fernando, Naval Obs'y | 29.91 | 759.7 | 30.01 | 762.1 | 74.8 | 23.8 | 41 | SW | 10.6 | 4.7 | ..... | 0 | 3 | ..... | SW | 0 | 0 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.84 | 757.8 | 29.93 | 760.1 | 79.2 | 26.2 | 88 | SE | 4.5 | 2.00 | ..... | 2cs | 1k | SE | SE | 0.148 | 3.75 | Clear..... | Leonardo de Tejeda, Chief of Engineers. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.



Furnished by the cooperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.84 | 757.8 | 29.87 | 758.8 | 33.1 | 0.6 | ..... | S | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.84 | 757.9 | 29.89 | 759.2 | 39.2 | 4.0 | 67 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.008 | 0.2 | ..... | |
| Hernosand | 29.85 | 758.2 | 29.90 | 759.5 | 47.8 | 8.8 | 66 | N | ..... | ..... | 4 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.76 | 756.0 | 29.94 | 760.5 | 51.8 | 11.0 | 73 | NNW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.93 | 760.2 | 29.99 | 761.7 | 44.2 | 6.8 | 80 | NNW | ..... | ..... | 4 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.86 | 758.5 | 29.94 | 760.4 | 51.8 | 11 0 | 45 | NNW | 11.6 | 5.2 | ..... | ..... | 9 | ..... | NNW | 0 | 0 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.58 | 725.9 | 30.00 | 762.0 | 56.3 | 13.5 | 62 | NW | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0.457 | 11.6 | Covered | The Observatory. |
| Zurich | 28.36 | 720 3 | 30.00 | 761.9 | 54.0 | 12.2 | 73 | W | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.185 | 4.7 | Cloudy | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +1.5 mm.; Thermometer, −0.2 cent.; Relative Humidity, +5 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.60 | 751.9 | 58.1 | 14.5 | 79 | SW | 9 | 4.0 | ..... | ..... | 5 | ..... | ..... | 0.579 | 14.7 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanides. |
| Valona | ..... | ..... | 29.81 | 757.2 | 65.3 | 18.5 | ..... | W | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0.28 | 7. | Slightly cl'dy | A. Bertrand. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.75 | 755.6 | 29.86 | 758.5 | 68.9 | 20.5 | 68 | NE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.12 | 765.0 | 30.19 | 766.8 | 42.1 | 5.6 | 86 | Calm | 0 | 0 | ..... | ..... | 9n | ..... | ..... | ..... | ..... | Gloomy | Hon. J. Ferguson. |
| Brockville, Ontario | 29.63 | 752.6 | 29.92 | 760.0 | 63 | 17.2 | ..... | Calm | 0 | 0 | ..... | 5c | 0 | NE | .. ..... | 0.44 | 11.2 | Fair | W. R. Bigg. |
| *Chatham, N B | 30.14 | 765.5 | 30.21 | 767.3 | 52 | 11.1 | 93 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | G. A. Blair. |
| Charlottetown, P. E. Island | 30.23 | 767.8 | 30.27 | 768.8 | 52 | 11.1 | 98 | S | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0.010 | 0.25 | Foggy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.67 | 753.6 | 29.86 | 758 4 | 56.7 | 13.7 | 93 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.195 | 4.96 | Clear | James Smith, M. A. |
| Dalhousie, N. B | 30.16 | 766.1 | 30.19 | 766.8 | 49.5 | 9.7 | 100 | SE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | Foggy | H. A. Johnson. |
| Esquimault, B. C | 29.70 | 754.4 | 29.74 | 755.4 | 49.3 | 9.6 | 93 | N | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Overcast | W. H. Revis. |
| *Father Point, Quebec | 30.06 | 763.5 | 30.08 | 764.0 | 40 | 4.4 | 91 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | SW | Inap. | Inap. | Cloudy | J. McWilliams. |
| Fredericton, N. B | 30.15 | 765.8 | 30.21 | 767.3 | 55.6 | 13.1 | 90 | SE | 14 | 6.3 | ..... | ..... | 10s | ..... | ..... | 0.13 | 3.3 | Misty | Prof. Harrison. |
| *Fort Garry Manitoba | 29.25 | 742.9 | 30.08 | 764.0 | 44 | 6.7 | 92 | NE | 7 | 3.1 | ..... | 5k | 5ks | N | N | 0 | 0 | Threatening | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.72 | 729.5 | 29.82 | 757.4 | 47 | 8.3 | 100 | E | ..... | ..... | 1 | ..... | 10n | ..... | ..... | Inap. | Inap. | Cloudy | James Grant. |
| *Halifax, N. S | 30.13 | 765.3 | 30.27 | 768.8 | 44 | 6.7 | 99 | SE | 3 | 1.3 | ..... | ..... | Fog | ..... | ..... | 0.009 | 0.23 | Foggy | E. Allison, M. A. |
| Hamilton, Ontario | 29.49 | 749.0 | 29.86 | 758.4 | 51.7 | 10.9 | 88 | E | ..... | ..... | 1 | 5ck | ..... | ..... | ..... | 0 | 0 | Fair | Geo. Dickson, M. A. |
| Heart's Content, N. F | 30.22 | 767.6 | 30.24 | 768.1 | 47 | 8.3 | 85 | W | ..... | ..... | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fine | E. Weedon. |
| *Kingston, Ontario | 29.55 | 750.6 | 29.88 | 758.9 | 58 | 14.4 | 82 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.27 | 6.9 | Clear | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.27 | 768.8 | 30.31 | 769.9 | 43.0 | 6.1 | ..... | SW | 2 | 0.9 | ..... | 2c | 0 | SW | ..... | 0 | 0 | Fair | C. H. Rigby. |
| *Montreal, Quebec | 29.73 | 755.1 | 29.92 | 760.0 | 58 | 14.4 | 89 | SE | 12 | 5.4 | ..... | 5cs | Sm'c | SE | ..... | 0.06 | 1.5 | Cloudy | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.17 | 740.9 | 29.86 | 758.4 | 51 | 10.6 | 96 | N | 1 | 0.4 | ..... | 2ck | 5ks | E | E | 0.22 | 5.6 | Fair | Rev. R. Mosley. |
| Peterboro, Ontario | 29.11 | 739.4 | 29.85 | 758.2 | 52 2 | 11.2 | 96 | E | ..... | ..... | ..... | ..... | 10n | ..... | ..... | ? | ? | Raining | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 29.13 | 739.9 | 29.81 | 757.2 | 51 | 10.6 | 93 | E | 2 | 0.9 | ..... | 5k | 0 | S | ..... | 0.07 | 1.8 | Cloudy | H. Morgan. |
| Port Hastings, N. S | 30.26 | 768.6 | 30.31 | 769.9 | 39.6 | 4.2 | ..... | Calm | 0 | 0 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Foggy | Peter Grant. |
| Port Stanley, Ontario | 29.17 | 740.9 | 29.81 | 757.2 | 53 | 11.7 | 81 | E | 8 | 3.6 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | M. Payne. |
| *Quebec, Quebec | 29.68 | 753.9 | 30.01 | 762.2 | 45 | 7.2 | 92 | NE | ..... | ..... | ..... | ..... | 10n | ..... | NE | 0.28 | 7.1 | Cloudy | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.43 | 747.5 | 29.89 | 759.2 | 53 | 11.7 | 83 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | S | 0 | 0 | Fair | W. H. McIntyre. |
| St. Andrews, N. B | 30.11 | 764.8 | 30.16 | 766.1 | 48 | 8.9 | 99 | SE | 2 | 0.9 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Foggy | Dr. Gove. |
| St. John, N. B | 30.05 | 763.3 | 30.21 | 767.3 | 53 | 11.7 | 96 | SE | 7 | 3.1 | ..... | ..... | 9ks | ..... | ..... | 0 | 0 | Pleasant | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.13 | 739.9 | 29.84 | 757.9 | 50 | 10.9 | 71 | E | 10 | 4.5 | ..... | ..... | 10ks | ..... | S | 0.28 | 7.1 | Cloudy | K. Stewart. |
| Stayner, Ontario | 29.09 | 738.9 | 29.87 | 758.7 | 51 | 10.6 | 93 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 1.36 | 34.5 | Foggy | R. J. Cole. |
| Stratford, Ontario | 28.55 | 725.2 | 29.82 | 757.4 | 50.3 | 10.2 | 97 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | ..... | 0.293 | 7.45 | Cloudy | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.28 | 769.1 | 30.31 | 769.9 | 53 | 11.7 | 76 | W | 3 | 1.3 | ..... | 8c | 0 | SW | ..... | 0 | 0 | Fair | T. C. Hill. |
| *Toronto, Ontario | 29.49 | 749.0 | 29.87 | 758.7 | 50 | 10.0 | 91 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | S | 0.01 | 0.3 | Cloudy | Magnetic Observatory. |
| Windsor, N. S | 30.16 | 766.1 | 30.26 | 768.6 | 52.0 | 11.1 | 100 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Fair | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 53.0 | 11.7 | 80 | N | ..... | ..... | ..... | 5k | 5s | ..... | ..... | 0 | 0 | Fair | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

1878.—April 27.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0–10. | CLOUDS. Amount. Up'er 0–10 | CLOUDS. Amount. Low'r 0–10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.69 | 754.1 | 29.91 | 759.7 | 60 | 15.6 | 82 | Calm | 0 | 0 | ..... | 2c | Sm'e | S | ..... | 0 | 0 | Fair | |
| Alpena, Michigan | 29.19 | 741.4 | 29.83 | 757.7 | 48 | 8.9 | 92 | N | 8 | 3.6 | ..... | ..... | 10s | ..... | N | 0.28 | 7.1 | Cloudy | |
| Atlantic City, New Jersey | 29.84 | 757.9 | 29.86 | 758.4 | 57 | 13.9 | 93 | SE | 13 | 5.8 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Fair | |
| Augusta, Georgia | 29.66 | 753.4 | 29.84 | 757.9 | 68 | 20.0 | 51 | Calm | 0 | 0 | ..... | 0 | 0 | Calm | ..... | 0 | 0 | Clear | |
| Baltimore, Maryland | 29.77 | 756.1 | 29.82 | 757.4 | 63 | 17.2 | 78 | N | 5 | 2.2 | ..... | 2ck | 0 | Calm | ..... | Inap. | Inap. | Fair | |
| Barnegat, New Jersey | 29.87 | 758.7 | 29.89 | 759.2 | 56 | 13.3 | 90 | E | 8 | 3.6 | ..... | 2c | 2s | SW | E | 0.02 | 0.5 | Fair | |
| Bismarck, Dakota | 28.12 | 714.2 | 29.98 | 761.5 | 47 | 8.3 | 70 | E | 10 | 4.5 | ..... | 2c | 0 | N | ..... | 0 | 0 | Clear | |
| Boise City, Idaho | 27.15 | 689.6 | 30.03 | 762.7 | 45 | 7.2 | 84 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | W | 0.06 | 1.5 | Cloudy | |
| Boston, Massachusetts | 29.84 | 757.9 | 29.99 | 761.7 | 55 | 12.8 | 100 | Calm | 0 | 0 | ..... | ..... | 10n;fg | ..... | ..... | 0.31 | 7.9 | Light rain | |
| Brackettville, Texas | 28.70 | 729.0 | 29.70 | 754.4 | 66 | 18.9 | 74 | SE | 1 | 0.4 | ..... | 8c | 0 | W | ..... | 0 | 0 | Cloudy | |
| Breckenridge, Minnesota | 29.00 | 736.6 | 30.01 | 762.2 | 42 | 5.6 | 91 | SE | 8 | 3.6 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Brownsville, Texas | 29.83 | 757.7 | 29.87 | 758.7 | 71 | 21.7 | 79 | SE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 29.12 | 739.6 | 29.80 | 756.9 | 56 | 13.3 | 81 | S | 3 | 1.3 | ..... | 2c | 2s | Calm | Calm | 0.08 | 2.0 | Fair | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 65 | 18.3 | 49 | S | ..... | ..... | 1 | 8k | 0 | W | ..... | 0 | 0 | Fair | |
| Burlington, Vermont | 29.68 | 753.9 | 29.93 | 760.2 | 62 | 16.7 | 77 | S | 6 | 2.7 | ..... | 8c | 0 | S | ..... | 0.19 | 4.8 | Cloudy | |
| Cairo, Illinois | 29.55 | 750.6 | 29.94 | 760.5 | 53 | 11.7 | 67 | NW | 4 | 1.8 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Camp Grant, Arizona | 25.06 | 636.5 | 29.86 | 758.4 | 50 | 10.0 | 32 | W | ..... | ..... | 1 | Haze | 0 | Calm | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | 26.68 | 677.7 | 30.17 | 766.3 | 49 | 9.4 | 57 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.37 | 695.2 | 29.94 | 760.5 | 44 | 6.7 | 92 | SW | 5 | 2.2 | ..... | 0 | 8s | ..... | S | 0 | 0 | Cloudy | |
| Cape Hatteras, N. Carolina | 29.81 | 757.2 | 29.81 | 757.2 | 69 | 20.6 | 90 | SE | 6 | 2.7 | ..... | 2k | 0 | SW | ..... | 0 | 0 | Fair | |
| Cape Henry, Virginia | 29.74 | 755.4 | 29.76 | 755.9 | 60 | 15.6 | 94 | SE | 12 | 5.4 | ..... | ..... | Fog | ..... | ..... | 0.03 | 0.8 | Dense fog | |
| Cape Lookout, N. Carolina | 29.78 | 756.4 | 29.79 | 756.7 | 68 | 20.0 | 74 | SE | 11 | 4.9 | ..... | 5ck | 0 | SW | ..... | 0 | 0 | Fair | |
| Cape May, New Jersey | 29.82 | 757.4 | 29.85 | 758.2 | 60 | 15.6 | 82 | SE | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 29.77 | 756.1 | 29.83 | 757.7 | 67 | 19.4 | 74 | NW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 25.92 | 607.6 | 29.86 | 758.4 | 38 | 3.3 | 81 | Calm | 0 | 0 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Chicago, Illinois | 29.16 | 740.7 | 29.85 | 758.2 | 44 | 6.7 | 92 | NE | 12 | 5.4 | ..... | ..... | 10n | ..... | NE | 0.32 | 8.1 | Light rain | |
| Cincinnati Ohio | 29.14 | 740.1 | 29.78 | 756.4 | 52 | 11.1 | 73 | NW | 5 | 2.2 | ..... | ..... | 10ks | ..... | NW | 0.08 | 2.0 | Threatening | |
| Cleveland, Ohio | 29.07 | 738.4 | 29.78 | 756.4 | 52 | 11.1 | 86 | SE | 5 | 2.2 | ..... | ..... | 10n | ..... | Calm | 0.05 | 1.3 | Light rain | |
| Concho, Texas | 27.88 | 708.1 | 29.51 | 749.5 | 63 | 17.2 | 57 | SW | ..... | ..... | 1 | 8c | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Corsicana, Texas | 29.42 | 747.3 | 29.88 | 758.9 | 58 | 14.4 | 82 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Davenport, Iowa | 29.31 | 744.5 | 29.95 | 760.7 | 48 | 8.9 | 78 | N | 4 | 1.8 | ..... | ..... | 10s | ..... | N | 0 | 0 | Cloudy | |
| Deadwood, Dakota | 25.25 | 641.3 | ..... | ..... | 53 | 11.7 | 48 | S | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Denison, Texas | 29.09 | 738.9 | 29.87 | 758.7 | 61 | 16.1 | 77 | E | 4 | 1.8 | ..... | 1ck | 2ks | NW | NW | 0 | 0 | Fair | |
| Denver, Colorado | 24.66 | 626.4 | 29.88 | 758.9 | 43 | 6.1 | 43 | S | 4 | 1.8 | ..... | 10cs | 0 | W | ..... | 0 | 0 | Cloudy | |
| Detroit, Michigan | 29.10 | 739.1 | 29.76 | 755.9 | 50 | 10.0 | 93 | NE | 6 | 2.7 | ..... | ..... | 10n | ..... | NE | 0.09 | 2.3 | Light rain | |
| Dodge City, Kansas | 27.31 | 693.7 | 29.55 | 750.6 | 54 | 12.2 | 74 | E | 8 | 3.6 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.22 | 742.2 | 29.92 | 760.0 | 48 | 8.9 | 70 | N | 6 | 2.7 | ..... | 10k | 0 | N | ..... | 0 | 0 | Cloudy | |
| Duluth, Minnesota | 29.39 | 746.5 | 30.08 | 764.0 | 38 | 3.3 | 81 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Eagle Pass, Texas | 29.16 | 740.7 | 29.81 | 757.2 | 63 | 17.2 | 89 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 30.09 | 764.3 | 30.16 | 766.1 | 52 | 11.1 | 100 | S | 9 | 4.0 | ..... | ..... | Fog | ..... | Calm | 0.08 | 2.0 | Foggy | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 67 | 19.4 | 41 | W | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.09 | 738.9 | 29.79 | 756.7 | 57 | 13.9 | 75 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | ..... | 0 | 0 | Cloudy | |
| Escanaba, Michigan | 29.28 | 743.7 | 29.94 | 760.5 | 41 | 5.0 | 74 | N | 20 | 8.9 | ..... | ..... | 10s | ..... | N | 0.01 | 0.3 | Cloudy | |
| Florence, Arizona | 28.18 | 715.8 | 29.78 | 756.4 | 54 | 12.2 | 61 | W | 2 | 0.9 | ..... | 10k | 0 | W | ..... | 0 | 0 | Cloudy | |
| Fort Bayard, New Mexico | 24.03 | 610.4 | 30.03 | 762.7 | 51 | 10.6 | 27 | NW | 11 | 4.9 | ..... | 5c | c | Calm | ..... | 0 | 0 | Fair | |
| Fort Craig, New Mexico | 25.36 | 644.1 | 29.42 | 747.3 | 46 | 7.8 | 33 | NW | 1 | 0.4 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Fort Davis, Texas | 25.08 | 637.0 | 30.04 | 763.0 | 62 | 16.7 | 29 | W | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.36 | 745.7 | 29.88 | 758.9 | 58 | 14.4 | 88 | NE | 1 | 0.4 | ..... | 2ck | 0 | NW | ..... | 0 | 0 | Clear | |
| Fort Griffin, Texas | 28.54 | 724.9 | 29.77 | 756.1 | 61 | 16.1 | 66 | Calm | 0 | 0 | ..... | 2c | 2s | NW | Calm | 0 | 0 | Fair | |
| Fort St. Michael, Alaska | 29.52 | 749.8 | 29.56 | 750.8 | 26 | — 3.3 | 100 | N | 15 | 6.7 | ..... | ..... | 10n | ..... | N | 0.11 | 2.8 | Snowing | |
| Fort Sill, Indian Territory | 28.64 | 727.4 | 29.70 | 754.4 | 60 | 15.6 | 80 | Calm | 0 | 0 | ..... | 5k | 0 | W | ..... | 0 | 0 | Fair | |
| Galveston, Texas | 29.89 | 759.2 | 29.93 | 760.2 | 71 | 21.7 | 80 | SW | 5 | 2.2 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.18 | 741.2 | 29.82 | 757.4 | 50 | 10.0 | 86 | NE | 6 | 2.7 | ..... | ..... | 10ks | ..... | NE | 0.17 | 4.3 | Cloudy | |
| Indianapolis, Indiana | 29.05 | 737.9 | 29.82 | 757.4 | 48 | 8.9 | 78 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.02 | 0.5 | Cloudy | |
| Indianola, Texas | 29.89 | 759.2 | 29.92 | 760.0 | 73 | 22.8 | 81 | S | 11 | 4.9 | ..... | 5k | 0 | SW | ..... | 0 | 0 | Fair | |
| Jacksboro, Texas | 28.68 | 728.5 | 29.78 | 756.4 | 63 | 17.2 | 57 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 29.85 | 758.2 | 29.87 | 758.7 | 72 | 22.2 | 46 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.31 | 744.5 | 29.92 | 760.0 | 48 | 8.9 | 70 | N | 7 | 3.1 | ..... | 0 | 4s | ..... | Calm | Inap. | Inap. | Fair | |
| Key West, Florida | 29.89 | 759.2 | 29.93 | 760.2 | 75 | 23.9 | 56 | N | 14 | 6.3 | ..... | 1k | 0 | N | ..... | 0 | 0 | Clear | |
| Kittyhawk, North Carolina | 29.79 | 756.7 | 29.82 | 757.4 | 66 | 18.9 | 95 | S | 7 | 3.1 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Clear | |
| Knoxville, Tennessee | 28.86 | 733.0 | 29.86 | 758.4 | 50 | 10.0 | 86 | SW | 4 | 1.8 | ..... | ..... | 9ks | ..... | W | 0.07 | 1.8 | Cloudy | |
| La Crosse, Wisconsin | 29.23 | 742.4 | 29.98 | 761.5 | 42 | 5.6 | 83 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 25.93 | 658.6 | 30.08 | 764.0 | 45 | 7.2 | 60 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.42 | 747.3 | 29.74 | 755.4 | 70 | 21.1 | 80 | SE | 6 | 2.7 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Leavenworth, Kansas | 29.11 | 739.4 | 29.95 | 760.7 | 49 | 9.4 | 85 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.63 | 752.6 | 29.97 | 761.2 | 50 | 10.0 | 86 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.27 | 743.4 | 29.83 | 757.7 | 51 | 10.6 | 72 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | NW | Inap. | Inap. | Cloudy | |
| Lynchburg, Virginia | 29.10 | 739.1 | 29.76 | 755.9 | 59 | 15.0 | 76 | W | 2 | 0.9 | ..... | 0 | 8ks | ..... | Calm | 0.05 | 1.3 | Cloudy | |
| Marquette, Michigan | 29.28 | 743.7 | 30.00 | 762.0 | 39 | 3.9 | 82 | NW | 10 | 4.5 | ..... | ..... | 10s | ..... | NW | 0.04 | 1.0 | Cloudy | |
| Mason, Texas | 28.24 | 717.3 | 29.94 | 760.5 | 64 | 17.8 | 73 | S | 4 | 1.8 | ..... | 8c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Memphis, Tennessee | 29.63 | 752.6 | 29.94 | 760.5 | 58 | 14.4 | 70 | E | 1 | 0.4 | ..... | 0 | Fog | ..... | Calm | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.15 | 740.4 | 29.88 | 758.9 | 46 | 7.8 | 92 | N | 14 | 6.3 | ..... | ..... | 10s | ..... | ..... | 0.09 | 2.3 | Cloudy | |
| Mobile, Alabama | 29.88 | 758.9 | 29.93 | 760.2 | 66 | 18.9 | 59 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Montgomery, Alabama | 29.66 | 753.4 | 29.88 | 758.9 | 62 | 16.7 | 46 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Morgantown, West Virginia | 28.74 | 730.0 | 29.78 | 756.4 | 52 | 11.1 | 79 | W | 1 | 0.4 | ..... | ..... | 10s | ..... | W | 0.08 | 2.0 | Cloudy | |
| Mt. Washington, N. H. | 23.86 | 606.0 | 30.22 | 767.6 | 40 | 4.4 | 100 | S | 54 | 24.1 | ..... | ..... | 10n | ..... | S | 2.20 | 55.9 | Heavy rain | |
| Nashville, Tennessee | 29.36 | 745.7 | 29.88 | 758.9 | 57 | 13.9 | 69 | W | 4 | 1.8 | ..... | Haze | 2s | Calm | Calm | Inap. | Inap. | Fair | |
| New Haven, Connecticut | 29.86 | 758.4 | 29.97 | 761.2 | 55 | 12.8 | 100 | E | 5 | 2.2 | ..... | ..... | 10n;fg | ..... | Calm | 0.03 | 0.8 | Light rain | |
| New London, Connecticut | 29.92 | 760.0 | 29.97 | 761.2 | 54 | 12.2 | 93 | N | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0.07 | 1.8 | Dense fog | |
| New Orleans, Louisiana | 29.88 | 758.9 | 29.93 | 760.2 | 71 | 21.7 | 71 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Newport, Rhode Island | 29.94 | 760.5 | 29.99 | 761.7 | 54 | 12.2 | 100 | SE | 3 | 1.3 | ..... | ..... | Fog | ..... | ..... | 0.89 | 22.6 | Foggy | |
| New York, New York | 29.76 | 755.9 | 29.94 | 760.5 | 51 | 10.6 | 100 | NE | 12 | 5.4 | ..... | ..... | Fog | ..... | Calm | 0.01 | 0.3 | Foggy | |
| Norfolk, Virginia | 29.75 | 755.6 | 29.81 | 757.2 | 65 | 18.3 | 84 | S | 5 | 2.2 | ..... | 0 | 8ks | ..... | SW | Inap. | Inap. | Fair | |
| North Platte, Nebraska | 27.03 | 686.6 | 29.60 | 751.8 | 45 | 7.2 | 76 | E | 8 | 3.6 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Olympia, Washington Ter. | 29.75 | 755.6 | 29.78 | 756.4 | 43 | 6.1 | 92 | Calm | 6 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Omaha, Nebraska | 28.86 | 733.0 | 29.94 | 760.5 | 48 | 8.9 | 78 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Oswego, New York | 29.56 | 750.8 | 29.87 | 758.7 | 58 | 14.4 | 82 | S | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.33 | 8.4 | Clear | |
| Pembina, Dakota | 29.20 | 741.7 | 30.03 | 762.7 | 42.5 | 5.8 | 87 | Calm | 0 | 0 | ..... | 10k | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Philadelphia, Pennsylvania | 29.82 | 757.4 | 29.87 | 758.7 | 55 | 12.8 | 100 | NE | 12 | 5.4 | ..... | ..... | Fog | ..... | Calm | 0.04 | 1.0 | Foggy | |
| Phœnix, Arizona | 28.66 | 728.0 | 30.45 | 773.4 | 57 | 13.9 | 69 | SE | ..... | ..... | 1 | 10k | 0 | S | ..... | 0 | 0 | Cloudy | |
| Pike's Peak, Colorado | 17.69 | 449.3 | 29.90 | 759.4 | 16 | — 8.9 | 66 | SW | 10 | 4.5 | ..... | 8k | 0 | SW | ..... | 0.06 | 1.5 | Fair | |
| Pioche, Nevada | 23.95 | 608.3 | 29.72 | 754.9 | 37 | 2.8 | 81 | NW | 6 | 2.7 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Pittsburg, Pennsylvania | 28.99 | 736.3 | 29.79 | 756.7 | 53 | 11.7 | 86 | SE | 3 | 1.3 | ..... | ..... | 10n | ..... | S | 0.02 | 0.5 | Light rain | |
| Port Huron, Michigan | 29.13 | 739.9 | 29.79 | 756.7 | 45 | 7.2 | 100 | N | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.35 | 8.9 | Light rain | |
| Portland, Maine | 30.00 | 762.0 | 30.05 | 763.3 | 52 | 11.1 | 93 | E | 10 | 4.5 | ..... | ..... | Fog | ..... | ..... | 0.98 | 24.9 | Dense fog | |
| Portland, Oregon | 29.82 | 757.4 | 29.93 | 760.2 | 50 | 10.0 | 86 | SE | 4 | 1.8 | ..... | ..... | 10ks | ..... | S | 0.02 | 0.5 | Cloudy | |
| Prescott, Arizona | 24.52 | 622.8 | 29.88 | 758.9 | 43 | 6.1 | 59 | SE | 1 | 0.4 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Punta Rassa, Florida | 29.91 | 759.7 | 29.93 | 760.2 | 72 | 22.2 | 62 | NE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Red Bluff, California | 29.73 | 755.1 | 30.09 | 764.3 | 53 | 11.7 | 80 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy. | |
| Rochester, New York | 29.22 | 742.2 | 29.82 | 757.4 | 57 | 13.9 | 75 | SW | 8 | 3.6 | ..... | 1k | 0 | Calm | ..... | 0.70 | 17.8 | Clear | |
| Roseburg, Oregon | 29.36 | 745.7 | 29.93 | 760.2 | 50.5 | 10.3 | 90 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.17 | 4.3 | Cloudy | |
| Sacramento, California | 30.02 | 762.5 | 30.10 | 764.5 | 46 | 7.8 | 92 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear. | |
| St. Louis, Missouri | 29.31 | 745.2 | 29.92 | 760.0 | 50 | 10.0 | 65 | NW | 8 | 3.6 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| St. Marks, Florida | 29.59 | 759.2 | 29.90 | 759.4 | 60 | 15.6 | 82 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.16 | 740.7 | 30.00 | 762.0 | 40 | 4.4 | 73 | N | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Salt Lake City, Utah | 25.58 | 649.7 | 29.91 | 759.7 | 43 | 6.1 | 83 | NW | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.73 | 18.5 | Heavy rain | |
| San Antonio, Texas | 29.18 | 741.2 | 29.75 | 755.6 | 67 | 19.4 | 89 | S | 2 | 0.9 | ..... | 2cs | 5ks | Calm | SE | 0 | 0 | Cloudy | |
| San Diego, California | 29.96 | 761.0 | 30.03 | 762.7 | 51 | 10.6 | 86 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandusky, Ohio | 29.12 | 739.6 | 29.78 | 756.4 | 53 | 11.7 | 93 | S | 4 | 1.8 | ..... | ..... | 10n | ..... | S | 0.04 | 1.0 | Light rain | |
| Sandy Hook, New Jersey | 29.90 | 759.4 | 29.93 | 760.2 | 51 | 10.6 | 100 | E | 20 | 8.9 | ..... | ..... | Fog | ..... | E | 0.05 | 1.3 | Foggy | |
| San Francisco, California | 30.05 | 763.3 | 30.12 | 765.0 | 54 | 12.2 | 83 | SE | 6 | 2.7 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Santa Fé, New Mexico | 23.16 | 588.2 | 29.70 | 754.4 | 44 | 6.7 | 23 | SE | 4 | 1.8 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Savannah, Georgia | 29.75 | 755.6 | 29.84 | 757.9 | 71 | 21.7 | 53 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap | Clear | |
| Shreveport, Louisiana | 29.72 | 754.9 | 29.93 | 760.2 | 67 | 19.4 | 74 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 29.79 | 756.7 | 29.82 | 757.4 | 69 | 20.6 | 70 | S | 9 | 4.0 | ..... | 1cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Springfield, Massachusetts | 29.79 | 756.7 | 29.92 | 760.0 | 60 | 15.6 | 82 | NE | 3 | 1.3 | ..... | ..... | 10s | ..... | NE | 0.01 | 0.3 | Cloudy. | |
| Stockton, Texas | 26.79 | 680.4 | 29.79 | 756.7 | 59 | 15.0 | 58 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.97 | 761.2 | 30.02 | 762.5 | 50 | 10.0 | 93 | SE | 4 | 1.8 | ..... | ..... | Fog | ..... | SE | 0.41 | 10.4 | Dense fog | |
| Toledo, Ohio, | 29.08 | 738.6 | 29.74 | 755.4 | 52 | 11.1 | 93 | N | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.29 | 7.4 | Light rain | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 48 | 8.9 | 71 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tybee Island, Georgia | 29.80 | 756.9 | 29.83 | 757.7 | 67 | 19.4 | 64 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Umatilla, Oregon | 29.61 | 752.1 | ..... | ..... | 43 | 6.1 | 67 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Vicksburg, Mississippi | 29.68 | 753.9 | 29.94 | 760.5 | 63 | 17.2 | 83 | W | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Virginia City, Montana | 24.17 | 613.9 | 29.65 | 753.1 | 39 | 3.9 | 82 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.27 | 6.9 | Light rain | |
| Visalia, California | 29.96 | 755.9 | 30.14 | 765.5 | 45 | 7.2 | 84 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Washington, D. C. | 29.71 | 754.6 | 29.82 | 757.4 | 63 | 17.2 | 78 | SE | 3 | 1.3 | ..... | 5ck | Fog | SE | SE | Inap. | Inap. | Fair | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 47 | 8.3 | 55 | W | ..... | ..... | 1 | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 29.72 | 754.9 | 29.80 | 756.9 | 69 | 20.6 | 68 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Winnemucca, Nevada | 25.66 | 651.8 | 30.02 | 762.5 | 32 | 0.0 | 69 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wood's Holl, Mass | 29.93 | 760.2 | 29.99 | 761.7 | 56 | 13.3 | 93 | SE | 8 | 3.6 | ..... | ..... | 10n;fg | ..... | Calm | 0.23 | 5.8 | Light rain | |
| Yankton, Dakota | 28.72 | 729.5 | 30.03 | 762.7 | 39 | 3.9 | 86 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Yuma, Arizona | 29.71 | 754.6 | 29.87 | 758.7 | 61 | 16.1 | 45 | W | 13 | 5.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| York Factory, B. A. | 30.10 | 764.5 | 30.16 | 766.1 | 26.5 | — 3.1 | 94 | W | 10 | 4.5 | ..... | 2c | 0 | NW | ..... | 0 | 0 | Fair | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I. | 29.87 | 758 7 | 29.89 | 759.2 | 75 | 23.9 | 63 | N | 2.4 | 1.1 | ..... | ..... | 10n | ..... | NE | 0.85 | 21.6 | Cloudy | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I. | 30.08 | 764.0 | 30.09 | 764.3 | 79 | 26.1 | 86 | Calm | 0 | 0 | ..... | 8c | 0 | Calm | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I. | 29.82 | 757.4 | 29.90 | 759.4 | 80 | 26.7 | ..... | SE | 2 | 0.9 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | 29.95 | 760.7 | 29.95 | 760.7 | 83 | 28.3 | 83 | E | ..... | ..... | 1 | 5ck | 5s | E | ..... | 0.500 | 12.70 | Fair | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dr. H. Groot. |
| Medellin, Colombia, S. A. | 25.24 | 641.1 | ..... | ..... | 65.0 | 18.3 | 90 | Calm | ..... | ..... | 0 | ..... | 10n | ..... | ..... | 1.18 | 30.0 | ..... | Thomas Herran |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 metres; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,100.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,550 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 m.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er —10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.07 | 763.8 | 53 | 11.7 | 51 | 10.6 | 93 | ESE | 4 | 1.8 | .... | ..... | 5 | ..... | Calm | 0 | 0 | ..... | ..... | Clear ..... | |
| Navy Yard, Pensacola, Fla. | 30.03 | 762.7 | 74 | 23.3 | 74 | 23.3 | 90 | SW | 5 | 2.2 | .... | ..... | 2 | ..... | ..... | 0.15 | 3.8 | ..... | ..... | Clear ..... | |
| Navy Yard, Portsmouth, N.H. | 30.10 | 764.5 | 74 | 23.3 | 60 | 10.0 | 100 | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.6 | 15. | ..... | ..... | Dense fog.... | |
| Naval Hospital, Yokohama, Japan | 29.72* | 754.9* | 60.5 | 15.8 | 53.8 | 12.1 | 93 | ENE | ..... | ..... | 1 | ..... | 5ks | ..... | NNE | 0.62 | 15.7 | ..... | ..... | Clearing..... | |
| Adams, Panama | 29.97 | 761.2 | 81 | 27.2 | 81 | 27.2 | 91 | WNW | ..... | ..... | 1 | ..... | 2 | ..... | WNW | ..... | ..... | Smooth | ..... | Fair ..... | |
| Alliance, Villefranche, France | 29.82‡ | 757.4‡ | ..... | ..... | 66 | 18.9 | 74 | E | ..... | ..... | 1 | ..... | 5 | ..... | E | ..... | ..... | Light | S | Pleasant..... | |
| Ashuelot. Nagasaki, Japan | 29.99 | 761.7 | 56 | 13.3 | 52 | 11.1 | 86 | NE | ..... | ..... | 1 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Clear;misty | |
| Canonicus, New Orleans, La | 29.92 | 760.0 | 51 | 10.6 | 71 | 21.7 | 70 | SSW | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Colorado, New York, N. Y. | 29.92‡ | 760.0‡ | ..... | ..... | 52 | 11.1 | 100 | NE | 2 | 0.9 | ..... | ..... | 10 | ..... | NE | 0 | 0 | ..... | ..... | Dense fog.... | |
| Constellation, Havre, France | 30.26‡ | 768.6‡ | ..... | ..... | 55 | 12.8 | 80 | NNW | ..... | ..... | 1 | ..... | 5 | ..... | NE | ..... | ..... | ..... | ..... | Fair..... ..... | |
| Constitution, Havre, France | 30.15‡ | 765.8‡ | ..... | ..... | 55 | 12.8 | 74 | N | ..... | ..... | 2 | ..... | 3 | ..... | ENE | ..... | ..... | ..... | ..... | Pleasant..... | |
| Despatch, Constantinople, Turkey | 29.62‡ | 752.3‡ | ..... | ..... | 58 | 14.4 | 76 | SW | ..... | ..... | 3 | ..... | 5 | ..... | SW | ..... | ..... | ..... | ..... | Fair ..... | |
| Franklin, Norfolk, Va | 29.94 | 760.5 | 67 | 19.4 | 65 | 18.3 | 78 | SE | 3.3 | 1.5 | .... | ..... | 5 | ..... | SSE | 3. | 76. | ..... | ..... | D. clouds.... | |
| Gettysburg Valetta, Malta | 29.87‡ | 758.7‡ | ..... | ..... | 64 | 17.8 | ?? | W | ..... | ..... | 5 | ..... | 2 | ..... | NW | 0 | 0 | ..... | ..... | Clear ..... | |
| Guard, N. 15° 20′, W. 25° 15′ | 30.06 | 763.5 | 80 | 26.7 | 79 | 26.1 | 74 | WSW | ..... | ..... | 1 | ..... | 2 | ..... | W | ..... | ..... | Smooth | ..... | Clear..... | |
| Hartford, Montevideo, Uraguay | 29.87 | 758.7 | 68 | 20 0 | 66 | 18.9 | 89 | ENE | 12 | 5.4 | ..... | ..... | 10 | ..... | ..... | 0.019 | 0.48 | Smooth | ..... | Cloudy..... | |
| Marion, Smyrna, Turkey | 29.67 | 753.6 | 63 | 17.2 | 65 | 18.3 | 73 | S | ..... | ..... | 6 | ..... | 8 | ..... | S | Light | Light | Chop | S | Cloudy..... | |
| Michigan, Erie, Pa | 29.36 | 745.7 | 80 | 26.7 | 56 | 13.3 | 75 | S | ..... | ..... | 1 | ..... | 10 | ..... | S | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monocacy. Shanghai, China | 30.00‡ | 762.0‡ | ..... | ..... | 62 | 16.7 | 56 | S | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| New Hampshire, Port Royal, S. C | 30.02† | 762.5† | ..... | ..... | 69 | 20.6 | 75 | WNW | 11 | 4.9 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Omaha, Portsmouth, N. H | 29.90* | 759.4* | 54 | 12 2 | 50 | 10.0 | 93 | NE | 5 | 2.2 | ..... | ..... | 10 | ..... | ..... | 0.5 | 13. | ..... | ..... | Rain & fog... | |
| Onward, Callao, Peru | 30.04† | 763.0† | ..... | ..... | 67 | 19 4 | 84 | SE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Long | W | Foggy..... | |
| Ossipee, N. 36° 40′ W. 75° 34′ | 29.86‡ | 758.4‡ | ..... | ..... | 62 | 16.7 | 100 | ESE | ..... | ..... | 1 | ..... | 2 | ..... | SE | ..... | ..... | Mod'ate | S | Foggy ..... | |
| Palos, Shanghai, China | 30.07* | 763.8* | 65 | 18.3 | 62 | 16.7 | 72 | SE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Hazy..... | |
| Pensacola, San Francisco, Cal | 30.19 | 766.8 | 56 | 13.3 | 53 | 11.7 | 93 | SE | 3 | 1.3 | .... | ..... | 0 | ..... | ..... | 0 | 0 | Smooth | ..... | Fair..... | |
| Plymouth, N. 28° 40′ W. 69° 28′ | 29.87‡ | 758.7‡ | ..... | ..... | 67 | 19.4 | 95 | NE | ..... | ..... | 2 | ..... | 8 | ..... | NE | ..... | ..... | Smooth | ..... | Fair ..... | |
| Powhatan, Norfolk, Va | 29.84‡ | 757.9‡ | ..... | ..... | 65 | 18.3 | 100 | Calm | 0 | 0 | ..... | ..... | 8 | ..... | ..... | 0.06 | 1.5 | ..... | ..... | Pleasant..... | |
| Ranger, Amoy, China | 30.19* | 766.8* | ..... | ..... | 74 | 23.3 | 81 | ENE | ..... | ..... | 1-2 | ..... | 2 | ..... | Calm | ..... | ..... | Smooth | NE | D. clouds.... | |
| Rio Bravo, Brownsville, Texas | 29.84 | 757.9 | 68 | 20.0 | 68 | 20.0 | 100 | S | ..... | ..... | 1 | ..... | 2 | ..... | NE | ..... | ..... | ..... | ..... | Clear..... | |
| Santee, Annapolis, Md | 29.82‡ | 757.4‡ | ..... | ..... | 66 | 18.9 | 74 | S | ..... | ..... | 1 | ..... | 8 | ..... | SE | 0 | 0 | ..... | ..... | Cloudy..... | |
| Saratoga, Washington, D. C | 29.75 | 755.6 | 68 | 20.0 | 68 | 20.0 | 90 | Calm | ..... | ..... | 0 | ..... | 3 | ..... | SE | Slight | Slight | ..... | ..... | Clear. ..... | |
| St. Louis, League Island, Pa | 29.84 | 757.9 | 63 | 17.2 | 61 | 16.1 | 82 | NE | 4 | 1.8 | ..... | ..... | 5 | ..... | E | 0.01 | 0.3 | ..... | ..... | Fair ..... | |
| Supply, Havre, France | 30.22 | 767.6 | 55 | 12.8 | 56 | 13.3 | 75 | N | ..... | ..... | 3 | ..... | 5 | ..... | N | ..... | ..... | ..... | ..... | Clear ..... | |
| Swatara, Key West, Fla | 29.92‡ | 760.0‡ | ..... | ..... | 76 | 24.4 | 72 | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Tennessee, Alexandria, Egypt | 29.82* | 757.4* | 76 | 24.4 | 74 | 23.3 | 72 | NW | 3 | 1.3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Blue sky..... | |
| Trenton, Villefranche, France | 29.79‡ | 756.7‡ | ..... | ..... | 71 | 21.7 | 90 | SE | ..... | ..... | 0-1 | ..... | 5 | ..... | N | 0 | 0 | ..... | ..... | Fair ..... | |
| Tuscarora, N. 16° 21′, W. 98° 37′ | 29.78 | 756.4 | 77 | 25.0 | 78 | 25.6 | 86 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | Calm | 0 | 0 | Smooth | ..... | Misty & hazy | |
| Vandalia, Valetta, Malta | 29.98‡ | 761.5‡ | ..... | ..... | 65 | 18.3 | 68 | NW | ..... | ..... | 4 | ..... | 2 | ..... | NW | ..... | ..... | ..... | ..... | Clear..... | |
| Wabash, Boston, Mass | 29.98‡ | 761.5‡ | ..... | ..... | 57 | 13.9 | 94 | E | 2 | 0.9 | ..... | A..... | 10 | ..... | ..... | 0.36 | 9.1 | ..... | ..... | Light rain.. | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable; the position given is that at noon, local time, instead of that at 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | Character. | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | |
| S. S. China | | | | | | | | | | | | | | | | | | | |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of Peking, N. 33° 40′, E. 137° 39′ | | | 29.77† | 756.1† | 61 | 16.1 | 88 | ENE | 15.0 | 6.7 | | | 9 | | NW | Smooth | Calm | Showery | Lt. Z. L. Tanner, U.S.N |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. Colima, N. 17° 21′, W. 101° 33′ | | | 29.92† | 760.0† | 75 | 23.9 | 90 | NE | | | 1-2 | | 2 | | SE | Very small | WSW | D. clouds | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic | | | | | | | | | | | | | | | | | | | Capt. W. H. Thompson. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic, N. 50° 57′, W. 15° 50′ | | | 30.00† | 762.0† | 54 | 12.2 | 100 | SE | | | 5 | | 3 | | SE | Light | S | D. clouds | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Aneroid.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, N. 35° 54′, W. 152° 35′ | | | 30.27* | 768.8* | | | | NW | | | 4 | | d | | NW | Mod'ate | W | D. clouds | Capt. John Metcalf. |
| S. S. Gaelic, N. 44° 00′, E. 176° 02′ | | | 30.06† | 763.5† | 49 | 4.4 | ?? | W | | | 5 | | s,hz | | W | Smooth | W | Overcast | Capt. W. H. Kidley |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig, N. 44° 33′, W. 41° 39′ | | | 29.80 | 756.9 | 61.2 | 16.2 | 66 | NE | | | 5 | | 7 | | SW | Mod'te | NE | | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | Character | Direction From— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From—. | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, Philadelphia, Pa | | | 29.92* | 760.0* | 60 | 15.6 | 88 | ENE | | | 4 | | 6 | | | | | Clear? | Captain Sargent. |
| S. S. Ohio, N. 50° 03′, W. 23° 01′ | | | 29.62 | 752.1 | 54 | 12.2 | 93 | ENE | | | 6 | | 10 | | ENE | Rough | ENE | Misty | Captain Morrison. |
| S. S. Pennsylvania, N. 50° 11′, W. 26° 39′ | | | 29.75† | 755.6† | 50 | 10.0 | 100 | ENE | | | 6 | | 9 | | NE | Mod'ate | NE;E | Cloudy | Captain Harris. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for elevation; instrumental error not known. †Corrected for temperature and elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |

**ALLAN LINE MARINE SERIES.**

Furnished by the coöperation of A. Schumacher, & Co., Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| S. S. Scandinavian, Halifax, N. S. | | | 30.31 | 769.9 | 46 | 7.8 | | SE | | | 1 | | 10s; fg | | | | | Foggy | Capt. W. Richardson. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.)**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, St. John, N. B. | | | 30.07 | 763.8 | 57 | 13.9 | 81 | SE | | | | | Fog | | | | | Foggy | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 30.15 | 765.8 | 12.9 | —10.6 | 92 | W | 6.1 | 2.7 | | | 10s | | | | | Clearing | O. T. Sherman. |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer. U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 28, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 29.96 | 760.9 | 67.8 | 19.9 | 78 | Calm | ..... | ..... | 0 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Dr. Ollive. |
| Nemours | ..... | ..... | 29.99 | 761.8 | 71.6 | 22 0 | 50 | NNW | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Michel. |
| Algiers | ..... | ..... | 30.00 | 762 1 | 67.3 | 19.6 | 72 | NE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Towiliere. |
| La Calle | ..... | ..... | 30.13 | 765.2 | 68.0 | 20.0 | 74 | N | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Boulangeot. |
| Tunis | ..... | ..... | 30.13 | 765.3 | 73.2 | 22.9 | 26 | NNW | ..... | ..... | 5 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Jacques. |
| Sfax | ..... | ..... | 30.18 | 766.5 | 73.4 | 23 0 | ..... | S | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Fair | Gau. |
| Saida | ..... | ..... | 30.00 | 762 1 | 87.8 | 31.0 | ..... | SSW | ..... | ..... | 8 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Herbin. |
| Tebessa | ..... | ..... | 30.09 | 764.2 | ..... | ..... | ..... | W | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Watrin. |
| Geriville | ..... | ..... | 30.23 | 767.7 | 69.1 | 20.6 | 75 | W | ..... | ..... | 3 | ..... | 7 | ..... | ..... | 0 | 0 | Very cloudy | Lemaillot. |
| Laghouat | ..... | ..... | 30.17 | 766.4 | 81.3 | 27.4 | 28 | Calm | ..... | ..... | 0 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Bertrand. |
| Biskra | ..... | ..... | 30.07 | 763.8 | 83.3 | 28.5 | 34 | NW | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.45 | 748.1 | 29.99 | 761.8 | 66.0 | 18.9 | 31 | NE | ..... | ..... | 3 | ..... | 6 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.30 | 744.3 | 30.07 | 763.8 | 56.1 | 13.4 | 46 | W | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbiski. |
| Eperies | 29.08 | 738.7 | 29.95 | 760.8 | 59.5 | 15.3 | 35 | N | ..... | ..... | 5 | ..... | 7cs;8 | ..... | S | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.80 | 731.4 | 30.02 | 762.6 | 62.2 | 16.8 | 32 | NW | ..... | ..... | 4 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.42 | 721.8 | 29.82 | 757.3 | 56.5 | 13.6 | 62 | NNE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.72 | 729.6 | 30.06 | 763.4 | 58.3 | 14.6 | 55 | WSW | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner |
| Lemberg | 28.91 | 734.2 | 29.88 | 759.0 | 56.3 | 13.5 | 43 | NE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Dr. T. Stanecki. |
| Pola | 29.89 | 759.1 | 30.00 | 761.9 | 69.1 | 20.6 | 52 | E | ..... | ..... | 1 | ..... | 2ks | ..... | ..... | 0.193 | 4.9 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.42 | 747.3 | 29.87 | 758.8 | 65.7 | 18.7 | 33 | N | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.60 | 751.7 | 29.87 | 758.6 | 63.3 | 17.4 | 54 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Karl Stancel. |
| Trieste | 29.92 | 759.9 | 30.02 | 762.5 | 68.4 | 20.2 | 36 | E | ..... | ..... | 1 | ..... | 2 | ..... | ..... | Inap. | Inap. | Half clear. | P. Busin. |
| Vienna | 29.36 | 745.8 | 30.07 | 763.8 | 60.4 | 15.8 | 42 | NNW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.65 | 727.8 | 30.15 | 765.9 | 56.5 | 13.6 | 47 | SE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Prof. M. Passau. |
| Brussels | 29.97 | 761.2 | 30.17 | 766.3 | 60.3 | 15.7 | 49 | E | ..... | ..... | 2 | ..... | 3 | ..... | E | 0 | 0 | ..... | Royal Observatory. |
| Furnes | 30.18 | 766.6 | 30.21 | 767.2 | 60.3 | 15.7 | 72 | NNW | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | M. E. de Cae. |
| Maeseyck | 30.07 | 763.6 | 30.19 | 766.8 | 58.5 | 14.7 | 44 | NE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0.008 | 0.2 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4? feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 30.04 | 763.0 | 30.14 | 765.5 | 46.0 | 7.8 | ..... | S | 16 | 7.2 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | Misty. | W. B swell. |
| Ardrossan | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 30.06 | 763.5 | 58.0 | 14.4 | ..... | SE | 18 | 8 0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 30.11 | 764.8 | 62.8 | 17.1 | ..... | SSE | 12 | 5.4 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 30.02 | 762.5 | 55.4 | 13.0 | ..... | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | D. clouds | J. L. E. Dreyer. |
| Bradford, Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | J. McLandsborough. |
| Bridgetown, (Barbados) | ..... | ..... | 29.92 | 760.0 | 84.0 | 28.9 | ..... | NE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 30.18 | 766.6 | 64.0 | 17.8 | ..... | SE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds | H. Todd. [H. C. |
| Cardington | ..... | ..... | 30.17 | 766.3 | 65.0 | 18.3 | ..... | SE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | John McLaren. |
| Chatham, School M. E. | 30.04 | 763.0 | 30.18 | 766.6 | 52.2 | 11.2 | ..... | E | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | Q. M. Serg., Geo. Stuart, R. E |
| Dartmoor | 28.64 | 727.4 | 30.11 | 764.8 | 56.0 | 13.3 | ..... | E | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | Fine | Alexander Watt. |
| Donaghadee | 30.06 | 763.5 | 30.09 | 764.3 | 55 | 12.8 | ..... | SE | ..... | ..... | 3 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | J. Mac Gowan. |
| Dover | 30.15 | 765.8 | 30.18 | 766.6 | 53 | 11.7 | ..... | NE | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | ½ clouded | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 30.12 | 765.0 | 61.6 | 16.4 | ..... | SW | 0.4 | 0.2 | ..... | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | Thomas Mackereth. |
| Falmouth, Observatory | 29.86 | 758.4 | 30.00 | 764.3 | 53.3 | 11.8 | ..... | ESE | ..... | ..... | 4 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | The Staff. |
| Fort Napier, (Natal) | 27.63 | 701.8 | 29.82 | 757.4 | 75.4 | 24.1 | ..... | E | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.63 | 752.6 | 29.86 | 758.4 | 89.0 | 31.7 | ..... | W | ..... | ..... | 0 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's College | ..... | ..... | 29.92 | 760.0 | 56 | 13.3 | ..... | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.96 | 761.0 | 30.01 | 762.2 | 72.0 | 22.2 | ..... | E | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds | Corpl. Wm. Allen, A. H. C. |
| Glasgow, Observatory | 29.88 | 758.9 | 30.08 | 764.0 | 56.2 | 13.4 | ..... | NNE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky | D. G. Maclean. |
| Great Yarmouth | 30.20 | 767.1 | 30.21 | 767.3 | 44 | 6.7 | ..... | SE | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | Misty | G. T. Watson. |
| Greenwich, Royal Obs'y | 30.00 | 762 0 | 30.17 | 766.3 | 58.9 | 14.9 | ..... | E | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | The Staff, for G. B. Airy. |
| Guernsey | 29.88 | 758.9 | 30.10 | 764.5 | 55.5 | 13.1 | ..... | ENE | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 30.06 | 763.5 | 60 | 15.6 | ..... | E | ..... | ..... | 4 | ..... | 4c | ..... | ..... | 0 | 0 | Fine | M. P. Moyle. |
| Holyhead | 30.06 | 763.5 | 30.11 | 764.8 | 61 | 16.1 | ..... | SW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | John Tilston. |
| *Jersey | 29.84 | 757.9 | 30.13 | 765.3 | 61.6 | 16.4 | ..... | E | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds | J. Fisher. |
| Kew, Observatory | ..... | ..... | 30.16 | 766.1 | 58.5 | 14.7 | ..... | E | 18 | 8.0 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | D clouds | The Staff. |
| Kingstown | 30.06 | 763.5 | 30.09 | 764.3 | 55 | 12.8 | ..... | SE | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | George Mitchell. |
| Leicester, Museum | ..... | ..... | 30.15 | 765.8 | 60.0 | 15.6 | ..... | SE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | D. clouds | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 29.94 | 760.5 | 30.02 | 762.5 | 65.0 | 18.3 | ..... | NW | ..... | ..... | 6 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | Sgt. Fred. Travis, A. H. |
| Nairn | 29.97 | 761.2 | 30.06 | 763.5 | 60 | 15.6 | ..... | E | ..... | ..... | 1 | ..... | 0 | ..... | ..... | ..... | ..... | Clear | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 29.95 | 760.7 | 79.2 | 26.2 | ..... | SE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | C. S. Duncombe. |
| Nottingham, Observatory | 29.97 | 761.2 | 30.16 | 766.1 | 64.7 | 18.2 | ..... | SE | ..... | ..... | 2 | ..... | 6k;ks | ..... | W | 0 | 0 | D. clouds | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.62 | 752.3 | 30.13 | 765.3 | 63.1 | 17.3 | ..... | SE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 30.14 | 765.5 | 62 | 16.7 | ..... | E | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | Blue sky | Mr. Lucas. |
| Plymouth | 30.02 | 762.5 | 30.10 | 764.5 | 59.2 | 15.1 | ..... | SE | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | John Merrifield. |
| Roche's Point | 29.97 | 761.2 | 30.01 | 762.2 | 58 | 14.4 | ..... | SE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Dull | W. Kennedy. |
| Saint Ann's Head | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | John C. Walker. |
| Sandwick Manse, (Orkneys.) | ..... | ..... | 30.09 | 764 3 | 53.8 | 12.1 | ..... | SSE | 13 | 5.8 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.68 | 753.9 | 58.0 | 14.4 | ..... | NE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy | Sergt. W. H. Lyne. |
| Sheffield | 29.88 | 758.9 | 30.16 | 766.1 | 59.9 | 15.5 | ..... | NE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0 | 0 | Blue sky | W. F. Cooper. |
| Silloth Rectory | 30.07 | 763.8 | 30.10 | 764.5 | 65.5 | 18.6 | 47 | Calm | ..... | ..... | 0 | ..... | 0 | ..... | ..... | 0 | 0 | Blue sky | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.73 | 755.1 | 30.13 | 765.3 | 61.2 | 16.2 | ..... | S | ..... | ..... | 1 | ..... | 6 | ..... | ..... | ..... | ..... | Misty | Rev. S. J. Perry. |
| Storroway, Lewis C., (Hebr.) | ..... | ..... | 30.01 | 762.2 | 54 | 12.2 | ..... | SSW | ..... | ..... | 6 | ..... | 0 | ..... | ..... | ..... | ..... | Clear | John Sutherland. |
| Stratfield Turgiss | 29.94 | 760.5 | 30.15 | 765.8 | 63.6 | 17.6 | ..... | NE | ..... | ..... | 1 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | Rev. C. H. Griffith, F. M |
| Thurso | ..... | ..... | 30.05 | 763.3 | 55 | 12.8 | ..... | NE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 30.07 | 763.8 | 61 | 16.1 | ..... | E | ..... | ..... | 5 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 29.91 | 759.7 | 56.1 | 13.4 | ..... | SE | 31 | 13.9 | ..... | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.38 | 746.2 | 62.0 | 16.7 | 83 | NW | ..... | ..... | 2 | ..... | 10n | ..... | ..... | 0.06 | 1.5 | Light rain | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.82 | 757.4 | 30.01 | 762.3 | 80.2 | 26.8 | 77 | ESE | 16.0 | 7.2 | ..... | 1 | 4 | ..... | ESE | 0.02 | 0.5 | Squally | C. Meldrum. |
| Melbourne, Observatory | 29.40 | 746.7 | 29.49 | 749.0 | 56.3 | 13.5 | 67 | NW | 17 | 7.6 | ..... | ..... | 3 | ..... | ..... | 0.05 | 1.3 | Fine | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m.

## MARINE SERIES.

VESSELS.

| | Sea or swell: Height scale 0–9 | Sea or swell: Direction from— | | | Observer |
|---|---|---|---|---|---|
| S. S. Algeria | ..... | ..... | ..... | ..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | ..... | Capt. C. C. Prehn. |
| S. S. Naid, N. 48° 35′, W. 25° 45′ | 3 | Confused | Overcast | ..... | Capt. J. Smith. [R. |
| S. S. Peruvian, N. 55° 10′ W. 11° 0′ | 3 | WSW | D. clouds | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire | ..... | ..... | ..... | ..... | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO., 330 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | ..... | ..... | ..... | ..... | 66 2 | 19.0 | 79 | E | ..... | ..... | 1 | 2pc | Haze | ..... | ..... | 0 | 0 | ..... | Mr. Ansart. |
| San José | 26.21 | 665.7 | ..... | ..... | | | | | | | | | | | | | | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.99 | 761.8 | 30.04 | 763.0 | 58.6 | 14.8 | 51 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Fanöe | 30.08 | 764.1 | 30.10 | 764.6 | 50.0 | 10.0 | 73 | W | ..... | ..... | 4 | ..... | 9 | ..... | ..... | ..... | ..... | ..... | |
| Godthaab, (Greenland) | 29.82 | 757.3 | 29.86 | 758.4 | 22.6 | — 5.2 | 76 | NE | ..... | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | |
| Stykkisholm, (Iceland) | 29.37 | 745.9 | 29.41 | 747.0 | 44.8 | 7.1 | 94 | S | ..... | ..... | 8 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | |
| Thorshavn, (Faröe) | 29.98 | 761.4 | 30.01 | 762.3 | 51.3 | 10.7 | 62 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | |
| Vestervig | 29.88 | 758.9 | 30.05 | 763.2 | 50.5 | 10.3 | 83 | NW | ..... | ..... | 4 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.59 | 751.5 | 30.14 | 765.5 | 57.2 | 14 | 83 | SE | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | Collignon, Director. |
| Amiens, Normal School | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bonvarne, Director. |
| Avignon, Normal School | 29.97 | 761.2 | 30.05 | 763.2 | 68.0 | 20 | 54 | N | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | Mr. Giraud, Director |
| Bar-sur-Seine | 29.55 | 750.6 | 30.10 | 764.6 | 63.5 | 17.5 | 48 | SE | ..... | ..... | 1 | 2c | ..... | ..... | ..... | Inap. | Inap. | Slightly cl'dy | C. Saillard. |
| Beaumette Obs'y (Angers) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Albert Cheux. |
| Beauvais | ..... | ..... | ..... | ..... | 64.4 | 18 | 43 | ..... | ..... | ..... | 2 | ..... | 10 | ..... | ENE | 0 | 0 | Covered | Normal School. |
| Besançon | 29.22 | 742.3 | 30.10 | 764.5 | 64.4 | 18 | 50 | ENE | ..... | ..... | 2 | ..... | 5 | ..... | NE | 0.181 | 4.6 | Cloudy | Normal School. |
| Bourg-en-Bresse | 29.26 | 743.3 | 30.19 | 766.7 | 62.2 | 16.8 | 66 | N | ..... | ..... | 2 | ..... | 5kn | ..... | N | 0.008 | 0.2 | Cloudy | Normal School. |
| Bourges, Normal School | 29.57 | 751.0 | 30.10 | 764.6 | 59.9 | 15.5 | 75 | SE | ..... | ..... | 2 | ..... | 1 | ..... | SE | 0 | 0 | Slightly cov. | A. Wagner, Director. |
| Brest, Naval Observatory | 29.75 | 755.6 | 29.97 | 761.2 | 64.2 | 17.9 | 56 | SW | ..... | ..... | 3 | ..... | 2 | ..... | SW | 0 | 0 | ..... | The Staff. |
| Carcassonne, Normal School | 29.60 | 751.8 | 30.00 | 761.9 | 71.6 | 22 | 23 | NW | ..... | ..... | 2 | ..... | 2 | ..... | NW | 0 | 0 | Slightly cl'dy | Vateau, Director. |
| Caen | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| Chartres, Normal School | 29.39 | 746.4 | 29.95 | 760.6 | 58.6 | 14.8 | 89 | SE | ..... | ..... | 3 | ..... | 4 | ..... | SE | 0 | 0 | ..... | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.78 | 756.4 | 30.10 | 764.4 | 64.0 | 17.8 | 53 | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.72 | 729.6 | 30.02 | 762.5 | 62.6 | 17.0 | 46 | SE | ..... | ..... | 2 | ..... | 5 | ..... | S | 0 | 0 | Cloudy | Alluard, Director. |
| Commercy, Normal School | 29.28 | 743.6 | 30.15 | 765.7 | 59.7 | 15.4 | 55 | E | ..... | ..... | 2 | ..... | 2 | ..... | E | 0 | 0 | Slightly cl'dy | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.74 | 730.1 | 29.89 | 759.1 | 70.3 | 21.3 | 38 | SE | ..... | ..... | 4 | ..... | 2 | ..... | SE | 0 | 0 | ¼ Covered | M. Kina. |
| Grenoble | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Normal School. |
| La Roche-sur-Yon, N. School | 29.84 | 757.8 | 30.05 | 763.2 | 64.8 | 18.2 | 55 | NNW | ..... | ..... | 1 | ..... | 5 | ..... | NNW | 0 | 0 | Partly cl'dy | Mouillot, Director. |
| Le Mans, Normal School | 29.80 | 756.8 | 30.10 | 764.6 | 62.2 | 16.8 | 53 | NE | ..... | ..... | 2 | ..... | 5 | ..... | NE | 0 | 0 | Cloudy | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 29.19 | 741.3 | 30.09 | 764.3 | 61.2 | 16.2 | 77 | NE | ..... | ..... | ..... | ..... | 5 | ..... | NE | 0.925 | 23.5 | Cloudy | Voudez, Director. |
| Lorient, Naval Observatory | 29.96 | 760.9 | 30.06 | 763 4 | 62.2 | 16.8 | 63 | SSE | ..... | ..... | 3 | ..... | 5 | ..... | E | 0 | 0 | ½ Covered | T. Carré, Director. |
| Mâcon, Normal School | 29.54 | 750.3 | 30.23 | 767.8 | 52.5 | 11.4 | 80 | NNW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | M. Marchal, Director. |
| Metz | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. A. Schuster, Dir. |
| Mirecourt | 29.03 | 737.3 | 30.07 | 763.6 | 60.8 | 16 | 52 | N | ..... | ..... | 1 | ..... | 5 | ..... | NW | 0.20 | 5. | Cloudy | Normal School. |
| Nismes, Normal School | 29.88 | 758.9 | 30.08 | 763.9 | 70.9 | 21.6 | 45 | NE | ..... | ..... | 2 | ..... | 2 | ..... | S | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| Orleans, Normal School | 29.78 | 756.4 | 30.15 | 765.7 | 73.4 | 23 | 75 | S | ..... | ..... | 2 | ..... | 5 | ..... | SW | 0 | 0 | Cloudy | Bernard, Director. |
| Paris, Observatory | 29.87 | 758.7 | 30.11 | 764.7 | 64 0 | 17.8 | 51 | E | ..... | ..... | 1 | ..... | 7 | ..... | ESE | 0 | 0 | Very cloudy | National Observatory. |
| Privas | 29.01 | 736.8 | 30.07 | 763.8 | 58.1 | 14.5 | 44 | N | ..... | ..... | 1 | ..... | 2 | ..... | N | 0 | 0 | Slightly cl'dy | Normal School |
| Puy de Dome (Summit) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Alluard, Director. |
| Rochefort, Naval Obs'y | 30.04 | 762.9 | 30.07 | 763.7 | 61.7 | 16.5 | 40 | E | ..... | ..... | 3 | ..... | 10 | ..... | E | 0 | 0 | Covered | Lt. Decante, Director. |
| Rouen, Normal School | 30.03 | 762.7 | 30.11 | 764.8 | 68.7 | 20.4 | 44 | SSE | ..... | ..... | 2 | ..... | 5 | ..... | SE | 0 | 0 | Cloudy | F. Lucard, Director |
| Saint Malo (Port) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. H. Hercouet |
| Tarbes, Normal School | 28.95 | 735.4 | 29.99 | 761.7 | 75.2 | 24 | 53 | WSW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | T. Hugues, Director |
| Villefranche | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.77 | 756.1 | 29.80 | 756.8 | 80.6 | 27 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | L'Abbé Marchési |
| Lyons | ..... | ..... | 30.14 | 765.6 | 62.2 | 16.8 | 60 | ..... | ..... | ..... | ..... | ..... | 3 | ..... | ..... | 0 | 0 | Fair | M. Jeys. |
| Marseilles, Observatory | ..... | ..... | 30.01 | 762.2 | 70.2 | 21 2 | 41 | WSW | ..... | ..... | 1–2 | ..... | 3 | ..... | ..... | 0 | 0 | Partly cl'dy | The Staff. |
| Mont-Louis | 24.91 | 632 8 | 30.23 | 767.8 | 57.2 | 14.0 | 37 | SE | 9.3 | 4.17 | ..... | ..... | 3 | ..... | W | 0 | 0 | ..... | Mr. Falguère. |
| Nice | ..... | ..... | 30.06 | 763.5 | 62.8 | 17.1 | 90 | SW | ..... | ..... | 2 | ..... | 1? | ..... | ..... | 0 | 0 | Cloudy? | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.83 | 757.6 | 30.10 | 764.6 | 66.2 | 19.0 | 54 | SE | ..... | ..... | 2 | ..... | 7 | ..... | SE | Inap. | Inap. | ..... | Marié Davy, Director |
| Perpignan | ..... | ..... | 30.07 | 763.8 | 65.3 | 18.5 | 40 | S | 9.3 | 4.17 | ..... | ..... | 1 | ..... | NW | 0 | 0 | ..... | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.58 | 573.6 | ..... | ..... | 47.7 | 8.7 | ..... | W | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | Fair | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.95 | 760.6 | 30.11 | 764.8 | 64.4 | 18.0 | 54 | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered | E. Renou. |
| Toulouse, Observatory | 29.36 | 745.7 | 30.08 | 764.1 | 65.1 | 18.4 | 35 | NE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | The Staff. |
| Tours | 29.69 | 754.0 | 30.08 | 764.0 | 64.0 | 17.8 | 53 | E | ..... | ..... | 3 | ..... | 7 | ..... | SE | 0 | 0 | ..... | C. Marquet. |
| Versailles, (near Paris) | ..... | ..... | 30.12 | 765.1 | 65.5 | 18.6 | 49 | SE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | Light clouds | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 29.77 | 756.1 | 29.79 | 756.7 | 70.7 | 21.5 | 70 | WNW | 9.4 | 4.2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Marc Dechevrens, S. J |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010.4 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 185 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.19 | 741.5 | 30.04 | 762.9 | 60.4 | 15.8 | 64 | E | | | 4 | | 2 | E | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 29.98 | 761.4 | 30.15 | 765.7 | 61.9 | 16.6 | 42 | S | | | 1 | | 2 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.62 | 752.3 | 30.15 | 765.8 | 55.6 | 13.1 | 46 | NW | | | 1 | | 1 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.71 | 754.5 | 30.13 | 765.3 | 61.9 | 16.6 | 66 | E | | | 1 | | 1 | | | 0 | 0 | | Albert Senz. |
| Cassel | 29.61 | 752.0 | 30.22 | 767.5 | 61.5 | 16.4 | 43 | N | | | 2 | | 5 | NE | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 30.01 | 762.2 | 30.17 | 766.3 | 61.3 | 16.3 | 38 | NE | | | 2 | | 1 | | | 0 | 0 | | Director Lose. |
| Emden | 30.13 | 765.4 | 30.17 | 766.3 | 52.3 | 11.3 | 67 | NNW | | | 3 | | 1 | | | 0 | 0 | | Prof. Prestel. |
| Frankfort on the Main | 29.82 | 757.5 | 30.19 | 766.7 | 62.6 | 17 | 22 | NNE | | | 2 | | 2 | | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 28.68 | 728.4 | 30.10 | 764.5 | 60.1 | 15.6 | 65 | SW | | | 2 | | 4 | SW | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 30.10 | 764.6 | 30.17 | 766.4 | 55.4 | 13.0 | 64 | WNW | | | 2 | | 0 | | | 0 | 0 | Clear | Captain F. Hegemann. |
| Kiel | 30.10 | 764.6 | 30.12 | 765.0 | 54.7 | 12.6 | 58 | W | | | 3 | | 0 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.96 | 761.0 | 30.04 | 763.1 | 55.0 | 12.8 | 40 | N | | | 3 | | 2 | | | 0 | 0 | | Prof. E Luther. |
| Kösiin | | | 30.06 | 763.5 | 55.4 | 13.0 | | Calm | | | 0 | | 0 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.78 | 756.3 | 30.20 | 767.0 | 59.0 | 15 0 | 45 | NE | | | 1 | | 2 | N | | | | | Prof. Bruhns. |
| Memel, Naval School | 30.00 | 762.0 | 30.05 | 763.2 | 49.6 | 9.8 | 64 | WNW | | | 3 | | 8ks | | | 0 | 0 | Squally | Reinbrecht and Skalweit. |
| Neufahrwasser | 30.05 | 763.2 | 30.07 | 763.6 | 52.9 | 11.6 | 63 | NE | | | 1 | | 5 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.85 | 758.1 | 30.14 | 765.5 | 61.7 | 16.5 | 45 | NW | | | 5 | | 9 | | | 0 | 0 | | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.60 | 751.9 | 30.15 | 765.7 | 61.3 | 16.3 | 51 | NE | | | 3 | | 2 | NE | | 0.046 | 1.17 | | Dr. Schur. |
| Stuttgart | 29.17 | 741.0 | 30.11 | 764.7 | 61.7 | 16.5 | 41 | NE | | | 1 | | 4 | E | | 0 | 0 | | Prof. Schoder. |
| Treves, (Trier) | 29.52 | 749.7 | 30.04 | 763.0 | 62.8 | 17.1 | 35 | NW | | | 1 | | 2 | | | 0 | 0 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.63 | 727.3 | 30.11 | 764.7 | 58.5 | 14.7 | 49 | ENE | 2 | 1 | | | 6k | | N | 0 | 0 | | Dr. Von Bebber. |
| Wustrow, Naval School | 30.16 | 766.1 | 30.20 | 767.1 | 45.7 | 7.6 | 89 | W | | | 1 | | 4 | | | 0 | 0 | | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.40 | 746.7 | 29.79 | 756.6 | 63.7 | 17.6 | | N | | | 1.5 | | | | | | | Cloudy | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.75 | 755.6 | 29.80 | 756.8 | 85.4 | 29.7 | 59 | SW | 28? | 12.5? | | | 0 | | | 0 | 0 | Blue sky | |
| Deesa | 29.32 | 744.6 | 29.77 | 756.2 | 102.3 | 39.1 | 24 | W | | | | | 0 | | | 0 | 0 | Misty | |
| Bombay | 29.78 | 756.3 | 29.82 | 757.3 | 86.1 | 30.1 | 78 | W | 9 | 4.0 | | | 6 | SW | | 0 | 0 | D. clouds | |
| Poona | 27.79 | 705.8 | 29.76 | 755.9 | 85.6 | 29.8 | 53 | SW | | | | | 10 | | W | 0.03 | 0.8 | Dust-whirl. | |
| Lahore | 28.98 | 736.1 | 29.70 | 754.4 | 93.2 | 34.0 | 29 | W | 1.5 | 0.7 | | | 9 | | | 0 | 0 | Misty | |
| Belgaum | 27.29 | 693.2 | 29.80 | 757.0 | 81.1 | 27.3 | 69 | W | 14 | 6.3 | | | 9 | | NE | 0.92 | 23.4 | Thunder-storm | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.81 | 731.8 | 29.69 | 754.0 | 91.8 | 33.2 | 29 | NW | 2.4 | 1.1 | | | 7 | | | 0 | 0 | | |
| Agra | 29.19 | 741.4 | 29.74 | 755.3 | 99.1 | 37.3 | 22 | NW | | | | | 4 | NW | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.69 | 728.7 | 29.70 | 754.3 | 96.5 | 35.8 | 20 | Calm | 4.6 | 2.1 | | | 4 | NE | | 0 | 0 | D. clouds | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.36 | 745.7 | 29.72 | 754.9 | 95.1 | 35.1 | 29 | NE | 0.9 | 0.4 | | | 5 | SE | | 0 | 0 | D. clouds | |
| Allahabad | 29.42 | 747.2 | 29.72 | 754.8 | 95.6 | 35.3 | 27 | Calm | 1.3 | 0.6 | | | 8 | NW | | 0 | 0 | D. clouds | |
| Patna | 29.52 | 749.7 | 29.69 | 754.1 | 97.4 | 36.3 | 17 | W | 1.0 | 0.4 | | | 5 | W | W | 0 | 0 | D. clouds | |
| Hazaribagh | 27.72 | 704.0 | 29.68 | 753.8 | 89.8 | 32.1 | 31 | WSW | 6.9 | 3.1 | | | 7 | | NW | | | Raining | |
| Cuttack | 29.65 | 753.1 | 29.73 | 755.1 | 93.6 | 34.2 | 36 | S | 4.2 | 1.9 | | | 5 | | | 0 | 0 | D. clouds | |
| Calcutta (Alipore) | 29.72 | 754.8 | 29.74 | 755.4 | 87.8 | 31.0 | 56 | S | 8 | 3.6 | | | 0 | | | 0 | 0 | Blue sky | |
| Goalpara | 29.38 | 746.3 | 29.77 | 756.2 | 80.0 | 26.7 | 70 | ENE | 4.6 | 2.1 | | | 0 | | | 0 | 0 | Blue sky | |
| Chittagong | 29.76 | 756.0 | 29.85 | 758.3 | 83.9 | 28.8 | 79 | Calm | 8.1 | 3.6 | | | | | | 0 | 0 | | |
| Sibsagar | 29.49 | 749.1 | 29.83 | 757.6 | 78.9 | 26.1 | 65 | S | 3.1 | 1.4 | | | 10 | S | S | 0 | 0 | D. clouds | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.42 | 721.8 | 29.74 | 755.5 | 95 | 35.0 | 19 | NE | 2.4 | 1.1 | | | 3 | E | | 0 | 0 | D. clouds | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,982.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0 - 10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.58 | 751.4 | 29.99 | 761.7 | 60.3 | 15.7 | 66 | E | 2.5 | 1.1 | | | 10 | | | 0.020 | 0.5 | | Prof. Giovanni Codig. |
| Padua | 29.88 | 759.0 | 29.99 | 761.7 | 67.6 | 19.8 | 43 | SE | 4.3 | 1.9 | | | 5 | S | | 0 | 0 | | Prof. Dott. Lorenzioni |
| Vicenza | 29.80 | 757.0 | 29.99 | 761.7 | 66.7 | 19.3 | 45 | N | 4.3 | 1.9 | | | 5 | W | | 0 | 0 | | Conte Alm. Da Schio. |
| Bergamo | 28.70 | 729.0 | 30.00 | 762.0 | 68.4 | 20.2 | 51 | S | | | 2 | | 4 | | | 0.689 | 17.5 | | Prof. Trionfini Carlo. |
| Milan | 29.50 | 749.2 | 30.01 | 762.2 | 71.2 | 21.8 | | SE | | | 1 | | 3 | E | | 0 | 0 | | Prof. Schiaparelli. |
| Moncalieri | 29.11 | 739.5 | 30.01 | 762.3 | 68.0 | 20.0 | 40 | SSE | 1.3 | 0.6 | | | 3 | NE | | 0 | 0 | | Prof. P. F. Denza. |
| Mondovi | 28.13 | 714.4 | 30.02 | 762.6 | 64.6 | 18.1 | 35 | NNW | | | 2 | | 1 | | | 0 | 0 | | Prof. D. C. Bruno. |
| Porto Maurizio | 29.82 | 757.5 | 30.04 | 763.1 | 63.7 | 17.6 | 74 | E | | | 2 | | 4 | | | 0 | 0 | | Prof. L. Vassallo. |
| Genoa | 29.87 | 758.7 | 30.04 | 763.0 | 64 0 | 17.8 | 70 | SW | 4.3 | 1.9 | | | 2 | SE | | 0 | 0 | | Prof. G. M. Garibaldi. |
| Parma | 29.73 | 755.2 | 30.05 | 763.3 | 68.5 | 20.3 | 47 | SSW | | | 6 | | 3 | | | 0 | 0 | | Prof. P. Pigorini. |
| Florence | 29.74 | 755.5 | 30.00 | 761.9 | 68.9 | 20.5 | 35 | N | | | 2 | | 7 | | | 0.272 | 6.9 | | Cav. F Meucci. |
| Leghorn | 29.95 | 760.6 | 30.03 | 762.7 | 63.1 | 17.3 | 71 | NNW | 4.9 | 2.2 | | | 3 | | | 0 | 0 | | Prof. P. Monte. |
| Pesaro | 30.00 | 762.0 | 30.05 | 763.2 | 61.7 | 16.5 | 72 | NW | 6.3 | 2.8 | | | 1 | NW | | 0 | 0 | | Prof. Luigi Guidi. |
| Urbino | 28.52 | 724.3 | 30.06 | 763.4 | 58.6 | 14.8 | 63 | NE | | | 2 | | 4 | | | 0 | 0 | | Prof. P. Serpieri. |
| Grosseto | 28.32 | 719.4 | 30.01 | 762.2 | 65.8 | 18.8 | 71 | NNW | | | 2 | | 4 | | | 0.055 | 1.4 | | Avv. P. Ponticelli. |
| Rome | 29.82 | 757.5 | 30.00 | 761 9 | 68.5 | 20.3 | 52 | W | 6.3 | 2.8 | | | 2 | | | 0 | 0 | | Prof. P. G. S. Ferrar |
| Naples, O. U | 29.80 | 756.8 | 29.99 | 761.8 | 69.4 | 20.8 | 38 | WNW | | | 4 | | 3 | E | | 0.177 | 4.5 | | Prof. L. Palmieri. |
| Lecce | | | | | 64.6 | 18.1 | 68 | NE | 15.4 | 6.9 | | | 3 | N | | 0.244 | 6.2 | | Prof. C. De Giorgi. |
| Cagliari | 29.85 | 758.2 | 30.04 | 763.1 | 67.3 | 19.6 | 23 | NW | | | 4 | | 0 | | | 0 | 0 | | Prof. A. Pacinotti. |
| Cosenza | 29.08 | 738.7 | 29.96 | 760.9 | 66.9 | 19.4 | 77 | SW | 7.4 | 3.3 | | | 9 | | | 0.173 | 4.4 | | Prof. F. D. Conti. |
| Palermo | 29.72 | 754.9 | 29.97 | 761.3 | 63.9 | 17.7 | 61 | NW | 8.7 | 3.9 | | | 7 | W | | 0 | 0 | | Prof. G. Cacciatore. |
| Syracuse | 29.84 | 758.0 | 29.92 | 759.9 | 66.6 | 19.2 | 53 | E | | | 2 | | 3 | WSW | | 0 | 0 | | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.46 | 748.3 | 30.02 | 762.4 | 66.7 | 19.3 | 47 | WSW | 5.6 | 2.5 | | | 5 | W | | 0 | 0 | | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nagasaki | | | | | | | | | | | | | | | | | | | |
| Tokei (Yeddo) | 29.84 | 757.9 | 29.91 | 759.7 | 58.8 | 14.9 | 87 | SW | 3.5 | 1.6 | | | 3s | | | 0 | 0 | Fair | The Observatory. |
| Tokei (Yeddo) University | 29.80 | 756.9 | 29.99 | 759.5 | 59 | 15.0 | 88 | | | | | 6cs | | | | 0 | 0 | Fair | Prof. P. V. Veeder. |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | | | | | | | | | | | | | | | | | | | I. N. Marin, M. D. |
| Córdoba | | | | | | | | | | | | | | | | | | | C. Peña, M. D. |
| Cuernavaca | | | | | 66 9 | 19.4 | 32 | N | 0.9 | 0.4 | | 0 | 0 | | | 0 | 0 | Very hazy... | L. Castillo, A. E. |
| Guadalajara | 25.00 | 635.0 | 30.05 | 763.4 | 44.6 | 7.0 | 42 | SW | 0.9 | 0.4 | | 0 | 0 | | | 0 | 0 | Very hazy... | Prof. L. Perez. |
| Guanajuato | | | | | | | | | | | | | | | | | | | Prof. V. Fernandez |
| Leon | | | | | 59.9 | 15.5 | | NW | 1.8 | 0.8 | | 0 | 0 | | | 0 | 0 | Very hazy... | Prof. M. Leal. |
| Mexico | 23.04 | 585.2 | 29.99 | 761.9 | 58.5 | 14.7 | 41 | SW | 0 4 | 0.2 | | 0 | 0 | | | 0 | 0 | Very hazy... | Central Observatory. |
| Orizaba | | | | | | | | | | | | | | | | | | | N. N. |
| Orizaba | | | | | | | | | | | | | | | | | | | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | | | | | 54.0 | 12.2 | 23 | W | 0.9 | 0.4 | | 0 | 0 | | | 0 | 0 | Very clear... | M. V. de Leon, M. E. |
| Puebla | 23.31 | 592.0 | 30.01 | 762.3 | 52.5 | 11.4 | 67 | E | 3.6 | 1.6 | | 0 | 0 | | | 0 | 0 | Hazy | Prof. B. Gonzalez. |
| Toluca | | | | | | | | | | | | | | | | | | | Prof. C. Velazquez. |
| Tlacotalpam | 29.81 | 757.1 | 29.82 | 757.6 | 77.0 | 25 0 | 91 | Calm | 6 | 0 | | 0 | 10k | | | 0 | 0 | Threatening | Prof. F. R. Bayly. |
| San Luis Potosi | | | | | | | | | | | | | | | | | | | G. Barroeta, M. D. |
| Vera-Cruz | 29.78 | 756.5 | 29.81 | 757.2 | 79.7 | 26.5 | 88 | W | 0.4 | 0.2 | | 0 | 10sk | | SE | 0 | 0 | Very cloudy | Prof. J. Rossell. |
| Zacatecas | | | | | 55.4 | 13.0 | 45 | SW | 0.9 | 0.4 | | 0 | 0 | | | 0 | 0 | Clear | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.32 | 592.4 | 30.07 | 763.5 | 53.8 | 12.1 | 65 | ESE | 1.6 | 0.7 | | 0 | 0 | | | 0 | 0 | Hazy | P. Spina. [M.M. D. D |
| Morelia | 23.98 | 609.0 | | | 57.2 | 14.0 | 63 | Calm | 0 | 0 | | 0 | 1 | | | 0 | 0 | Hazy | M. Tena, F. L. Param. |
| Durango | | | | | | | | | | | | | | | | | | | M. V. de Leon, C. E. |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,821 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 30.22 | 767.6 | 30.22 | 767.6 | 55.8 | 13.2 | | NE | | | 3 | | | | | 0 | 0 | | |
| Groningen | 30.15 | 765.9 | 30.21 | 767.3 | 59.2 | 10.1 | | NW | | | 2 | | | | | 0 | 0 | | |
| Helder | 30.20 | 767.1 | 30.20 | 767.1 | 48.6 | 9.2 | | NW | | | 1 | | | | | 0 | 0 | | |
| Hellevoetsluis | 30.22 | 767 5 | 30.22 | 767.5 | 61.2 | 16.2 | 69 | NNE | | | 1 | | | | | | | | |
| Utrecht | 30.17 | 766.3 | 30.22 | 767.5 | 57.7 | 14.3 | 48 | N | | | 2 | | 2 | | | 0 | 0 | Light cloudy | H. v d Brink. |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Reduced to sea-level. Inches. | Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.08 | 763.9 | 30.13 | 765.3 | 49.6 | 9.8 | 57 | NNW | 11.9 | 5.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 30.00 | 762.0 | 30.04 | 763.0 | 41.0 | 5.0 | 69 | NW | 18 | 8 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.86 | 758.4 | 30.00 | 762.1 | 61.7 | 16.5 | 46 | SSW | 2 | 1 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 29.82 | 757.4 | 29.86 | 758.5 | 36.3 | 2.4 | 65 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0.315 | 8.0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.05 | 737.8 | 29.24 | 742.7 | 59.2 | 15.1 | 89 | SSW | 13.7 | 6.1 | ..... | ..... | 5 | ..... | ..... | 1.890 | 48.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.91 | 734.2 | 29.89 | 759.2 | 80.4 | 26.9 | 22 | SE | 7.4 | 3.3 | ..... | ..... | 9 | SE | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos |
| Funchal, (Madeira) | 29.79 | 756.7 | 29.88 | 758.9 | 69.8 | 21.0 | 74 | SW | 14.3 | 6.4 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.50 | 749.3 | 29.85 | 758.1 | 78.1 | 25.6 | 29 | ESE | 9.8 | 4.4 | ..... | ..... | 9 | WSW | ..... | 0 | 0 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 29.30 | 744.3 | 29.37 | 746.1 | 64.4 | 18.0 | 77 | SW | 32.9 | 14.7 | ..... | ..... | 3 | ..... | ..... | 0.472 | 12.0 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0-9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.96 | 761.0 | 29.97 | 761.2 | 83.3 | 28.5 | ..... | S | ..... | ..... | 5 | ..... | 1 | ..... | S | 1 | ..... | Blue sky | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Rio Douro, S. 25° 05′, E. 32° 37′ | ..... | ..... | 29.91 | 759.7 | 80.6 | 27.0 | ..... | E | ..... | ..... | 3 | ..... | 0 | ..... | ..... | 3 | ESE | Blue sky | J. T. d'Oliveria, Com'd't. |
| Sado, N. 14° 54′, W. 23° 19′ | 30.04* | 763.0* | 30.05* | 763.3* | 78.8 | 26.0 | ..... | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 2 | NE | Blue sky | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, S. 11° 54′ 8″, E. 13° 14′ 9″ | 29.74 | 755.5 | 29.75 | 755.7 | ..... | ..... | ..... | WSW | ..... | ..... | 2 | ..... | 5 | ..... | W | 2 | W | D. clouds | F. Texeira da Silva, Com'd't. |
| Tejo, N. 22° 10′ E. 113° 32′ | ..... | ..... | 29.94 | 760.5 | 79.9 | 26.6 | ..... | SE | ..... | ..... | 1 | ..... | 6n | ..... | SE | 0 | ..... | ..... | F. J. Ferreina, dos Amas, Com |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.62 | 752.3 | 30.04 | 763.0 | 55.0 | 12.8 | 41 | NNW | 13 | 6 | ..... | ..... | 7ks;ck | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.52 | 749.9 | 29.94 | 760.5 | 52.5 | 11.4 | 34 | NW | 9 | 4 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Light clouds | Astronomical Obs. |
| Dorpat | 29.53 | 750.0 | 29.77 | 756.2 | 49.5 | 9.7 | 49 | WNW | 13 | 6 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.61 | 752.2 | 29.63 | 752.6 | 38.1 | 3.4 | 88 | W | 20 | 9 | ..... | ..... | 8kn | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.27 | 743.4 | 29.60 | 751.8 | 33.4 | 0.8 | 100 | NW | 18 | 8 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Ch. Forsten. |
| Kieff | 29.12 | 739.6 | 29.75 | 755.6 | 55.2 | 12.9 | 60 | NNE | 7 | 3 | ..... | ..... | 7k;ks;n | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.05 | 753.1 | 29.72 | 754.9 | 57.6 | 14 2 | 65 | NNE | 13 | 6 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.65 | 753.0 | 29.67 | 753.5 | 57.2 | 14.0 | 90 | S | 9 | 4 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.28 | 743.7 | 29.83 | 757.7 | 50.0 | 10.0 | 41 | S | 9 | 4 | ..... | ..... | 4ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.39 | 746.5 | 29.60 | 751.7 | 50.2 | 10.1 | 89 | ENE | 13 | 6 | ..... | ..... | 10 | ..... | ..... | Blank | Blank | ..... | Meteorological Obs. |
| Archangel | 29.74 | 755.3 | 29.76 | 755.8 | 29.8 | — 1.2 | 76 | WNW | 2 | 1 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.44 | 722.4 | 29.81 | 757.1 | 70.3 | 21.3 | 53 | SSE | 4 | 2 | ..... | ..... | 4k | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 29.94 | 760.4 | 29.85 | 758.3 | 53.4 | 11.9 | 63 | SSE | 9 | 4 | ..... | ..... | 10s;n | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Krotkowo* | 29.32 | 744.7 | 29.80 | 756.9 | 43.2 | 6.2 | 87 | N | 2 | 1 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.50 | 749.4 | 29.78 | 756.4 | 39.9 | 4.4 | 84 | Calm | 0 | 0 | ..... | ..... | 9k | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.75 | 730.3 | 29.70 | 754.3 | 45.3 | 7.4 | 85 | SW | 9 | 4 | ..... | ..... | 9n;cs | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.71 | 754.7 | 29.94 | 760.5 | 71.1 | 21.7 | 36 | Calm | 0 | 0 | ..... | ..... | 1k;c | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.41 | 721.7 | 30.08 | 764.0 | 68.7 | 20.4 | 57 | Calm | 0 | 0 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.69 | 754.0 | 30.22 | 767.5 | 45.0 | 7.2 | 39 | Calm | 0 | 0 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | Light clouds | Meteorological Obs. |
| Yeniseisk | 29.91 | 759.8 | 30.25 | 768.4 | 32.7 | 0.4 | 57 | W | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 29.56 | 750.8 | 29.70 | 754.4 | 70.7 | 21.5 | 42 | S | 2 | 1 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.30 | 693.5 | 29.31 | 744.4 | 48.2 | 9.0 | 45 | Calm | 0 | 0 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.90 | 759.5 | 30.00 | 762.0 | 37.6 | 3.1 | 78 | S | 9 | 4 | ..... | ..... | 10ks | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 31.1 | — 0.5 | 68 | Calm | 0 | 0 | ..... | ..... | 10cs | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.95 | 760.7 | 30.05 | 763.3 | 66.6 | 19.2 | 64 | S | 4.6 | 2.06 | ..... | 1c | 0 | W | ..... | 0 | 0 | ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.88 | 759.0 | 29.94 | 760.4 | 84 0 | 28.9 | 44 | SE | 2.4 | 1.09 | ..... | 3 | ..... | W | ..... | 0 | 0 | Almost clear | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 27.11 | 688.6 | ..... | ..... | 75.2 | 24.0 | 62 | S | 2.7 | 1.19 | ..... | ..... | 9 | ..... | ..... | 0 | 0 | Almost cov.. | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.81 | 706.3 | 29.95 | 760.6 | 76.6 | 24.8 | 40 | SE | 3.0 | 1.33 | ..... | 0 | 9 | ..... | ..... | 0 | 0 | Almost cov.. | The Staff. |
| Murcia, Met. Obs'y | 29.90 | 759.5 | 30.05 | 763.2 | 82.2 | 27.9 | 44 | NE | 3.1 | 1.39 | ..... | 3 | 4 | W | ..... | 0 | 0 | Light clouds | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.92 | 734.6 | 29.78 | 756.3 | 76.8 | 24.9 | 50 | SSE | 11.5 | 5.14 | ..... | 8 | 0 | Calm | ..... | 0 | 0 | Cloudy | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.87 | 758.7 | 29.94 | 760.4 | 74.2 | 23.4 | 79 | Calm | 0 | 0 | ..... | 3cs | 5k | ..... | ..... | 0 | 0 | Fair | Benito Vines, S. J. |
| San Fernando, Naval Obs'y | 29.82 | 757.5 | 29.92 | 759.9 | 80.6 | 27.0 | 26 | E | 39.2 | 17.5 | ..... | 0 | 9 | ..... | SE | 0.018 | 0.4 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.86 | 758.4 | 29.95 | 760.7 | 81.0 | 27.2 | 74 | SE | 0 | 0 | ..... | 6cs | 2kn | SE | SE | 0 | 0 | Cloudy | Leonardo de Tejeda, Chief of Engineers. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.

Furnished by the cooperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATION. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-10. | Clouds. Amount. Up'er 0-10. | Clouds. Amount. Low'r 0-10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 29.79 | 756 6 | 29.88 | 767.6 | 37.4 | 3.0 | ..... | NNE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | 0.167 | 4.0 | ..... | |
| Umea | 29.80 | 757.0 | 29.85 | 758.3 | 47.1 | 8.4 | 95 | N | ..... | ..... | 7 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 29.85 | 758 2 | 29.90 | 759.5 | 49.6 | 9.8 | 32 | NNW | ..... | ..... | 7 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.76 | 755.8 | 29.93 | 760.3 | 55.6 | 13.1 | 28 | NW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.94 | 760.4 | 30.00 | 761.9 | 47.8 | 8.8 | 66 | NW | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.86 | 758.4 | 29.93 | 760.3 | 54.0 | 12.2 | 34 | NNW | 11.4 | 5.1 | ..... | ..... | 10 | ..... | NW | 0.001 | 0.02 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.67 | 728.3 | 30.10 | 764.4 | 55.2 | 12.9 | 62 | NNE | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0.020 | 0.5 | Clear | The Observatory. |
| Zurich | 28.48 | 723.5 | 30.10 | 764.6 | 59.7 | 15.4 | 66 | E | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | Bright | The Observatory. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +3.8 mm.; Thermometer, −0.9 cent.; Relative Humidity, +5 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.75 | 755.6 | 54.0 | 12.2 | 79 | NW | 13 | 6.0 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanidès. |
| Valona | ..... | ..... | 29.93 | 760.1 | 64.8 | 18.2 | ..... | NW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | 0.20 | 5. | Slightly cl'dy | A. Bertrand. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.56 | 750.8 | 29.67 | 753.7 | 75.9 | 24.4 | 71 | NE | ..... | ..... | 1 | ..... | 1c | ..... | ..... | 0 | 0 | Blue sky | Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, that the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.65 | 753.1 | 29.95 | 760.7 | 54 | 12.2 | ..... | Calm | 0 | 0 | ..... | ..... | 10s | ..... | NE | 0.18 | 4.6 | Cloudy | W. R. Rigg. |
| *Chatham, N B | 30.10 | 764.5 | 30.16 | 766.1 | 53 | 11.7 | 96 | S | 3 | 1.3 | ..... | ..... | 10s | ..... | SW | 0.04 | 1.0 | Cloudy | G. A. Blair. |
| Charlottetown, P. E. Island | 30.17 | 766.3 | 30.21 | 767.3 | 49 | 9.4 | 90 | S | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.72 | 754.9 | 29.91 | 759.7 | 55.6 | 13.1 | 96 | NE | ..... | ..... | 2 | ..... | 10s | ..... | ..... | 0.055 | 1.40 | Overcast | James Smith, M. A. |
| Dalhousie, N. B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Esquimault, B. C | 29.89 | 759.2 | 29.93 | 760.2 | 45.8 | 7.4 | 100 | Calm | 0 | 0 | ..... | 9cs | 0 | ..... | ..... | ..... | ..... | Drizzling | H. A. Johnson. |
| *Father Point, Quebec | 30.04 | 763.0 | 30.06 | 763.5 | 40 | 4.4 | 88 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | SW | 0.25 | 6.3 | Cloudy | W. H. Bevis. |
| Fredericton, N. B | 30.13 | 765.3 | 30.20 | 767.1 | 52.0 | 11.1 | 92 | SE | 5 | 2.2 | ..... | ..... | 10s | ..... | ..... | 0.13 | 3.3 | Cloudy | J. McWilliams. |
| *Fort Garry Manitoba | 29.11 | 739.4 | 29.93 | 760.2 | 50 | 10.0 | 89 | SE | 12 | 5.4 | ..... | 2c | 2ks | W | W | 0 | 0 | Misty | Prof. Harrison. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | James Stewart. |
| Granton, Ontario | 28.79 | 731 3 | 29.88 | 758.9 | 53 | 11.7 | 86 | NE | ..... | ..... | 1 | 1ks | 0 | W | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| *Halifax, N. S | 30.08 | 764.0 | 30.22 | 767.6 | 42 | 5.6 | 100 | SE | 4 | 1.8 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Clear | James Grant. |
| Hamilton, Ontario | 29.54 | 750.3 | 29.91 | 759.7 | 52.7 | 11.5 | 85 | E | ..... | ..... | 1 | 10cs | ..... | ..... | ..... | 0.027 | 0.69 | Foggy | F. Allison, M. A. |
| Heart's Content, N. F | 30.24 | 768.1 | 30.27 | 768.8 | 44 | 6.7 | 76 | W | ..... | ..... | ..... | 0? | 0? | ..... | ..... | 0 | 0 | Cloudy | Geo. Dickson, M. A. |
| *Kingston, Ontario | 29.58 | 751.3 | 29.91 | 759.7 | 59 | 15.0 | 80 | NE | 6 | 2.7 | ..... | 10ck | 0 | Calm | ..... | 0 | 0 | Cloudy? | E. Weedon. |
| Little Glace Bay, N. S | 30.20 | 767.1 | 30.24 | 768.1 | 48 | 8.9 | ..... | W | 5 | 2.2 | ..... | 4k | 0 | W | ..... | 0.10 | 2.5 | Cloudy | S. Woods, M. A. |
| *Montreal, Quebec | 29.67 | 763.6 | 29.87 | 758.7 | 57 | 13.9 | 97 | NE | 5 | 2.2 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Fair | C. H. Rigby. |
| *Parry Sound, Ontario | 29.29 | 744.0 | 29.98 | 761.5 | 51 | 10.6 | 93 | N | 8 | 3.6 | ..... | 5k | 5ks | NE | NE | 0.03 | 0.8 | Cloudy | C. H. McLeod, C. E. |
| Peterboro, Ontario | 29.10 | 741.4 | 29.92 | 760.0 | 61.7 | 16.5 | 71 | E | ..... | ..... | ..... | ..... | 9ks | ..... | ..... | 0 | 0 | Cloudy | Rev. R. Mosley. |
| Port Dover, Ontario | 29.29 | 741.7 | 29.89 | 759.2 | 51 | 10.6 | 93 | NE | 14 | 6.3 | ..... | 10ck | 0 | SE | ..... | 0 | 0 | Cloudy | J. F. Jeffers, B. A. |
| Port Hastings, N. S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | H. Morgan. |
| Port Stanley, Ontario | 29.23 | 742.4 | 29.87 | 758.7 | 55 | 12.8 | 86 | NE | 4 | 1.8 | ..... | ..... | 10ks | ..... | E | Inap. | Inap. | Cloudy | Peter Grant. |
| *Quebec, Quebec | 29.72 | 751.9 | 30.06 | 763.3 | 43 | 6.1 | 92 | NE | ..... | ..... | 1 | ..... | 10n | ..... | NE | 0.07 | 1.8 | Cloudy | M. Payne. |
| *Rockliffe, Ontario | 29.56 | 750.8 | 30.01 | 762.2 | 58 | 14.4 | 78 | N | 3 | 1.3 | ..... | ..... | 5s | ..... | N | Inap. | Inap. | Fair | Capt. Ashe, R. N. |
| St. Andrews, N. B | 30.10 | 764.5 | 30.15 | 765.8 | 49 | 9.4 | 96 | SE | 3 | 1.3 | ..... | ..... | 10n | ..... | ..... | 0.06 | 1.5 | Cloudy | W. H. McIntyre. |
| St. John, N. B | 30.02 | 762.5 | 30.19 | 766.8 | 51 | 10.6 | 89 | Calm | 0 | 0 | ..... | ..... | 10k | ..... | ..... | 0 | 0 | Cloudy | Dr. Gove. |
| *Saugeen, Ontario | 29.24 | 742.7 | 29.95 | 760.7 | 50 | 10.0 | 94 | N | 4 | 1.8 | ..... | ..... | 10ks | ..... | E | 0.11 | 2.8 | Cloudy | G. Murdock, C. E. |
| Stayner, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | K. Stewart. |
| Stratford, Ontario | 28.61 | 726.7 | 29.87 | 758.7 | 53.9 | 12.2 | 86 | E | 10 | 4.5 | ..... | 2cks | 5s | ..... | ..... | 0.127 | 3.23 | Fair | R. J. Cole. |
| *Sydney, C. B | 30.23 | 767.8 | 30.26 | 768.6 | 54 | 12.2 | 76 | W | 8 | 3.6 | ..... | 5ck | 0 | SW | ..... | 0 | 0 | Fair | C. J. MacGregor, M. A. |
| *Toronto, Ontario | 29.53 | 750.0 | 29.91 | 759.7 | 56 | 13.3 | 83 | NE | 5 | 2.2 | ..... | ..... | 10ks | ..... | E | 0 | 0 | Cloudy | T. C. Hill. |
| Windsor, N. S | 30.11 | 764.8 | 30.20 | 767.1 | 55.0 | 12.8 | 97 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Fair | Magnetic Observatory. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | J. Montgomery. |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 38.0 | 3.3 | 81 | NE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Fair | John Delany. |
| | | | | | | | | | | | | | | | | | | | |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.64 | 752.8 | 29.87 | 758.7 | 57 | 13.9 | 94 | N | 5 | 2.2 | ..... | ..... | 10n | ..... | Calm | 0.11 | 2.8 | Light rain... | |
| Alpena, Michigan | 29.35 | 745.5 | 29.99 | 761.7 | 51 | 10.6 | 72 | N | 12 | 5.4 | ..... | 2c | 2s | NE | N | 0 | 0 | Fair... | |
| Atlantic City, New Jersey | 29.77 | 756.1 | 29.79 | 756.7 | 55 | 12.8 | 100 | E | 10 | 4.5 | ..... | ..... | Fog | ..... | Calm | 0.03 | 0.8 | Light rain... | |
| Augusta, Georgia | 29.70 | 754.4 | 29.88 | 758.9 | 65 | 18.3 | 44 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Baltimore, Maryland | 29.76 | 755.9 | 29.80 | 756.9 | 60 | 15.6 | 88 | N | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 1.48 | 37.6 | Cloudy | |
| Barnegat, New Jersey | 29.80 | 756.9 | 29.82 | 757.4 | 54 | 12.2 | 100 | E | 10 | 4.5 | ..... | ..... | Fog | ..... | Calm | 0.02 | 0.5 | Foggy | |
| Bismarck, Dakota | 28.04 | 712.2 | 29.90 | 759.4 | 51 | 10.6 | 79 | W | 20 | 8.9 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Boise City, Idaho | 27.26 | 692.4 | 30.14 | 765.5 | 43 | 6.1 | 91 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | Calm | 0.10 | 2.5 | Fair | |
| Boston, Massachusetts | 29.80 | 756.9 | 29.96 | 761.0 | 48 | 8.9 | 100 | NE | 14 | 6.3 | ..... | ..... | Fog | ..... | NE | 0.85 | 21.6 | Dense fog... | |
| Brackettville, Texas | 28.58 | 725.9 | 29.56 | 750.8 | 58 | 14.4 | 94 | N | ..... | ..... | 6 | 5k | 5n | NW | NW | 1.20 | 30.5 | Light rain... | |
| Breckenridge, Minnesota | 28.97 | 735.8 | 29.97 | 761.2 | 49 | 9.4 | 85 | SE | 15 | 6.7 | ..... | 5es | 0 | Calm | ..... | 0 | 0 | Fair | |
| Brownsville, Texas | 29.70 | 754.4 | 29.77 | 756.1 | 76 | 24.4 | 72 | SE | 12 | 5.4 | ..... | ..... | 10s | ..... | SE | 0 | 0 | Cloudy | |
| Buffalo, New York | 29.17 | 740.9 | 29.86 | 758.4 | 53 | 11.7 | 100 | NE | 5 | 2.2 | ..... | ..... | 10n | ..... | NE | 0.37 | 9.4 | Light rain... | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 67 | 19.4 | 50 | NE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.68 | 753.9 | 29.94 | 760.5 | 60 | 15.6 | 82 | E | 5 | 2.2 | ..... | ..... | 10n | ..... | S | 0.02 | 0.5 | Light rain... | |
| Cairo, Illinois | 29.63 | 752.6 | 30.02 | 762.5 | 53 | 11.7 | 80 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | NW | 0 | 0 | Cloudy | |
| Camp Grant, Arizona | 25.16 | 639.0 | 29.96 | 761.0 | 51 | 10.6 | 40 | N | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | 26.82 | 681.2 | 30.31 | 769.9 | 46 | 7.8 | 69 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.44 | 697.0 | 30.01 | 762.2 | 40 | 4.4 | 83 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | |
| Cape Hatteras, N. Carolina | 29.79 | 756.7 | 29.79 | 756.7 | 69 | 20.6 | 85 | S | 11 | 4.9 | ..... | 2k | 0 | SW | ..... | 0 | 0 | Fair | |
| Cape Henry, Virginia | 29.76 | 755.9 | 29.78 | 756.4 | 63 | 17.2 | 89 | SE | 8 | 3.6 | ..... | 5k | 0 | S | ..... | 1.14 | 29.0 | Fair | |
| Cape Lookout, N. Carolina | 29.77 | 756.1 | 29.79 | 756.7 | 67 | 19.4 | 89 | N | 5 | 2.2 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair | |
| Cape May, New Jersey | 29.77 | 756.1 | 29.80 | 756.9 | 57 | 13.9 | 100 | NE | 4 | 1.8 | ..... | ..... | Fog | ..... | ..... | 0.02 | 0.5 | Foggy | |
| Charleston, South Carolina | 29.83 | 757.7 | 29.90 | 759.4 | 64 | 17.8 | 48 | NW | 6 | 2.7 | ..... | 1c | 0 | W | ..... | 0 | 0 | Clear | |
| Cheyenne, Wyoming | 24.06 | 611.1 | 30.00 | 762.0 | 36 | 2.2 | 80 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0.04 | 1.0 | Clear | |
| Chicago, Illinois | 29.29 | 744.0 | 29.98 | 761.5 | 45 | 7.2 | 84 | NE | 9 | 4.0 | ..... | 5k | 5s | NE | NE | 0.03 | 0.8 | Cloudy | |
| Cincinnati, Ohio | 29.22 | 742.2 | 29.86 | 758.4 | 53 | 11.7 | 83 | NW | 6 | 2.7 | ..... | ..... | 10ks | ..... | NW | 0 | 0 | Cloudy | |
| Cleveland, Ohio | 29.14 | 740.1 | 29.86 | 758.4 | 50 | 10.0 | 86 | N | 4 | 1.8 | ..... | ..... | 10n | ..... | N | 0.64 | 16.3 | Light rain... | |
| Concho, Texas | 27.91 | 708.9 | 29.56 | 750.8 | 58 | 14.4 | 87 | W | ..... | ..... | 2 | 8k | 0 | W | ..... | 0.60 | 15.2 | Cloudy | |
| Corsicana, Texas | 29.42 | 747.3 | 29.88 | 758.9 | 60 | 15.6 | 82 | S | 2 | 0.9 | ..... | 5es | 0 | W | ..... | 0 | 0 | Fair | |
| Davenport, Iowa | 29.41 | 747.0 | 30.05 | 763.3 | 52 | 11.1 | 79 | NE | 6 | 2.7 | ..... | 8k | 0 | NE | ..... | 0 | 0 | Cloudy | |
| Deadwood, Dakota | 25.41 | 645.4 | ..... | ..... | 38 | 3.3 | 91 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0.45 | 11.4 | Clear | |
| Denison, Texas | 29.12 | 739.6 | 29.90 | 759.4 | 64 | 17.8 | 78 | NE | 3 | 1.3 | ..... | 10cs | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Denver, Colorado | 24.82 | 630.4 | 30.04 | 763.0 | 47 | 8.3 | 77 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Detroit, Michigan | 29.29 | 741.7 | 29.86 | 758.4 | 52 | 11.1 | 86 | NE | 10 | 4.5 | ..... | 5ck | 2s | NE | NE | 0.14 | 3.6 | Fair | |
| Dodge City, Kansas | 27.34 | 694.4 | 29.61 | 752.1 | 50 | 10.0 | 86 | SE | 16 | 7.2 | ..... | ..... | 8s | ..... | S | 0.34 | 8.6 | Cloudy | |
| Dubuque, Iowa | 29.34 | 745.2 | 30.04 | 763.0 | 51 | 10.6 | 72 | NE | 1 | 0.4 | ..... | 0 | Fog | ..... | NW | 0 | 0 | Foggy | |
| Duluth, Minnesota | 29.41 | 747.8 | 30.13 | 765.3 | 44 | 6.7 | 84 | NE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eagle Pass, Texas | 29.08 | 738.6 | 29.81 | 757.2 | 56 | 13.3 | 100 | S | 12 | 5.4 | ..... | ..... | 10n | ..... | Calm | 0.20 | 5.1 | Heavy rain | |
| Eastport, Maine | 30.08 | 764.0 | 30.15 | 765.8 | 44 | 6.7 | 100 | NE | 11 | 4.9 | ..... | ..... | Fog | ..... | Calm | 0.09 | 2.3 | Foggy | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 67 | 19.4 | 34 | W | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.12 | 739.6 | 29.82 | 757.4 | 56 | 13.3 | 87 | Calm | 0 | 0 | ..... | 8k | 2s | SE | ..... | 0.16 | 4.1 | Cloudy... | |
| Escanaba, Michigan | 29.44 | 747.8 | 30.10 | 764.5 | 43 | 6.1 | 75 | N | 14 | 6.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Florence, Arizona | 28.27 | 718.0 | 29.87 | 758.7 | 55 | 12.8 | 56 | NW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Craig, New Mexico | 25.45 | 646.4 | 29.51 | 749.5 | 47 | 8.3 | 34 | E | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.04 | 636.0 | 30.00 | 762.0 | 65 | 18.3 | 23 | W | 4 | 1.8 | ..... | 5k | 0 | ..... | ..... | 0 | 0 | Fair | |
| Fort Gibson, Indian Ter | 29.42 | 747.3 | 29.95 | 760.7 | 56 | 13.3 | 69 | E | 10 | 4.5 | ..... | 8es | 0 | W | ..... | 0 | 0 | Fair | |
| Fort Griffin, Texas | 28.58 | 725.9 | 29.81 | 757.2 | 65 | 18.3 | 78 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | S | Inap. | Inap. | Cloudy | |
| Fort St. Michael, Alaska | 29.66 | 753.4 | 29.70 | 754.4 | 17 | — 8.3 | 100 | SW | 13 | 5.8 | ..... | ..... | 10s | ..... | SW | 0.07 | 1.8 | Cloudy | |
| Fort Sill, Indian Territory | 28.67 | 728.2 | 29.75 | 755.6 | 61 | 16.1 | 82 | Calm | 0 | 0 | ..... | 0 | 8ks | ..... | W | 0.02 | 0.5 | Threatening | |
| Galveston, Texas | 29.83 | 757.7 | 29.88 | 758.9 | 72 | 22.2 | 80 | S | 9 | 4.0 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.32 | 744.7 | 29.97 | 761.2 | 50 | 10.0 | 93 | NE | 6 | 2.7 | ..... | ..... | 10ks | ..... | NE | 0.12 | 3.0 | Cloudy | |
| Indianapolis, Indiana | 29.13 | 739.9 | 29.91 | 759.7 | 49 | 9.4 | 93 | NW | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0.05 | 1.3 | Threatening | |
| Indianola, Texas | 29.79 | 756.7 | 29.82 | 757.4 | 75 | 23.9 | 77 | SE | 16 | 7.2 | ..... | Haze | Haze | Calm | Calm | 0 | 0 | Hazy | |
| Jacksboro, Texas | 28.71 | 729.2 | 29.86 | 758.4 | 64 | 17.8 | 78 | S | 8 | 3.6 | ..... | 4ck | 1s | N | S | 0 | 0 | Cloudy | |
| Jacksonville, Florida | 29.90 | 759.4 | 29.93 | 760.2 | 69 | 20.6 | 43 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Keokuk, Iowa | 29.39 | 746.5 | 30.09 | 762.0 | 56 | 13.3 | 63 | N | 3 | 1.3 | ..... | 0 | 1s | Calm | 0 | 0 | Fair | | |
| Key West, Florida | 29.90 | 759.4 | 29.93 | 760.2 | 77 | 25.0 | 65 | NE | 7 | 3.1 | ..... | 5k | 0 | NE | ..... | 0 | 0 | Fair | |
| Kittyhawk, North Carolina | 29.77 | 756.1 | 29.79 | 756.7 | 61 | 16.1 | 94 | E | 6 | 2.7 | ..... | 5k | 0 | S | ..... | 0 | 0 | Fair | |
| Knoxville, Tennessee | 28.94 | 735.1 | 29.94 | 760.5 | 49 | 9.4 | 78 | W | 2 | 0.9 | ..... | 6ck | 0 | NE | ..... | Inap. | Inap. | Fair | |
| La Crosse, Wisconsin | 29.32 | 744.7 | 30.06 | 763.5 | 49 | 9.4 | 78 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 25.96 | 659.4 | 30.11 | 764.8 | 46 | 7.8 | 54 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.30 | 744.2 | 29.63 | 752.6 | 70 | 21.1 | 95 | SE | 6 | 2.7 | ..... | 10k | 0 | S | ..... | 0.03 | 0.8 | Cloudy | |
| Leavenworth, Kansas | 29.21 | 741.9 | 30.06 | 763.5 | 49 | 9.4 | 78 | Calm | 0 | 0 | ..... | 0 | Sm'e | ..... | ..... | 0 | 0 | Clear | |
| Los Angeles, California | 29.65 | 753.1 | 29.99 | 761.7 | 49 | 9.4 | 71 | E | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Louisville, Kentucky | 29.35 | 745.5 | 29.90 | 759.4 | 51 | 10.6 | 79 | SW | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Lynchburg, Virginia | 29.10 | 739.1 | 29.76 | 755.9 | 60 | 15.6 | 70 | NW | 4 | 1.8 | ..... | 0 | 5ks | ..... | Calm | 0.20 | 5.1 | Fair | |
| Marquette, Michigan | 29.40 | 746.7 | 30.11 | 764.8 | 46 | 7.8 | 77 | NW | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mason, Texas | 28.22 | 716.8 | 29.92 | 760.0 | 67 | 19.4 | 94 | E | 4 | 1.8 | ..... | ..... | 10ks | ..... | SE | 0 | 0 | Cloudy | |
| Memphis, Tennessee | 29.71 | 754.6 | 30.03 | 762.7 | 56 | 13.3 | 68 | NE | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.30 | 744.2 | 30.03 | 762.7 | 47 | 8.3 | 85 | N | 16 | 7.2 | ..... | 5c | 0 | ..... | ..... | 0.01 | 0.3 | Fair | |
| Mobile, Alabama | 29.91 | 759.7 | 29.95 | 760.7 | 63 | 17.2 | 89 | N | 6 | 2.7 | ..... | 2ck | 2ks | NW | NW | 0.28 | 7.1 | Fair | |
| Montgomery, Alabama | 29.72 | 754.9 | 29.96 | 761.0 | 59 | 15.0 | 64 | NE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Morgantown, West Virginia | 28.78 | 731.0 | 29.80 | 756.9 | 56 | 13.3 | 75 | W | 2 | 0.9 | ..... | ..... | 10s | ..... | W | 0.02 | 0.5 | Cloudy | |
| Mt. Washington, N. H. | 23.82 | 605.0 | 30.18 | 766.6 | 40 | 4.4 | 100 | SE | 48 | 21.5 | ..... | ..... | 10n | ..... | SE | 2.70 | 68.6 | Light rain | |
| Nashville, Tennessee | 29.43 | 747.5 | 29.97 | 761.2 | 50 | 10.0 | 86 | W | 2 | 0.9 | ..... | 0 | 5s | ..... | NW | 0 | 0 | Fair | |
| New Haven, Connecticut | 29.76 | 755.9 | 29.87 | 758.7 | 57 | 13.9 | 97 | NE | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0.27 | 6.9 | Foggy | |
| New London, Connecticut | 29.84 | 757.9 | 29.89 | 759.2 | 55 | 12.8 | 100 | NE | 4 | 1.8 | ..... | ..... | 10n;fg | ..... | NE;Calm | 0.19 | 4.8 | Light rain | |
| New Orleans, Louisiana | 29.86 | 758.4 | 29.92 | 760.0 | 72 | 22.2 | 76 | S | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Newport, Rhode Island | 29.86 | 758.4 | 29.90 | 759.4 | 52 | 11.1 | 100 | E | 9 | 4.0 | ..... | ..... | 10n | ..... | ..... | 1.77 | 45.0 | Light rain | |
| New York, New York | 29.68 | 753.9 | 29.86 | 758.4 | 54 | 12.2 | 100 | NE | 16 | 7.2 | ..... | ..... | Fog | ..... | Calm | 0.46 | 11.7 | Foggy | |
| Norfolk, Virginia | 29.72 | 754.9 | 29.78 | 756.4 | 65 | 18.3 | 78 | SE | 6 | 2.7 | ..... | 2k | 0 | SE | ..... | 0.07 | 1.8 | Fair | |
| North Platte, Nebraska | 27.10 | 688.3 | 29.64 | 752.8 | 52 | 11.1 | 73 | SE | 2 | 0.9 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Olympia, Washington Ter. | 29.96 | 761.0 | 30.00 | 762.0 | 41 | 5.0 | 91 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.25 | 6.3 | Cloudy | |
| Omaha, Nebraska | 28.95 | 735.3 | 30.03 | 762.7 | 50 | 10.0 | 79 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Oswego, New York | 29.58 | 751.3 | 29.90 | 759.4 | 55 | 12.8 | 87 | E | 4 | 1.8 | ..... | ..... | 10n | ..... | E | 0.27 | 6.9 | Light rain | |
| Pembina, Dakota | 29.08 | 738.6 | 29.90 | 759.4 | 49 | 9.4 | 78 | SE | 12 | 5.4 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Philadelphia, Pennsylvania | 29.77 | 756.1 | 29.82 | 757.4 | 56 | 13.3 | 100 | NE | 12 | 5.4 | ..... | ..... | Fog | ..... | Calm | 0.37 | 9.4 | Foggy | |
| Phœnix, Arizona | 28.66 | 728.0 | 30.68 | 779.3 | 54 | 12.2 | 67 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.66 | 448.6 | 29.98 | 761.5 | 14 | —10.0 | 46 | SW | 10 | 4.5 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pioche, Nevada | 24.11 | 612.4 | 29.88 | 758.9 | 43 | 6.1 | 43 | W | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.01 | 736.8 | 29.80 | 756.9 | 53 | 11.7 | 93 | S | 1 | 0.4 | ..... | ..... | 10s;fg | ..... | Calm | 0.06 | 1.5 | Cloudy | |
| Port Huron, Michigan | 29.21 | 741.9 | 29.87 | 758.7 | 47 | 8.3 | 92 | N | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0.08 | 2.0 | Cloudy | |
| Portland, Maine | 29.99 | 761.7 | 30.04 | 763.0 | 49 | 9.4 | 100 | E | 8 | 3.6 | ..... | ..... | Fog | ..... | ..... | 1.13 | 28.7 | Dense fog | |
| Portland, Oregon | 30.02 | 762.5 | 30.12 | 765.0 | 50 | 10.0 | 78 | SE | 6 | 2.7 | ..... | ..... | 10ks | ..... | SW | 0.46 | 11.7 | Threatening | |
| Prescott, Arizona | 24.78 | 629.4 | 30.14 | 765.5 | 39 | 3.9 | 64 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Punta Rassa, Florida | 29.94 | 760.5 | 29.96 | 761.0 | 72 | 22.2 | 67 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |

## UNITED STATES SERIES.—Continued.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Red Bluff, California | 29.80 | 756.9 | 30.17 | 766.3 | 52 | 11.1 | 93 | E | 2 | 0.9 | ..... | 1c | 0 | Calm | ..... | 0.04 | 1.0 | Clear | |
| Rochester, New York | 29.26 | 743.2 | 29.86 | 758.4 | 54 | 12.2 | 74 | NE | 4 | 1.8 | ..... | 5k | Fog | SE | Calm | 0.03 | 0.8 | Fair | |
| Roseburg, Oregon | 29.56 | 750.8 | 30.13 | 765.3 | 50.5 | 10.3 | 96 | SW | 1 | 0.4 | ..... | 8k | 0 | SW | ..... | 0.04 | 1.0 | Cloudy | |
| Sacramento, California | 30.08 | 764.0 | 30.16 | 766.1 | 53 | 11.7 | 93 | SE | 4 | 1.8 | ..... | 8k | 0 | S | ..... | 0 | 0 | Cloudy | |
| St. Louis, Missouri | 29.43 | 747.5 | 30.00 | 762.0 | 53 | 11.7 | 73 | N | 6 | 2.7 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| St. Marks, Florida | 29.91 | 759.7 | 29.93 | 760.2 | 65 | 18.3 | 53 | NE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul, Minnesota | 29.20 | 741.7 | 30.03 | 762.7 | 49 | 9.4 | 71 | NE | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Salt Lake City, Utah | 25.72 | 653.3 | 30.05 | 763.3 | 41 | 5.0 | 65 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| San Antonio, Texas | 29.12 | 739.6 | 29.68 | 753.9 | 68 | 20.0 | 90 | E | 4 | 1.8 | ..... | ..... | 10ks | ..... | S | 0 | 0 | Cloudy | |
| San Diego, California | 29.94 | 760.5 | 30.02 | 762.5 | 52 | 11.1 | 86 | NE | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sandusky, Ohio | 29.21 | 741.9 | 29.87 | 758.7 | 53 | 11.7 | 92 | NE | 10 | 4.5 | ..... | ..... | 10s | ..... | Calm | 0.12 | 3.0 | Cloudy | |
| Sandy Hook, New Jersey | 29.82 | 757.4 | 29.85 | 758.2 | 53 | 11.7 | 100 | E | 16 | 7.2 | ..... | ..... | Fog | ..... | E | 0.19 | 4.8 | Foggy | |
| San Francisco, California | 30.13 | 765.3 | 30.20 | 767.1 | 57 | 13.9 | 94 | W | 5 | 2.2 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| Santa Fé, New Mexico | 23.24 | 590.3 | 29.78 | 756.4 | 45 | 7.2 | 34 | SW | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Savannah, Georgia | 29.81 | 757.2 | 29.90 | 759.4 | 65 | 18.3 | 49 | NW | 3 | 1.3 | ..... | 2c | 0 | NW | ..... | 0 | 0 | Clear | |
| Shreveport, Louisiana | 29.74 | 755.4 | 29.95 | 760.7 | 67 | 19.4 | 74 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 29.80 | 756.9 | 29.84 | 757.9 | 65 | 18.3 | 63 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Springfield, Massachusetts | 29.71 | 754.6 | 29.84 | 757.9 | 56 | 13.3 | 87 | NE | 5 | 2.2 | ..... | ..... | 10n | ..... | NE | 0.59 | 15.0 | Light rain | |
| Stockton, Texas | 26.81 | 681.0 | 29.81 | 757.2 | 55 | 12.8 | 68 | NE | 14 | 6.3 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Thatcher's Island, Mass | 29.93 | 760.2 | 29.99 | 761.7 | 50 | 10.0 | 93 | SE | 8 | 3.6 | ..... | ..... | Fog | ..... | SE | 0.56 | 14.2 | Dense fog | |
| Toledo, Ohio, | 29.18 | 741.2 | 29.84 | 757.9 | 53 | 11.7 | 93 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | Calm | 0.04 | 1.0 | Light rain | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 50 | 10.0 | 64 | SE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tybee Island, Georgia | 29.88 | 758.9 | 29.91 | 759.7 | 65 | 18.3 | 49 | NW | 10 | 4.5 | ..... | 2cs | Haze | Calm | Calm | 0 | 0 | Fair | |
| Umatilla, Oregon | 29.72 | 754.9 | ..... | ..... | 52 | 11.1 | 79 | Calm | 0 | 0 | ..... | 0 | 5s | ..... | W | Inap. | Inap. | Fair | |
| Vicksburg, Mississippi | 29.71 | 754.6 | 29.96 | 761.0 | 60 | 15.6 | 82 | E | 10 | 4.5 | ..... | 2c | 0 | Calm | ..... | 0.26 | 6.6 | Clear | |
| Virginia City, Montana | 24.27 | 616.4 | 29.75 | 755.6 | 40 | 4.4 | 56 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.86 | 21.8 | Clear | |
| Visalia, California | 29.82 | 757.4 | 30.19 | 766.8 | 51 | 10.6 | 93 | Calm | ..... | ..... | ..... | 0 | 1s | ..... | NW | 0 | 0 | Clear | |
| Washington, D. C | 29.71 | 754.6 | 29.82 | 757.4 | 60 | 15.6 | 88 | NE | 6 | 2.7 | ..... | ..... | 10ks | ..... | NE | 0.30 | 7.6 | Cloudy | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 53 | 11.7 | 61 | S | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Wilmington, N. Carolina | 29.72 | 754.9 | 29.80 | 756.9 | 63 | 17.2 | 72 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Winnemucca, Nevada | 25.74 | 653.8 | 30.10 | 764.5 | 42 | 5.6 | 66 | S | 8 | 3.6 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Wood's Holl, Mass | 29.88 | 758.9 | 29.93 | 760.2 | 53 | 11.7 | 93 | SE | 16 | 7.2 | ..... | ..... | 10s;fg | ..... | ..... | 0.85 | 21.6 | Foggy | |
| Yankton, Dakota | 28.77 | 730.7 | 30.06 | 763.5 | 50 | 10.0 | 72 | N | 1 | 0.4 | ..... | 5c | 0 | ..... | ..... | 0 | 0 | Fair | |
| Yuma, Arizona | 29.76 | 755.9 | 29.92 | 760.0 | 60 | 15.6 | 59 | SW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| York Factory, B. A | 30.17 | 766.3 | 30.22 | 767.6 | 24.0 | — 4.4 | 94 | NW | 14 | 6.3 | ..... | 2k | Fog | NE | ..... | Inap. | Inap. | Foggy | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I | 29.88 | 758.9 | 29.90 | 759.4 | 77 | 25.0 | 69 | Calm | 0 | 0 | ..... | 8ck | 4n | Calm | SE | 0 | 0 | Cloudy | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | 30.12 | 765.0 | 30.13 | 765.3 | 82 | 27.8 | 83 | Calm | 0 | 0 | ..... | 8c | 2s | Calm | E | 0 | 0 | ..... | James Gall. |
| Navassa, W. I | 29.85 | 758.2 | 29.93 | 760.2 | 80 | 26.7 | ..... | SW | 1 | 0.4 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Fair | F. M. Everett. |
| Paramaribo, D. Guiana, S. A. | 29.93 | 760.2 | 29.94 | 760.5 | 81 | 27.2 | 91 | E | ..... | ..... | 2 | ..... | 8ks | ..... | ..... | 0.140 | 3.56 | Cloudy | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dr. H. Groot. |
| Medellin, Colombia, S. A | 25.23 | 640.8 | ..... | ..... | 69.2 | 20.7 | 81 | SW | ..... | ..... | 1 | 3c;cs | 2ks | ..... | ..... | 0.04 | 1.0 | ..... | Thomas Herran |

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 metres; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,893 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,560 (?) ft., or 1,060.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,156.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er —10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.16 | 766.1 | 59 | 15.0 | 56 | 13.3 | 100 | SSW | 9 | 4.0 | ..... | ..... | 10 | ..... | SSW | 0.14 | 3.6 | ..... | ..... | Raining..... | |
| Navy Yard, Pensacola, Fla. | 30.08 | 764.0 | 65 | 18.3 | 64 | 17.8 | 94 | N | 3 | 1.3 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Portsmouth, N.H | 30.04 | 763.0 | 60 | 15.6 | 49 | 9.4 | ?? | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.625 | 15.88 | ..... | ..... | Dense fog.... | |
| Naval Hospital, Yokohama, Japan | 29.88* | 758.9* | 64.8 | 18.2 | 61.5 | 16.4 | 74 | SW | ..... | ..... | 1 | ..... | 4ks | ..... | SW | Slight | Slight | ..... | ..... | Fair..... | |
| Adams, Panama | 29.98 | 761.5 | 83 | 28.3 | 83 | 28.3 | 63 | N | ..... | ..... | 0–1 | ..... | 2 | ..... | N | ..... | ..... | Smooth | ..... | Fair..... | |
| Alliance, Villefranche, France | 30.02‡ | 762.5‡ | ..... | ..... | 65 | 18.3 | 73 | E | ..... | ..... | 0–1 | ..... | 3 | ..... | E | ..... | ..... | None | ..... | Pleasant..... | |
| Ashuelot, Nagasaki, Japan | 29.99 | 761.7 | 62 | 16.7 | 60 | 15.6 | 94 | N | ..... | ..... | 3 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Heavy dew.. | |
| Canonicus, New Orleans, La | 29.93 | 760.2 | 50 | 10.0 | 68 | 20.0 | 95 | S | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | Fair..... | |
| Colorado, New York, N. Y. | 29.82‡ | 757.4‡ | ..... | ..... | 56 | 13.3 | 100 | NE | ..... | ..... | 1 | ..... | 10 | ..... | NE | 0.54 | 13.7 | ..... | ..... | Foggy ..... | |
| Constellation, Havre, France | 30.17‡ | 766.3‡ | ..... | ..... | 60 | 15.6 | 76 | S | ..... | ..... | 1 | ..... | 8 | ..... | ENE | ..... | ..... | ..... | ..... | Fair..... | |
| Constitution, Havre, France | 30.08‡ | 764.0‡ | ..... | ..... | 63 | 17.2 | 83 | E | ..... | ..... | 1 | ..... | 7 | ..... | Calm | ..... | ..... | ..... | ..... | Pleasant..... | |
| Despatch, Constantinople, Turkey | 29.74‡ | 755.4‡ | ..... | ..... | 54 | 12.2 | 80 | NE | ..... | ..... | 3 | ..... | 10 | ..... | NE | ..... | ..... | ..... | ..... | Cloudy..... | |
| Franklin, Norfolk, Va | 29.88 | 758.9 | 67 | 19.4 | 64 | 17.8 | 78 | SE | 5 | 2.2 | ..... | ..... | 2 | ..... | SSW | 0.08 | 2.0 | ..... | ..... | D. clouds..... | |
| Gettysburg Valetta, Malta | 29.95‡ | 760.7‡ | ..... | ..... | 64 | 17.8 | ?? | NW | ..... | ..... | 4 | ..... | 2 | ..... | NW | 0 | 0 | ..... | ... ..... | Clear..... | |
| Guard, N. 14° 11′, W. 25° 03′ | 30.06 | 763.5 | 80 | 26.7 | 79 | 26.1 | 79 | E | ..... | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | Smooth | ..... | Clear. ..... | |
| Hartford, Montevideo, Uraguay | 29.84 | 757.9 | 68 | 20.0 | 63 | 17.2 | 89 | SW | 12 | 5.4 | ..... | ..... | 10 | ..... | W | 0.067 | 1.70 | Mod'ate | SW | Cloudy..... | |
| Marion, Smyrna, Turkey | 29.71 | 754.6 | 64 | 17.8 | 65 | 18.3 | 68 | NNW | ..... | ..... | 2 | ..... | 10 | ..... | NW | Heavy | Heavy | Smooth | ..... | Light rain.. | |
| Michigan, Erie, Pa | 29.35 | 745.5 | 65 | 18.3 | 58 | 14.4 | 82 | ENE | ..... | ..... | 1 | ..... | 10 | ..... | S | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monocacy, Shanghai, China | 29.79‡ | 756.7‡ | ..... | ..... | 76 | 24.4 | 73 | WNW | ..... | ..... | 2–3 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| New Hampshire, Port Royal, S. C | 30.07† | 763.8† | ..... | ..... | 66 | 18.9 | 58 | W | 7 | 3.1 | ..... | ..... | 5 | ..... | NW | ..... | ..... | ..... | ..... | Fair ..... | |
| Omaha, Portsmouth, N. H | 29.90* | 759.4* | 54 | 12.2 | 48 | 8.9 | 96 | NE | 4 | 1.8 | ..... | ..... | 10 | ..... | ..... | 0.5 | 13. | ..... | ..... | Rain & fog... | |
| Onward, Callao, Peru | 30.05† | 763.3† | ..... | ..... | 71 | 21.7 | 80 | Calm | ..... | ..... | 0 | ..... | 2 | ... | ..... | ..... | ..... | Long | W | Foggy ..... | |
| Ossipee, Hampton Roads, Va | 29.82‡ | 757.4‡ | ..... | ..... | 64 | 17.8 | 100 | SE | ..... | ..... | 3 | ..... | 2 | ..... | SE | ..... .. | ..... | Mod'ate | SSE | Clear..... | |
| Palos, Shanghai, China | 29.89* | 759.2* | 77 | 25.0 | 75 | 23.9 | 60 | W | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| Pensacola, San Francisco, Cal. | 30.28 | 769.1 | 60 | 15.6 | 56 | 13.3 | 94 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Smooth | ..... | Cloudy..... | |
| Plymouth, N. 26° 55′ W. 68° 41′ | 29 88‡ | 758.9‡ | ..... | ..... | 74 | 23.3 | 90 | SSE | ..... | ..... | 2 | ..... | 2 | ..... | SSE | ..... | ..... | Smooth | ..... | Fair..... | |
| Powhatan, Norfolk, Va | 29.81‡ | 757.2‡ | ..... | ..... | 63 | 17.2 | 100 | ESE | 6.0 | 2.7 | ..... | ..... | 2 | .... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Ranger. Amoy, China | 30.13* | 765.3* | ..... | ..... | 77 | 25.0 | 86 | SSE | ..... | ..... | 1 | ..... | 2 | .. ..... | Calm | ..... | ..... | Smooth. | NE | D. clouds..... | |
| Rio Bravo Brownsville, Texas | 29.74 | 755.4 | 75 | 23.9 | 75 | 23.9 | 100 | SE | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Cloudy..... | |
| Santee, Annapolis, Md | 29.82‡ | 757.4‡ | ..... | ..... | 59 | 15.0 | 94 | E | ..... | ..... | 2 | ..... | 10 | ..... | E | 1.49 | 37.8 | ..... | ..... | Cloudy..... | |
| Saratoga, Washington, D. C. | 29.75 | 755.6 | 68 | 20.0 | 67 | 19.4 | 100 | E | ..... | ..... | 2 | ..... | 10 | ..... | E | Mod'ate | Mod'ate | ..... | ..... | Cloudy..... | |
| St. Louis, League Island, Pa | 29.82 | 757.4 | 67 | 19.4 | 61 | 16.1 | 88 | NE | 5 | 2.2 | ..... | ..... | 10 | ..... | NE | 0.19 | 4.8 | ..... | ..... | Drizzling.... | |
| Supply, Havre, France | 30.15 | 765.8 | 61 | 16.1 | 65 | 18.3 | 58 | SE | ..... | ..... | 1 | ..... | 5 | ..... | SE | ..... | ..... | ..... | ..... | Clear..... | |
| Swatara, Key West, Fla | 29.92‡ | 760.0‡ | ..... | ..... .. | 77 | 25.0 | 73 | NNE | ..... | . .... | 2 | ..... | 2 | ..... | N&E | .... ... | ..... | ..... | ..... | Clear ..... | |
| Tennessee, Alexandria, Egypt | 29.80* | 756.9* | 70 | 21.1 | 67 | 19.4 | 79 | NW | 4 | 1.8 | ..... | ..... | 3 | .... ... | NW | ..... | ..... | Slight | NW | D clouds..... | |
| Trenton, Villefranche, France | 30.01‡ | 762.2‡ | ..... | ..... | 66 | 18.9 | 79 | ESE | ..... | ..... | 1–2 | ..... | 0 | ..... | ..... ... | 0 | 0 | ..... | ..... | Clear.. ..... | |
| Tuscarora, N. 16° 21′, W. 98° 39′ | 29.76 | 755.9 | 78 | 25.6 | 78 | 25.6 | 86 | NNW | ..... | ..... | 0–1 | ..... | 5 | ..... | Calm | 0 | 0 | Smooth | ..... | Hazy & misty | |
| Vandalia, Valetta, Malta | 30.12‡ | 765.0‡ | ..... | ..... | 64 | 17.8 | 78 | NNW | ..... | ..... | 2 | ..... | 5 | ..... | NW | ..... | ..... | ..... | ..... | Fair..... | |
| Wabash, Boston, Mass | 29 95‡ | 760.7‡ | ..... | ..... | 49 | 9.4 | 100 | NE | 10 | 4.5 | ..... | ..... | 10 | ..... | ..... | 0.68 | 17.3 | ..... | ..... | Foggy ..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable; the position given is that at noon, local time, instead of that at 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | Force. | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | |
| S. S. City of Peking, N. 34° 30′, E. 138° 45′ | | | 29.99† | 761.7† | 60 | 15.6 | ?? | W | 13.0 | 5.8 | | 0 | | | | Smooth | Calm | Blue sky | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. Colima, N. 16° 05′, W. 98° 50′ | | | 29.91† | 759.7† | 77 | 25.0 | 100 | E | | | 2 | | 7 | | SE | Small | W | Misty | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. †Aneroid.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WHITE STAR LINE MARINE SERIES.** Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York. | | | | | | | | | | | | | | | | | | | |
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, N. 40° 20′, W. 69° 20′ | | | 29.94† | 760.5† | 50 | 10.0 | ?? | SE | | | 4 | | 10 | | | Mod'ate | SE | Foggy | Capt. W. H. Thompson. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic, N. 49° 44′, W. 25° 39′ | | | 29.48† | 748.8† | 54 | 12.2 | ?? | Var. | | | 4 | | 7 | | SW | Mod'ate | S | Drizzling | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Aneroid.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.** Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary. | | | | | | | | | | | | | | | | | | | |
| S. S. Belgic, N. 35° 31′, W. 157° 45′ | | | 30.40* | 774.4* | | | | N | | | 4 | | 8 | | N | Mod'ate | NW | D. clouds | Capt. John Metcalf. |
| S. S. Gaelic, N. 44° 00′, W. 177° 40′ | | | 29.77† | 756.1† | 45 | 7.2 | 84 | SW&SE | | | 5 | | n;hz | | Var. | Chop | SE | Raining | Capt. W. H. Kidley |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.** Furnished by the coöperation of A. Schumacher & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig, N. 42° 4′, W. 47° 26′ | | | 30.12 | 765.0 | 46.0 | 7.8 | ?? | NW | | | 4 | | 10 | | SE | Mod'ate | NW | | |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | Character | Direction From— | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, Philadelphia, Pa | | | 29.82* | 757.4* | 59 | 15.0 | 100 | ENE | | | 5 | | 9 | | NNE | | | Cloudy | Captain Sargent. |
| S. S. Ohio, N. 50° 47′, W. 16° 57′ | | | 29.60 | 751.8 | 56 | 13.3 | 94 | SE | | | 4 | | 6 | | SE | Mod'ate | ESE | Misty | Captain Morrison. |
| S. S. Pennsylvania, N. 48° 37′, W. 35° 06′ | | | 29.81† | 757.2† | 52 | 11.1 | 100 | N | | | 4 | | 9 | | NE | Light | NE | Cloudy | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for elevation; instrumental error not known. †Corrected for temperature and elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |
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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| S. S. Scandinavian, N. 44° 28′, W. 63° 18′ | | | 30.27 | 768.8 | 39 | 3.9 | | ESE | | | 3 | | | | | Mod'ate | SSE | Foggy | Capt. W. Richardson. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.)**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller St. John, N. B. | | | 30.07 | 763.8 | 57 | 13.9 | 75 | E | | | | | Fog | | | | | Foggy | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 30.05 | 763.3 | 10.2 | —12.1 | 90 | WNW | 9.6 | 4.3 | | 0 | 8ks | | N | | | Cloudy | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |
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NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer. U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 29, 1878.

**7:35 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.01 | 762.2 | 68.7 | 20.4 | 85 | Calm | ..... | ..... | 0 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy..... | Dr. Ollive. |
| Nemours | ..... | ..... | 29.95 | 760.7 | 74.5 | 23.6 | 55 | Calm | ..... | ..... | 0 | ..... | 7 | ..... | ..... | 0 | 0 | Very cloudy | Michel. |
| Algiers | ..... | ..... | 29.94 | 760.4 | 78.1 | 25.6 | 44 | Calm | ..... | ..... | 0 | ..... | 9 | ..... | ..... | 0 | 0 | Covered.. ... | Towiliere. |
| La Calle | ..... | ..... | 30.03 | 762.7 | 66.0 | 18.9 | 80 | E | ..... | ..... | 5 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy..... | Boulangeot. |
| Tunis | ..... | ..... | 30.15 | 765.8 | 69.4 | 20.8 | 56 | E | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair.... | Jacques. |
| Sfax | ..... | ..... | 30.16 | 766.0 | 71.6 | 22.0 | ..... | WNW | ..... | ..... | 3 | ..... | 2 | ..... | ..... | 0 | 0 | Fair..... | Gau. |
| Saida | ..... | ..... | 29.99 | 761.7 | 83.8 | 28.8 | ..... | ..... | ..... | ..... | 1 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy ..... | Herbin. |
| Tebessa | ..... | ..... | 30.07 | 763.8 | ..... | ..... | ..... | N | ..... | ..... | 3 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair.... | Watrin. |
| Geriville | ..... | ..... | 30.23 | 767.8 | 71.2 | 21.8 | 69 | S | ..... | ..... | 5 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Lemaillot. |
| Laghouat | ..... | ..... | 30.19 | 766.9 | 81.0 | 27.2 | 27 | Calm | ..... | ..... | 0 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy..... | Bertrand. |
| Biskra | ..... | ..... | 30.07 | 763.6 | 64.7 | 29.3 | 39 | SE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Very fair. ... | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.51 | 749.6 | 30.05 | 763.3 | 66.6 | 19.2 | 37 | SE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir. |
| Cracow, I. R. Observatory.. | 29.29 | 743.9 | 30.05 | 763.2 | 60.8 | 16.0 | 47 | W | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbiski. |
| Eperies | 29.14 | 740.2 | 30.00 | 762.1 | 62.2 | 16.8 | 39 | N | ..... | ..... | 4 | ..... | 3cs | ..... | S | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.83 | 732.3 | 30.06 | 763.5 | 62.6 | 17.1 | 45 | S | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.50 | 723.8 | 29.89 | 759.2 | 62.2 | 16.8 | 43 | N | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.69 | 728.8 | 30.02 | 762.4 | 59.4 | 15.2 | 56 | E | ..... | ..... | 2 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner |
| Lemberg | 29.01 | 736.8 | 29.99 | 761.7 | 56.3 | 13.5 | 85 | N | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Dr. T. Stanecki. |
| Pola | 29.98 | 761.4 | 30.09 | 764.2 | 64.2 | 17.9 | 59 | WNW | ..... | ..... | 2 | ..... | 1ks | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.55 | 750.5 | 30.00 | 762.1 | 61.9 | 16.6 | 36 | N | ..... | ..... | 4 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.74 | 755.5 | 30.02 | 762.5 | 61.5 | 16.4 | 52 | NW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | Karl Stancel. |
| Trieste | 30.01 | 762.3 | 30.11 | 764.9 | 63.1 | 17.3 | 68 | W | ..... | ..... | 1 | ..... | 2 | ..... | ..... | 0 | 0 | ..... | P. Busin. |
| Vienna | 29.37 | 746.0 | 30.08 | 763.9 | 63.1 | 17.3 | 39 | ENE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 0 | 0 | Clear..... | I. R. Central Met.Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 843.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,268.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.47 | 723.1 | 29.95 | 760.7 | 63.0 | 17.2 | 49 | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.091 | 2.3 | Solar halo... | Prof. M. Passau. |
| Brussels | 29.74 | 755.5 | 29.94 | 760.5 | 65.8 | 18.8 | 41 | ESE | ..... | ..... | 3 | 10 | 0? | W | E | 0 | 0 | Solar Halo.. | Royal Observatory. |
| Furnes | 29.95 | 760.8 | 29.97 | 761.2 | 67.1 | 19.5 | 47 | ESE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.024 | 0.6 | ..... | M. E. de Cae. |
| Maeseyck | 29.87 | 758.7 | 30.00 | 761.9 | 63.3 | 17.4 | 62 | E | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

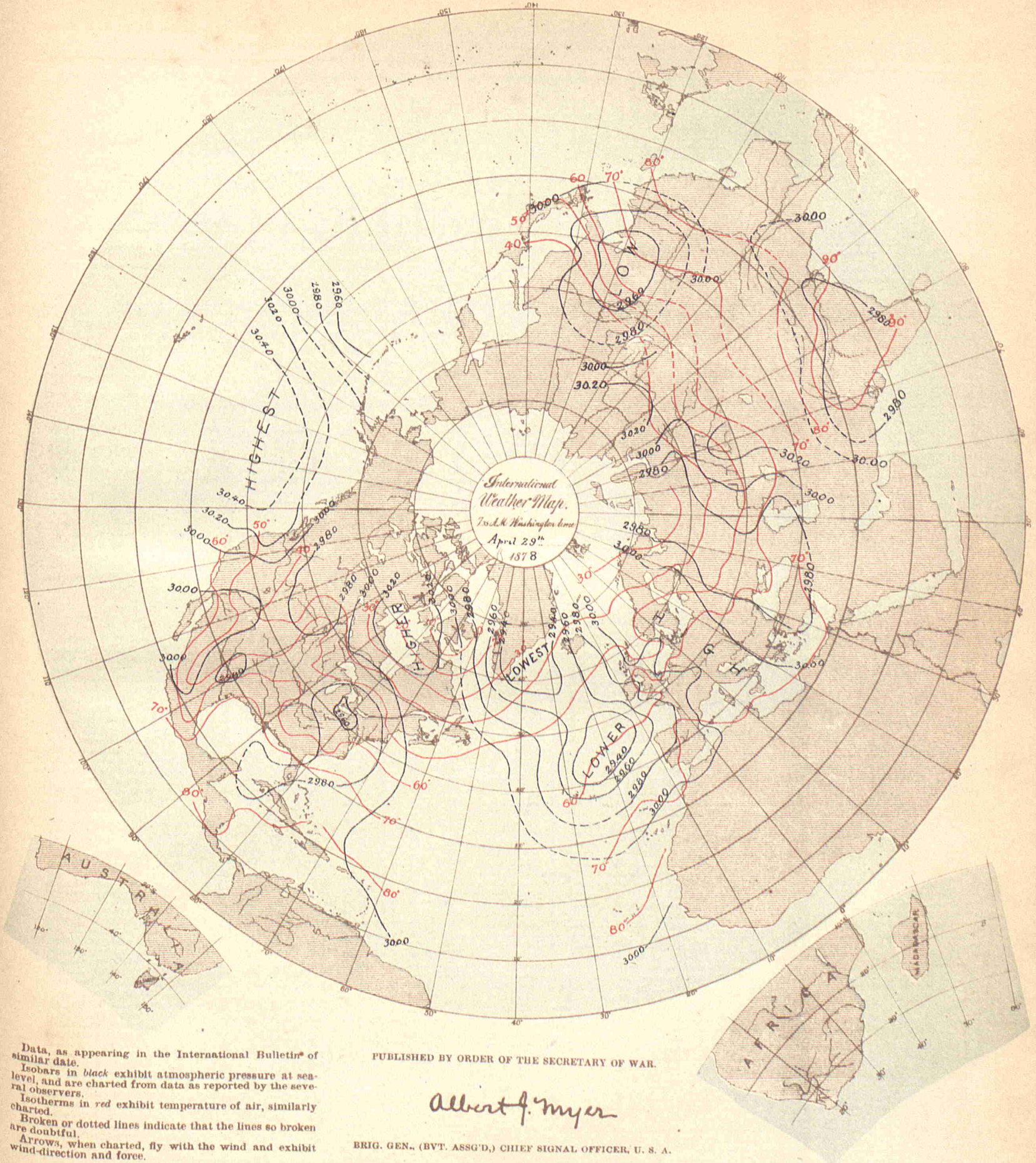
| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.90 | 759.4 | 30.00 | 762.0 | 43.3 | 6.3 | ..... | SE | 15 | 6.7 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Misty | W. Boswell. |
| Ardrossan | 29.83 | 757.7 | 29.84 | 757.9 | 63 | 17.2 | ..... | SE | ..... | ..... | 3 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.79 | 756.7 | 57.3 | 14.1 | ..... | ESE | 20 | 8.9 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.83 | 757.7 | 62.4 | 16.9 | ..... | ESE | 21 | 9.4 | ..... | ..... | 8 | ..... | ..... | ..... | ..... | Overcast | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 29.70 | 754.4 | 55.8 | 13.2 | ..... | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | J. L. E. Dreyer. |
| Bradford, Yorkshire | 29.51 | 749.5 | 29.92 | 760.0 | 59.6 | 15.3 | ..... | NE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | D. clouds | J. McLandsborough. |
| Bridgetown, (Barbados) | ..... | ..... | 29.93 | 760.2 | 83.5 | 28.6 | ..... | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.92 | 760.0 | 58.0 | 14.4 | ..... | E | ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | D. clouds | H. Todd. [H. C. |
| Cardington | ..... | ..... | 29.92 | 760.0 | 68.6 | 20.3 | ..... | SE | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | John McLaren. |
| Chatham, School M. E. | 29.79 | 756.7 | 29.92 | 760.0 | 60.7 | 15.9 | ..... | E | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | Q. M. Serg., Geo. Stuart, R. E. |
| Dartmoor | 28.48 | 723.4 | 29.94 | 760.5 | 55.0 | 12.8 | ..... | E | ..... | ..... | 4 | ..... | 6 | ..... | ..... | ..... | ..... | Gloomy | Alexander Watt. |
| Donaghadee | 29.78 | 756.4 | 29.81 | 757.2 | 54 | 12.2 | ..... | SSE | ..... | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | J. Mac Gowan. |
| Dover | 29.89 | 759.2 | 29.92 | 760.0 | 54 | 12.2 | ..... | ENE | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | ½ clouded | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.86 | 758.4 | 66.9 | 19.4 | ..... | SE | 15.0 | 6.7 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds | Thomas Mackereth. |
| Falmouth, Observatory | 29.51 | 749.5 | 29.74 | 755.4 | 52.3 | 11.3 | ..... | E | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | The Staff. |
| Fort Napier, (Natal) | 27.82 | 706.6 | 30.03 | 762.7 | 70.0 | 21.1 | ..... | E | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast | Pvt. G. Salmon, A. H. C. |
| Free Town, (Sierra Leone) | 29.67 | 753.6 | 29.90 | 759.4 | 89.0 | 31.7 | ..... | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds | |
| Galway, Queen's College | ..... | ..... | 29.62 | 752.3 | 56 | 13.3 | ..... | SSE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.85 | 758.2 | 29.92 | 760.0 | 74.9 | 23.8 | ..... | E | ..... | ..... | 4 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds | Corpl. Wm. Allen, A. H. C. |
| Glasgow, Observatory | 29.67 | 753.6 | 29.87 | 758.7 | 54.9 | 12.7 | ..... | ENE | ..... | ..... | 5 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | D. G. Maclean. |
| Great Yarmouth | 30.00 | 762.0 | 30.01 | 762.2 | 50 | 10.0 | ..... | E | ..... | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | Blue sky | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.73 | 755.1 | 29.90 | 759.4 | 61.9 | 16.6 | ..... | E | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | The Staff, for G. B. Airy. |
| Guernsey | 29.55 | 750.6 | 29.77 | 756.1 | 56.5 | 13.6 | ..... | ESE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds | Dr. S. E. Hoskins, F. R. S. |
| Helston | ..... | ..... | 29.77 | 756.1 | 57 | 13.9 | ..... | E | ..... | ..... | 4 | ..... | 10n | ..... | ..... | 0.02 | 0.5 | Raining | M. P. Moyle. |
| Holyhead | 29.73 | 755.1 | 29.78 | 756.4 | 64 | 17.8 | ..... | SSW | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | Misty | John Tilston. |
| Jersey | 29.51 | 749.5 | 29.80 | 756.9 | 58.0 | 14.4 | ..... | ESE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Gloomy | J. Fisher. |
| Kew, Observatory | ..... | ..... | 29.89 | 759.2 | 62.5 | 16.9 | ..... | E | 17 | 7.6 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Misty | The Staff. |
| Kingstown | 29.76 | 755.9 | 29.78 | 756.4 | 56 | 13.3 | ..... | SE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.88 | 758.9 | 63.0 | 17.2 | ..... | SE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds | Wm. J. Harrison, F. G. S. |
| Malta, (Mediterranean) | 29.98 | 761.5 | 30.06 | 763.5 | 67.0 | 19.4 | ..... | NW | ..... | ..... | 2 | ..... | 2 | ..... | ..... | ..... | ..... | D. clouds | Sgt. Fred. Travis, A. H. |
| Nairn | 29.79 | 756.7 | 29.88 | 758.9 | 56 | 13.3 | ..... | E | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | Hazy | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 29.87 | 758.7 | 78.5 | 25.8 | ..... | SE | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | C. S. Duncombe. |
| Nottingham, Observatory | 29.72 | 754.9 | 29.91 | 759.7 | 67.1 | 19.5 | ..... | SE | ..... | ..... | 6 | ..... | 5c;ck | ..... | SSW;SSE | 0 | 0 | D. clouds | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.35 | 745.5 | 29.86 | 758.4 | 61.4 | 16.3 | ..... | ESE | ..... | ..... | 3–4 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.87 | 758.7 | 64 | 17.8 | ..... | SSE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | Mr. Lucas. |
| Plymouth | 29.69 | 754.1 | 29.76 | 755.9 | 57.8 | 14.3 | ..... | E | ..... | ..... | 4 | ..... | 10 | ..... | ..... | ..... | ..... | Showery | John Merrifield. |
| Roche's Point | 29.60 | 751.8 | 29.65 | 753.1 | 53 | 11.7 | ..... | SE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Raining | W. Kennedy. |
| Saint Ann's Head | 29.59 | 751.6 | 29.75 | 755.6 | 53 | 11.7 | ..... | ESE | ..... | ..... | 5 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast | John C. Walker. |
| Sandwick Manse, (Orkneys.) | ..... | ..... | 29.96 | 761.0 | 49.8 | 9.9 | ..... | S | 23 | 10.3 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey) | ..... | ..... | 29.87 | 758.7 | 63.0 | 17.2 | ..... | N | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds | Sergt. W. H. Lyne. |
| Sheffield | 29.66 | 753.4 | 29.93 | 760.2 | 60.9 | 16.1 | ..... | NE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | 0 | 0 | Overcast | W. F. Cooper. |
| Silloth Rectory | 29.84 | 757.9 | 29.87 | 758.7 | 66.2 | 19.0 | 51 | SE | ..... | ..... | 5 | ..... | 3 | ..... | ..... | 0 | 0 | D. clouds | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.50 | 749.3 | 29.90 | 759.4 | 62.1 | 16.7 | ..... | E | ..... | ..... | 3 | ..... | 5 | ..... | ..... | ..... | ..... | Hazy | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 29.83 | 757.7 | 55 | 12.8 | ..... | SE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ¼ clouded | John Sutherland. |
| Stratfield Turgiss | 29.66 | 753.4 | 29.87 | 758.7 | 62.9 | 17.2 | ..... | SE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | D. clouds | Rev. C. H. Griffith, F. M |
| Thurso | ..... | ..... | 29.92 | 760.0 | 61 | 16.1 | ..... | SE | ..... | ..... | 3 | ..... | 4 | ..... | ..... | ..... | ..... | Misty | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 29.75 | 755.6 | 57 | 13.9 | ..... | E | ..... | ..... | 6 | ..... | 8 | ..... | ..... | ..... | ..... | Gloomy | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 29.58 | 751.3 | 53.0 | 11.7 | ..... | ESE | 25 | 11.2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Raining | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.62 | 752.3 | 60.0 | 15.6 | 88 | SE | ..... | ..... | 3 | ..... | 5k | ..... | ..... | 0.30 | 7.6 | Showery | Francis Abbott, F. R. A. S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.79 | 756.7 | 29.98 | 761.5 | 80.9 | 27.2 | 73 | ESE | 11.5 | 5.1 | ..... | 0 | 4 | ..... | ESE | 0.09 | 2.3 | Fine | C. Meldrum. |
| Melbourne, Observatory | 29.94 | 760.5 | 30.03 | 762.7 | 51.8 | 11.0 | 75 | W | 16 | 7.2 | ..... | ..... | 7 | ..... | ..... | 0.02 | 0.5 | Fine | R. L. J. Ellery. |
| Monach Light-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft, or 670.6 m.

## MARINE SERIES.

| VESSELS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Algeria | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. C. C. Prehn. |
| S. S. Naid, N. 48° 40′, W. 22° 25′ | ..... | ..... | 29.43 | 747.5 | 55 | 12.8 | ..... | N | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 3 | N | D. clouds | Capt. J. Smith. [R. |
| S. S. Peruvian | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10 | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Punta Arenas** | | | | | | | | | | | | | | | | | | | Mr. Ansart. |
| San Jose | 26.20 | 665.0 | | | 68.4 | 20.2 | 77 | E | | | 1 | 3pc | Haze | | | 0 | 0 | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Copenhagen** | 30.00 | 762.0 | 30.05 | 763.2 | 53.1 | 11.7 | 74 | SSE | | | 2 | | 2 | | | | | | |
| **Fanöe** | 30.03 | 762.7 | 30.05 | 763.2 | 48.9 | 9.4 | 82 | W | | | 4 | | 1 | | | | | | |
| **Godthaab, (Greenland)** | 29.37 | 746.0 | 29.41 | 747.1 | 21.0 | —6.1 | 69 | NNE | | | 6 | | 0 | | | | | | |
| **Stykkisholm, (Iceland)** | 29.42 | 747.2 | 29.46 | 748.3 | 42.6 | 5.9 | 91 | S | | | 2 | | 10 | | | | | | |
| **Thorshavn, (Farõe)** | 29.90 | 759.5 | 29.94 | 760.4 | 46.2 | 7.9 | 90 | SE | | | 2 | | 10 | | | | | | |
| **Vestervig** | 29.82 | 757.5 | 29.99 | 761.8 | 59.4 | 15.2 | 54 | Calm | | | 0 | | 0 | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Alençon, Normal School** | 29.32 | 744.8 | 29.87 | 758.8 | 57.2 | 14 | 83 | SE | | | 1 | | 10 | | | 0 | 0 | Covered | Collignon, Director. |
| **Amiens, Normal School** | | | | | | | | | | | | | | | | | | | Bonvarne, Director. |
| **Avignon, Normal School** | 30.00 | 761.9 | 30.08 | 763.9 | 64.9 | 18.3 | 53 | SW | | | 2 | | 10 | | | 0 | 0 | Covered | Mr. Giraud, Director |
| **Bar-sur-Seine** | 29.35 | 745.4 | 29.89 | 759.1 | 67.6 | 19.8 | 50 | SE | | | 2 | | 10 | | | 0 | 0 | Covered | C. Saillard. |
| **Beaumette Obs'y (Angers)** | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| **Beauvais** | | | | | 64.6 | 18.1 | 54 | E | | | 1 | | 10 | | Calm | 0 | 0 | Covered | Normal School. |
| **Besançon** | 29.06 | 738.2 | 29.93 | 760.1 | 67.5 | 19.7 | 74 | SSW | | | 2 | | | | E | 0.008 | 0.2 | Foggy | Normal School. |
| **Bourg-en-Bresse** | 29.10 | 739.2 | 30.02 | 762.6 | 63.1 | 17.3 | 68 | S | | | 6 | | 10n | | S | | | Raining | Normal School. |
| **Bourges, Normal School** | 29.31 | 744.4 | 29.85 | 758.3 | 59.0 | 15 | 89 | SW | | | 2 | | 5 | | SW | 0 | 0 | Cloudy | A. Wagner, Director. |
| **Brest, Naval Observatory** | 29.43 | 747.4 | 29.65 | 753.0 | 59.5 | 15.3 | 84 | ESE | | | 2 | | 9 | | ESE | 0.020 | 0.50 | | The Staff. |
| **Carcassonne, Normal School** | 29.52 | 749.7 | 29.93 | 760.2 | 63.0 | 17.2 | 70 | E | | | 6 | | 10 | | E | 0 | 0 | Covered | Vateau, Director. |
| **Caen** | | | | | | | | | | | | | | | | | | | Normal School. |
| **Chartres, Normal School** | 29.26 | 743.2 | 29.82 | 757.5 | 58.8 | 14.9 | 85 | SE | | | 2 | | 6 | | SW | 0 | 0 | | Lequin, Director. |
| **Châlons-sur-Marne, N. Sch'l** | 29.53 | 750.1 | 29.84 | 758.0 | 68.7 | 20.4 | 46 | S | | | 2 | | 10 | | | 0 | 0 | Covered | T. Leloup, Director. |
| **Clermont-Fd., Puy de D. Obs** | 28.54 | 725.0 | 29.86 | 758.4 | 66.4 | 19.1 | 45 | S | | | 2 | | 10 | | S | 0 | 0 | Covered | Alluard, Director. |
| **Commercy, Normal School** | 29.10 | 739.1 | 29.97 | 761.1 | 61.5 | 16.4 | 77 | SW | | | 2 | | 2 | | SW | 0 | 0 | Slightly cl'dy | Dr. Goulet, Director. |
| **Commune de Gréasque*** | 29.01 | 736.8 | 30.19 | 766.8 | 65.7 | 18.7 | 40 | SE | | | 2 | | 8 | | SE | 0 | 0 | ¾ Covered | M. Kina. |
| **Grenoble** | | | | | | | | | | | | | | | | | | | Normal School. |
| **La Roche-sur-Yon, N. School** | 29.59 | 751.5 | 29.80 | 756.8 | 66.2 | 19.0 | 66 | NNW | | | 1 | | 8 | | NNW | 0.002 | 0.05 | Very cloudy | Mouillot, Director. |
| **Le Mans, Normal School** | 29.54 | 750.3 | 29.85 | 758.1 | 58.6 | 14.8 | 76 | SSE | | | 2 | | 10 | | SSE | 0 | 0 | Covered | Poirrier, Director. |
| **Lons-Le-Saulnier, N. School** | 29.09 | 738.8 | 29.98 | 761.5 | 66.2 | 19 | 72 | SW | | | 2 | | 5 | | SW | 0 | 0 | Cloudy | Voudez, Director. |
| **Lorient, Naval Observatory** | 29.72 | 754.9 | 29.82 | 757.4 | 61.9 | 16.6 | 75 | SE | | | 3 | | 10 | | S | 0.197 | 5.0 | Covered | T. Carré, Director. |
| **Mâcon, Normal School** | 29.26 | 743.2 | 29.94 | 760.4 | 63.7 | 17.6 | 82 | WNW | | | 4 | | 10 | | W | 0 | 0 | Covered | M. Marchal, Director. |
| **Metz** | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| **Mirecourt** | 28.87 | 733.4 | 29.89 | 759.1 | 67.3 | 19.6 | 58 | NNW | | | 4 | | 2 | | SW | 0 | 0 | Slightly cl'dy | Normal School. |
| **Nismes, Normal School** | 29.82 | 757.5 | 30.02 | 762.6 | 65.8 | 18.8 | 49 | N | | | 1 | | 2 | | S | 0 | 0 | Slightly cl'dy | Boyer, Director. |
| **Orleans, Normal School** | 29.53 | 750.1 | 29.91 | 759.6 | 67.1 | 19.5 | 87 | W | | | 4 | | 10 | | | 0 | 0 | Covered | Bernard, Director. |
| **Paris, Observatory** | 29.64 | 752.8 | 29.87 | 758.8 | 64.0 | 17.8 | 55 | E | | | 2 | | 10 | | | 0 | 0 | Covered | National Observatory. |
| **Privas** | 29.02 | 737.0 | 30.08 | 764.0 | 58.1 | 14.5 | 47 | S | | | 1 | | 5 | | SW | 0 | 0 | Cloudy | Normal School |
| **Puy de Dome (Summit)** | | | | | | | | | | | | | | | | | | | Alluard, Director. |
| **Rochefort, Naval Obs'y** | 29.75 | 755.7 | 29.78 | 756.5 | 65.3 | 18.5 | 62 | E | | | 2 | | 10 | | E | 0 | 0 | Covered | Lt. Decante, Director. |
| **Rouen, Normal School** | 29.78 | 756.3 | 29.86 | 758.5 | 65.8 | 18.8 | 54 | NNE | | | 2 | | 10 | | SW | 0 | 0 | Covered | F. Lucard, Director |
| **Saint Malo (Port)** | | | | | | | | | | | | | | | | | | | M. H. Hercouet |
| **Tarbes, Normal School** | 28.84 | 732.5 | 29.87 | 758.6 | 66.2 | 19 | 54 | WSW | | | 2 | | 0 | | | 0.04 | 1. | Clear | T. Hugues, Director |
| **Villefranche** | | | | | | | | | | | | | | | | | | | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| **Fort de France, Martinique** | 29.79 | 756.6 | 29.82 | 757.3 | 80.6 | 27 | | | | | | | | | | 0.35 | 9. | | L'Abbé Marchési |
| **Lyons** | | | 29.99 | 761.8 | 60.1 | 15.6 | 75 | | | | | | 10 | | | | | Rainy | M. Jeys. |
| **Marseilles, Observatory** | | | 30.07 | 763.8 | 65.5 | 18.6 | 39 | SE | | | 1-2 | | 10 | | | | | Raining | The Staff. |
| **Mont-Louis** | 24.85 | 631.2 | 30.17 | 766.2 | 64.0 | 17.8 | 32 | SSW | 28.0 | 12.50 | | | 4 | | W | 0 | 0 | | Mr. Falguère. |
| **Nice** | | | 30.15 | 765.8 | 62.4 | 16.9 | 91 | S | | | 2 | | 10 | | | 0 | 0 | Covered | Dr. A. Niepce. |
| **Paris, Montsouris Obs'y** | 29.59 | 751.6 | 29.87 | 758.6 | 64.2 | 17.9 | 59 | E | | | 2 | | 10 | | | Inap | Inap. | | Marié Davy, Director |
| **Perpignan** | | | 29.95 | 760.8 | 63.1 | 17.3 | 74 | E | 9.3 | 4.17 | | | 5 | | NW | 0 | 0 | | Dr. Fines. |
| **Pic du Midi, (Summit,) H. P.** | | | | | | | | | | | | | | | | | | | M. Baylac. |
| **Pic du Midi, (Plantade,) H. P.** | 22.49 | 571.2 | | | 48.2 | 9.0 | | W | | | 6-8 | | 9 | | | 0 | 0 | Cloudy | Gen'l de Nansouty |
| **Saint Maur, (near Paris)** | 29.71 | 754.7 | 29.88 | 758.9 | 64.6 | 18.1 | 53 | E | | | 2 | | 10 | | | 0 | 0 | Covered | E. Renou. |
| **Toulouse, Observatory** | 29.16 | 740.6 | 29.88 | 758.9 | 64.8 | 18.2 | 63 | SSE | | | 8 | | 8 | | | 0 | 0 | | The Staff. |
| **Tours** | 29.61 | 752.0 | 29.80 | 757.0 | 66.0 | 18.9 | 64 | ESE | | | 1 | | 8 | | W | 0 | 0 | | C. Marquet. |
| **Versailles, (near Paris)** | | | 29.89 | 759.2 | 63.7 | 17.6 | 56 | SE | | | 1 | | 10 | | | Inap | Inap. | Covered | Dr. A. Bérigny. |
| **Zi-Ka-Wei, (near Shanghai)** | 29.84 | 757.8 | 29.86 | 758.4 | 69.8 | 21.0 | 75 | SE | 7.6 | 3.4 | | | 8 | | | 0 | 0 | Covered | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 29.21 | 742.0 | 30.06 | 763.4 | 59.7 | 15.4 | 64 | E | | | 4 | | 6 | E | | 0 | 0 | | Prof. Dr. Hoh. |
| Berlin | 29.90 | 750.4 | 30.07 | 763.7 | 65.5 | 18.6 | 41 | S | | | 1 | | 6 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.58 | 754.3 | 30.11 | 764.8 | 62.4 | 16.9 | 42 | WSW | | | 1 | | 3 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.53 | 750.0 | 29.95 | 760.6 | 69.3 | 20.7 | 50 | NE | | | 3 | | 10 | | | 0.402 | 10.2 | Light clouds | Albert Senz. |
| Cassel | 29.49 | 749.1 | 30.10 | 764.6 | 67.3 | 19.6 | 37 | NE | | | 3 | | 4 | SSW | | 0 | 0 | | Dr. H. Möhl. |
| Crefeld | 29.82 | 757.5 | 29.98 | 761.6 | 69.4 | 20.8 | 36 | SE | | | 1 | | 8 | | | 0 | 0 | | Director Lose. |
| Emden | 30.03 | 762.7 | 30.07 | 763.6 | 54.0 | 12.2 | 59 | E | | | 0 | | 0 | | | 0 | 0 | | Prof. Prestel. |
| Frankfort on the Main | 29.69 | 754.0 | 30.04 | 763.0 | 68.2 | 20.1 | 18 | SE | | | 2 | | 4 | | | 0 | 0 | | Physical Society. |
| Friedrichshafen | 28.58 | 726.0 | 29.99 | 761.7 | 63.3 | 17.4 | 62 | WSW | | | 1 | | 6 | W | | 0.630 | 16.0 | | M. Wilhelm. |
| Hamburg | 30.00 | 762.0 | 30.07 | 763.8 | 56.5 | 13.6 | 62 | W | | | 2 | | 7ks | | | 0 | 0 | Fine | Captain F. Hegemann. |
| Kiel | 30.02 | 762.4 | 30.03 | 762.8 | 54.1 | 12.3 | 61 | WNW | | | 1 | | 6 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.95 | 760.8 | 30.04 | 762.9 | 56.3 | 13.5 | 45 | NE | | | 2 | | 4 | | | 0 | 0 | | Prof. E Luther |
| Köslin | | | 30.06 | 763.4 | 47.3 | 8.5 | | NW | | | 2 | | 1 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.65 | 753 2 | 30.07 | 763.7 | 66.9 | 19.4 | 62 | SSW | | | 1 | | 4 | S | | 0 | 0 | | Prof. Bruhns. |
| Memel, Naval School | 30.06 | 763.4 | 30.10 | 764.6 | 49.6 | 9 8 | 40 | NW | | | 3 | | 0 | | | | | Squally | Reinbrecht and Skalweit. |
| Neufahrwasser | 30.08 | 763.9 | 30.09 | 764.3 | 50.0 | 10.0 | 79 | NE | | | 1 | | 1 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.82 | 757.5 | 30.11 | 764 9 | 64.0 | 17.8 | 52 | NW | | | 2 | | 4 | | | 0 | 0 | | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.45 | 748.0 | 29.98 | 761.6 | 67.5 | 19.7 | 54 | ESE | | | 1 | | 10 | | | 0 | 0 | | Dr. Schur. |
| Stuttgart | 29.05 | 737.8 | 29.97 | 761.1 | 67.1 | 19.5 | 37 | S | | | 1 | | 0? | | | 0.118 | 3.0 | Raining? | Prof. Schoder. |
| Treves, (Trier) | 29.34 | 745.2 | 29.86 | 758.5 | 68.5 | 20.3 | 39 | SE | | | 2 | | 8 | | | 0 | 0 | | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.53 | 724.7 | 29.99 | 761.8 | 63.3 | 17.4 | 47 | S | 1 | 0.5 | | | 5ck | | | 0 | 0 | | Dr. Von Bebber. |
| Wustrow, Naval School | 30.12 | 765.0 | 30.16 | 766.0 | 47.5 | 8.6 | 79 | NW | | | 1 | | 3 | | | 0 | 0 | | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.57 | 751.1 | 29.96 | 761.0 | 67.6 | 19.8 | | N | | | 2.5 | | | | | | | ⅓ clear | Dr. J. F. J. Schmidt. |

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.70 | 754.3 | 29.75 | 755 6 | 82.9 | 28.3 | 77 | SW | 34? | 15.2? | | | 5 | | WSW | 0 | 0 | D. clouds | |
| Deesa | 29.29 | 743.8 | 29.74 | 755.5 | 99.2 | 37.3 | 22 | W | | | | | 3 | W | | 0 | 0 | Misty | |
| Bombay | 29.73 | 755.0 | 29.76 | 756.0 | 85.6 | 29.8 | 80 | WNW | 13 | 5.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Poona | 27.74 | 704.5 | 29.68 | 753.9 | 92.3 | 33.5 | 45 | W | | | | | 1 | | | 0 | 0 | Dust-whirl | |
| Lahore | 28.94 | 735.1 | 29.66 | 753.3 | 97.2 | 36.2 | 21 | N | 2.3 | 1.0 | | | 2 | | | 0 | 0 | Blue sky | |
| Belgaum | 27.28 | 692.8 | 29.81 | 757.1 | 76.9 | 24.9 | 83 | W | 6 | 2.7 | | | 6 | E;W | | 0 | 0 | D. clouds | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.79 | 731.2 | 29.66 | 753.4 | 93.8 | 34.3 | 23 | NW | 2.7 | 1.2 | | | 9 | | | | | Thunder storm | |
| Agra | 29.13 | 739.9 | 29.67 | 753.7 | 98.6 | 37.0 | 23 | SW | | | | | 4 | S | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.67 | 728.2 | 29.68 | 753.8 | 96.5 | 35.8 | 26 | SE | 3.2 | 1.4 | | | 4 | SE | | 0 | 0 | D. clouds | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.30 | 744.2 | 29.66 | 753.3 | 95.1 | 35.1 | 32 | S | 0.3 | 0.1 | | | 7 | | S | 0 | 0 | D. clouds | |
| Allahabad | 29.34 | 745.3 | 29.64 | 752.8 | 99.7 | 37.6 | 25 | Calm | 13 | 5.8 | | | 0 | | | 0 | 0 | Blue sky | |
| Patna | 29.50 | 749.2 | 29.67 | 753.7 | 96 | 35.6 | 27 | W | 1.9 | 0.8 | | | 4 | W | W | 0 | 0 | D. clouds | |
| Hazaribagh | 27.71 | 703.8 | 29.66 | 753.3 | 91.8 | 33.2 | 18 | NW | 6.2 | 2.8 | | | | | | | | Raining | |
| Cuttack | 29.63 | 752.5 | 29.71 | 754.5 | 90.8 | 32.7 | 57 | S | 5.8 | 2.6 | | | | | | 0 | 0 | Blue sky | |
| Calcutta (Alipore) | 29.69 | 754.1 | 29.71 | 754.6 | 85.1 | 29.5 | 76 | S | 10 | 4.5 | | | 2 | | SW | 0 | 0 | D. clouds | |
| Goalpara | 29.35 | 745.6 | 29.74 | 755.4 | 81.8 | 27.7 | 68 | E | 6.5 | 2.9 | | | 1 | W | | 0 | 0 | D. clouds | |
| Chittagong | 29.71 | 754.7 | 29.80 | 757.0 | 86.9 | 30.5 | 69 | W | 3.6 | 1 6 | | | 10 | | | 0 | 0 | Overcast | |
| Sibsagar | 29.50 | 749.3 | 29.84 | 757.8 | 78.1 | 25.6 | 66 | ENE | 2.5 | 1.1 | | | 7 | W | W | 0 | 0 | D. clouds | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.35 | 720.2 | 29.68 | 753.8 | 95 | 35.0 | 25 | NE | 3.1 | 1.4 | | | 2 | E | | 0 | 0 | D. clouds | |

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10 | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.65 | 753.2 | 30.06 | 763.5 | 67.1 | 19.5 | 69 | SW | 1.3 | 0.6 | | | 5 | | | 0.004 | 0.1 | | Prof. Giovanni Codig. |
| Padua | 29.95 | 760.7 | 30.06 | 763.4 | 66.7 | 19.3 | 50 | Calm | 0 | 0 | | | 4 | | | 0 | 0 | | Prof. Dott. Lorenzioni |
| Vicenza | 29.86 | 758.4 | 30.05 | 763.2 | 67.5 | 19.7 | 52 | S | 1.8 | 0.8 | | | 2 | W | | 0.067 | 1.7 | | Conte Alm. Da Schio. |
| Bergamo | 28.77 | 730.7 | 30.07 | 763.7 | 68.4 | 20.2 | 45 | SW | | | 2 | | 3 | | | 0 | 0 | | Prof. Trionfini Carlo. |
| Milan | 29.58 | 751.3 | 30.09 | 764.3 | 71.2 | 21.8 | | SSW | | | 1 | | 8 | W | | 0.028 | 0.7 | | Prof. Schiaparelli. |
| Moncalieri | 29.17 | 740.8 | 30.07 | 763.6 | 65.8 | 18.8 | 61 | SSE | 1.3 | 0.6 | | | 8 | NW | | 0 | 0 | | Prof. P. F. Denza. |
| Mondovi | 28.17 | 715.4 | 30.07 | 763.6 | 63.0 | 17.2 | 58 | N | | | 2 | | 7 | NW | | 0 | 0 | | Prof. D. C. Bruno. |
| Porto Maurizio | 29.91 | 759.8 | 30.13 | 765.4 | 64.2 | 17.9 | 76 | SE | | | 2 | | 8 | W | | 0 | 0 | | Prof. L. Vassallo. |
| Genoa | 29.96 | 761.0 | 30.13 | 765.3 | 63.3 | 17.4 | 67 | SW | 4.3 | 1.9 | | | 2 | SE | | 0 | 0 | | Prof. G. M. Garibaldi. |
| Parma | 29.78 | 756.4 | 30.10 | 764.5 | 69.3 | 20.7 | 43 | NNW | | | 2 | | 6 | | | 0 | 0 | | Prof. P. Pigorini. |
| Florence | 29.84 | 757.8 | 30.09 | 764.2 | 68.0 | 20.0 | 49 | SW | | | 2 | | 4 | | | 0 | 0 | | Cav. F. Meucci. |
| Leghorn | 30.03 | 762.8 | 30.11 | 764.9 | 63.7 | 17.6 | 73 | W | 4.3 | 1.9 | | | 4 | | | 0 | 0 | | Prof. P. Monte. |
| Pesaro | 30.07 | 763.6 | 30.11 | 764.8 | 62.4 | 16.9 | 63 | NE | 6.3 | 2.8 | | | 9 | | | 0 | 0 | | Prof. Luigi Guidi. |
| Urbino | 28.56 | 725.3 | 30.10 | 764.4 | 63.5 | 17.5 | 47 | ENE | | | 2 | | 3 | | | 0 | 0 | | Prof. P. Serpieri. |
| Grosseto | 29.98 | 761.4 | 30.09 | 764.2 | 70.9 | 21.6 | 35 | NNW | | | 4 | | 2 | S | | 0.067 | 1.7 | | Avv. P. Ponticelli. |
| Rome | 29.92 | 760.0 | 30.10 | 764.4 | 70.7 | 21.5 | 48 | W | 9.4 | 4.2 | | | 1 | | | 0 | 0 | | Prof. P. G. S. Ferrar |
| Naples, O. U. | 29.89 | 759.3 | 30.09 | 764.3 | 71.2 | 21.8 | 43 | WNW | | | 2 | | 4 | NE | | 0 | 0 | | Prof. L. Palmieri. |
| Lecce | | | | | 64.9 | 18.3 | 68 | NNW | 17.4 | 7.8 | | | 1 | N | | 0 | 0 | | Prof. C. De Giorgi. |
| Cagliari | 29.91 | 759.6 | 30.10 | 764.5 | 66.2 | 19.0 | 67 | S | | | 2 | | 6 | N | | 0 | 0 | | Prof. A. Pacinotti. |
| Cosenza | 29.18 | 741.2 | 30.06 | 763.4 | 66.6 | 19.2 | 79 | SW | 1.8 | 0.8 | | | 8 | | | 0.020 | 0.5 | | Prof. F. D. Conti. |
| Palermo | 29.81 | 757.1 | 30.06 | 763.5 | 65.8 | 18.8 | 51 | N | 10.5 | 4.7 | | | 1 | | | 0 | 0 | | Prof. G. Cacciatore. |
| Syracuse | 29.95 | 760.6 | 30.02 | 762.5 | 68.5 | 20.3 | 55 | NE | | | 1 | | 6 | NW | | 0 | 0 | | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.55 | 750.5 | 30.10 | 764.6 | 69.1 | 20.6 | 47 | SW | 1.8 | 0.8 | | | 4 | SW | | 0 | 0 | | Prof. F. Brioschi. |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nagasaki | | | | | | | | | | | | | | | | | | | |
| Tokei (Yeddo) | 29.92 | 759.9 | 29.98 | 761.5 | 51.5 | 10.8 | 94 | ENE | 6.3 | 2.8 | | | 10s | | | 0.020 | 0.51 | Raining | The Observatory. |
| Tokei (Yeddo) University | 29.88 | 758.9 | 29.98 | 761.4 | 51.8 | 11.3 | 96 | ENE | 2 | 0.9 | | | 10n | | | | | Light rain | Prof. P. V. Veeder. |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | | | | | | | | | | | | | | | | | | | I. N. Marin, M. D. |
| Córdoba | | | | | | | | | | | | | | | | | | | C. Peña, M. D. |
| Cuernavaca | | | | | 65.3 | 18.5 | 24 | N | 0.9 | 0.4 | | 0 | 0 | | | 0 | 0 | Very hazy | L. Castillo, A. E. |
| Guadalajara | 25.02 | 635.5 | 30.09 | 764.3 | 42.8 | 6.0 | 42 | W | 1.8 | 0.8 | | 0 | 0 | | | 0 | 0 | Very hazy | Prof. L. Perez. |
| Guanajuato | | | | | | | | | | | | | | | | | | | Prof. V. Fernandez |
| Leon | | | | | 58.1 | 14.5 | 32 | NNW | 6.9 | 0.4 | | 0 | 0 | | | 0 | 0 | Hazy | Prof. M. Leal. |
| Mexico | 23.03 | 584.9 | 30.00 | 762.0 | 55.0 | 12.8 | 33 | W | 0.9 | 0.4 | | 0 | 0 | | | 0 | 0 | Hazy | Central Observatory. |
| Orizaba | | | | | | | | | | | | | | | | | | | N. N. |
| Orizaba | | | | | | | | | | | | | | | | | | | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | | | | | 50.5 | 10.3 | 36 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Very clear | M. V. de Leon, M. E. |
| Puebla | 23.28 | 591.2 | 29.97 | 761.3 | 49.8 | 9.9 | 75 | ENE | 0.9 | 0.4 | | 0 | 0 | | | 0 | 0 | Very hazy | Prof. B. Gonzalez. |
| Toluca | | | | | | | | | | | | | | | | | | | Prof. C. Velazquez. |
| Tlacotalpam | 29.83 | 757.8 | 29.82 | 757.4 | 77.9 | 25.5 | 84 | Calm | 0 | 0 | | 7ck | 0 | | | 0 | 0 | Foggy | Prof. F. R. Bayly. |
| San Luis Potosi | | | | | | | | | | | | | | | | | | | G. Barroeta, M. D. |
| Vera-Cruz | 29.81 | 757.1 | 29.84 | 757.8 | 80.6 | 27.0 | 84 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Hazy | Prof. J. Rossell. |
| Zacatecas | | | | | 55.4 | 13.0 | 45 | SW | 0.9 | 0.5 | | 0 | 0 | | | 0 | 0 | Clear | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.26 | 591.0 | 29.99 | 761.7 | 50.7 | 10.4 | 47 | E | 1.6 | 0.7 | | 0 | 0 | | | 0 | 0 | Hazy | P. Spina. [M. M. D. D. |
| Morelia | 23.98 | 609.0 | | | 57.2 | 14.0 | 63 | Calm | 0 | 0 | | 0 | 0 | | | 0 | 0 | Very hazy | M. Tena, F. L. Param. |
| Durango | | | | | | | | | | | | | | | | | | | M. V. de Leon, C. E. |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.98 | 761.5 | 29.98 | 761.5 | 62.6 | 17.0 | | E | | | 4 | | | | | 0 | 0 | | |
| Groningen | | | | | 54.7 | 12.6 | | N | | | 1 | | | | | 0 | 0 | | |
| Helder | 30.03 | 762.7 | 30.03 | 762.7 | 51.3 | 10.7 | | NE | | | 1 | | | | | 0 | 0 | | |
| Hellevoetsluis | 29.98 | 761.6 | 29.98 | 761.6 | 63.7 | 17.6 | 59 | E | | | 2 | | | | | | | | |
| Utrecht | 29.97 | 761.3 | 30.02 | 762.5 | 62.8 | 17.1 | 47 | NE | | | 2 | | 5 | | | 0 | 0 | Cloudy | H. v d Brink. |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 30.02 | 762.5 | 30.08 | 763.9 | 51.8 | 11.0 | 61 | W | 8.7 | 3.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Bróno | 30.06 | 763.5 | 30.10 | 764.5 | 44.6 | 7.0 | 66 | NNW | 9 | 4 | ..... | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.90 | 759.5 | 30.05 | 763.2 | 57.7 | 14.3 | 41 | NE | 4 | 2 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 30.04 | 763.0 | 30.08 | 764.1 | 36.3 | 2.4 | 72 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.39 | 746.5 | 29.58 | 751.4 | 58.8 | 14.9 | 84 | NW | 12.5 | 5.6 | ..... | ..... | 3 | ..... | ..... | 0.118 | 3.0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.92 | 734.5 | 29.93 | 760.2 | 68.0 | 20.0 | 47 | SW | 3.8 | 1.7 | ..... | ..... | 10 | SW | ..... | 0 | 0 | ..... | Dr. A. M. R. dos Santos |
| Funchal, (Madeira) | 29.86 | 758.4 | 29.95 | 760.6 | 69.6 | 20.9 | 72 | W | 8.1 | 3.6 | ..... | ..... | 8 | ..... | ..... | 0.398 | 10.1 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.55 | 750.6 | 29.91 | 759.7 | 63.7 | 17.6 | 96 | SW | 12.5 | 5.6 | ..... | ..... | 10 | ..... | ..... | 0.130 | 3.3 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 29.56 | 750.8 | 29.63 | 752.6 | 66.2 | 19.0 | 63 | WNW | 15.0 | 6.7 | ..... | ..... | 4 | ..... | ..... | 0.083 | 2.1 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.94 | 760.5 | 29.95 | 760.7 | 81.5 | 27.5 | ..... | S | ..... | ..... | 5 | ..... | 2 | ..... | S | 2 | ..... ..... | Blue sky..... | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Rio Douro, S. 25° 08′, E. 32° 37′ | ..... | ..... | 30.14 | 765.6 | 80.6 | 27.0 | ..... | Calm | ..... | ..... | 0 | ..... | 9 | ..... | SW | 0 | ..... | Showery..... | J. T. d'Oliveria, Com'd't. |
| Sado, N. 14° 53′, W. 23° 23′ | 30.06* | 763.5* | 30.07* | 763.8* | 76.1 | 24.5 | ..... | NNE | ..... | ..... | 5 | ..... | 1 | ..... ..... | Calm | 4 | NNE | D. clouds..... | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, S. 12° 06′ 5″, E. 13° 06′ 8″ | 29.77 | 756.1 | 29.77 | 756.2 | ..... | ..... | ..... | WSW | ..... | ..... | 1 | ..... | 2 | ..... | WSW | 2 | W | D. clouds..... | F. Texeira da Silva, Com'd't. |
| Tejo, N. 22° 10′ E. 113° 32′ | ..... ..... | ..... | 29.82 | 757.4 | 84.2 | 29 | ..... | S | ..... | ..... | 3 | ..... | 8n | ..... | S | 1 | S | ..... | F. J. Ferreira, dos Amas, Com'd't |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.63 | 752.5 | 30.04 | 763.1 | 61.7 | 16.5 | 46 | W | 9 | 4 | ..... | ..... | 7ks;k | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.62 | 752.4 | 30.04 | 763.1 | 50.0 | 10.0 | 28 | NW | 2 | 1 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Dorpat | 29.84 | 757.8 | 30.09 | 764.2 | 39.7 | 4.3 | 46 | NNW | 9 | 4 | ..... | ..... | 10k | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weilbrauch. |
| St. Petersburg | 29.98 | 761.6 | 30.00 | 762.0 | 39.6 | 4.2 | 37 | N | 11 | 5 | ..... | ..... | 6n;ks | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Kuopio | 29.69 | 754.1 | 30.02 | 762.5 | 37.4 | 3.0 | 53 | WSW | 13 | 6 | ..... | ..... | 0 | ..... | ..... | Blank | Blank | ..... | Ch. Forsten. |
| Kieff | 29.21 | 742.0 | 29.85 | 758.1 | 52.2 | 11.2 | 42 | N | 18 | 8 | ..... | ..... | 6k;ks | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.74 | 755.3 | 29.81 | 757.1 | 61.0 | 16.1 | 41 | N | 18 | 8 | ..... | ..... | 7k | ..... | ..... | ..... | ..... | ..... | Kurdukof. |
| Kertch | 29.63 | 752.6 | 29.65 | 753.1 | 51.1 | 10.6 | 97 | NW | 7 | 3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Lagorio. |
| Moscow | 29.16 | 740.7 | 29.72 | 754.8 | 41.7 | 5.4 | 49 | SE | 9 | 4 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.41 | 747.0 | 29.61 | 752.1 | 59.2 | 15.1 | 63 | NE | 4 | 2 | ..... | ..... | 10n | ..... | ..... | Blank | Blank | Light clouds | Meteorological Obs. |
| Archangel | 29.79 | 756.7 | 29.81 | 757.2 | 28.9 | — 1.7 | 80 | WNW | 4 | 2 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.27 | 718.0 | 29.63 | 752.6 | 68.9 | 20.5 | 65 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 29.71 | 754.5 | 29.62 | 752.4 | 64.2 | 17.9 | 49 | NE | 4 | 2 | ..... | ..... | 10s;n | ..... | ..... | Blank | Blank | ..... | Sebastianof. |
| Krotkowo* | 29.34 | 745.3 | 29.82 | 757.3 | 46.9 | 8.3 | 82 | NE | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.41 | 747.1 | 29.69 | 754.1 | 40.8 | 4.9 | 59 | E | 4 | 2 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischef. |
| Ekaterinburg | 28.88 | 733.5 | 29.85 | 758.1 | 36.1 | 2.3 | 87 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.56 | 725.3 | 30.23 | 767.7 | 69.4 | 20.8 | 51 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.51 | 749.5 | 30.02 | 762.5 | 60.3 | 15.7 | 21 | N | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.80 | 758.5 | 30.19 | 766.9 | 42.6 | 5.9 | 58 | S | 2 | 1 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 29.43 | 747.6 | 29.58 | 751.2 | 74.8 | 23.8 | 42 | Calm | 0 | 0 | ..... | ..... | 4cs | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.51 | 698.8 | 29.61 | 752.0 | 32.7 | 0.4 | 49 | NW | 9 | 4 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.81 | 757.2 | 29.91 | 759.7 | 38.7 | 3.7 | 90 | SE | 2 | 1 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Foggy ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 33.8 | 1.0 | 85 | E | 2 | 1 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.90 | 759.4 | 30.00 | 762.1 | 68.0 | 20 | 57 | SE | 3.5 | 1.56 | ..... | 0 | 1c | ..... | ..... | 0 | 0 | Misty ..... | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.74 | 755.5 | 29.80 | 756.9 | 72.3 | 22.4 | 68 | SE | 2.8 | 1.25 | ..... | 2 | 8 | SW | ..... | 0 | 0 | Covered..... | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.95 | 684.5 | ..... | ..... | 69.8 | 21.0 | 70 | S | 5.9 | 2.64 | ..... | ..... | 8 | ..... | ..... | 0.039 | 1.0 | Cloudy..... | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.71 | 703.8 | 29.84 | 758.0 | 74.8 | 23.8 | 49 | SW | 4.5 | 2.00 | ..... | 0 | 10 | ..... | ..... | 0 | 0 | Covered..... | The Staff. |
| Murcia, Met. Obs'y | 29.81 | 757.1 | 29.95 | 760.8 | 77.0 | 25.5 | 45 | NE | 2.2 | 0.97 | ..... | 4 | 5 | E | ..... | Inap. | Inap. | Misty..... | Olayo Diaz, Director. |
| Santiago, Met. Obs'y | 28.88 | 733.6 | 29.77 | 756.1 | 58.5 | 14.7 | 95 | SSE | 8.7 | 3.89 | ..... | ..... | 10 | ..... | ..... ..... | 0.287 | 7.3 | Raining..... | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I. | 29.71 | 754.6 | 29.77 | 756.3 | 76.1 | 24.5 | 88 | SE | 7.2 | 3.2 | ..... | 10pc | 9n | ..... | ..... | 0.047 | 1.2 | Raining..... | Benito Vines, S. J. |
| San Fernando, Naval Obs'y | 29.83 | 757.7 | 29.93 | 760.1 | 80.4 | 26.9 | 30 | ESE | 16.7 | 7.4 | ..... | 0 | 10 | ..... | SE | 0.007 | 0.2 | ..... | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.86 | 758.3 | 29.95 | 760.6 | 80.6 | 27.0 | 84 | SE | 4.6 | 2.05 | ..... | 2cs | 1k | SE | SE | 0 | 0 | Clear ..... | Leonardo de Tejeda, Chief of Engineers. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.



Furnished by the cooperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATION. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10. | Clouds. Amount. Up'er 0–10. | Clouds. Amount. Low'r 0–10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haparanda | 30.05 | 763.3 | 30.09 | 764.3 | 36.7 | 2.6 | ..... | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 30.05 | 763.2 | 30.10 | 764.5 | 38.5 | 3.6 | 73 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.04 | 763.1 | 30.10 | 764 4 | 47.1 | 8.4 | 45 | E | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.90 | 759.4 | 30.08 | 763.9 | 51.1 | 10.6 | 29 | WSW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 30.01 | 762.3 | 30.07 | 763.8 | 52.5 | 11.4 | 35 | SE | ..... | ..... | 6 | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 30.00 | 761.9 | 30.07 | 763.8 | 51.8 | 11.0 | 32 | NNW | 7.6 | 3.4 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.59 | 726.1 | 30.00 | 762.1 | 57.2 | 14.0 | 65 | NNE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0 | 0 | Covered..... | The Observatory. |
| Zurich | 28.89 | 721.0 | 29.98 | 761.5 | 67.1 | 19.5 | 51 | W | ..... | ..... | 1 | ..... | 6 | ..... | ..... | 0.394 | 10.0 | Bright..... | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +1.6 mm.; Thermometer, 0.0 cent.; Relative Humidity, +8 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 29.94 | 760.4 | 57.6 | 14.2 | 66 | N | 10 | 4.5 | ..... | ..... | 7 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Valona | ..... | ..... | 30.04 | 763.0 | 66.6 | 19.2 | ..... | NW | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | B. Stefanidès. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Clear..... | A. Bertrand. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.73 | 755.1 | 29.84 | 758.0 | 71.4 | 21.9 | 64 | SW | ..... | ..... | 4 | ..... | 7ks | ..... | SW | 0 | 0 | D. clouds..... | Imperial Observatory. Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B | 30.02 | 762.5 | 30.09 | 764.3 | 44.0 | 6.7 | 89 | N | 5 | 2.2 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Overcast..... | Hon. J. Ferguson. |
| Brockville, Ontario | 29.47 | 748.5 | 29.77 | 756.1 | 54 | 12.2 | ..... | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | NE | 0.19 | 4.8 | Light rain... | W. R. Rigg. |
| *Chatham, N B | 29.99 | 761.7 | 30.05 | 763.3 | 47 | 8.3 | 96 | NE | 6 | 2.7 | ..... | ..... | Fog | ..... | Calm | Inap. | Inap. | Foggy ..... | G. A. Blair. |
| Charlottetown, P. E. Island. | 30.01 | 762.2 | 30.05 | 763.3 | 48 | 8.9 | 94 | SE | 4 | 1.8 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy ..... | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.56 | 750.8 | 29.75 | 755.6 | 54.7 | 12.6 | 91 | E | ..... | ..... | 4 | ..... | 10s | ..... | ..... | 0.182 | 4.62 | Overcast..... | James Smith, M. A. |
| Dalhousie, N. B | 30.08 | 764.0 | 30.12 | 765.0 | 45 | 7.2 | 100 | W | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | Drizzling..... | H. A. Johnson. |
| Esquimault, B. C | 30.12 | 765.0 | 30.17 | 766.3 | 44.3 | 6.8 | 100 | Calm | 0 | 0 | ..... | 7k | 0 | ..... | ..... | 0.02 | 0.5 | Fair ..... | W. H. Revis. |
| *Father Point, Quebec | 30.10 | 764.5 | 30.13 | 765.3 | 40 | 4.4 | 69 | E | 32 | 14.3 | ..... | ..... | 10n | ..... | Calm | 0.04 | 1.0 | Light rain.... | J. McWilliams. |
| Fredericton, N. B | 29.98 | 761.5 | 30.04 | 763.0 | 54.9 | 12.7 | 82 | E | 4 | 1.8 | ..... | ..... | 10s | ..... | ..... | 0.01 | 0.3 | Cloudy ..... | Prof. Harrison. |
| *Fort Garry Manitoba | 28.94 | 735.1 | 29.76 | 755.9 | 48 | 8.9 | 92 | S | 8 | 3.6 | ..... | 5c | 2ks | SW | SW | 0.170 | 4.32 | Fair..... | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.58 | 725.9 | 29.66 | 753.4 | 54 | 12.2 | 93 | N | ..... | ..... | 1 | ..... | 10n | ..... | ..... | 0.76 | 19.3 | Cloudy..... | James Grant. |
| *Halifax, N. S | 29.88 | 758.9 | 30.01 | 762.2 | 46 | 7.8 | 97 | E | 4 | 1.8 | ..... | ..... | Fog | ..... | ..... | 0.010 | 0.25 | Foggy..... | F. Allison, M. A. |
| Hamilton, Ontario | 29.32 | 744.7 | 29.69 | 754.1 | 47.7 | 8.7 | 91 | E | ..... | ..... | 1 | 10cs | ..... | ..... | ..... | 0.45 | 11.4 | Cloudy..... | Geo. Dickson, M. A. |
| Heart's Content, N. F | 30.03 | 762.7 | 30.06 | 763.5 | 49 | 9.4 | 78 | W | ..... | ..... | 0 | 2ks | ..... | ..... | ..... | 0 | 0 | Fine..... | E. Weedon. |
| *Kingston, Ontario | 29.40 | 746.7 | 29.73 | 755.1 | 56 | 13.3 | 88 | NE | 11 | 4.9 | ..... | ..... | 10n | ..... | NE | 0.10 | 2.5 | Light rain.... | S. Woods, M. A. |
| Little Glace Bay, N. S | 30.03 | 762.7 | 30.07 | 763.8 | 50.2 | 10.1 | ..... | S | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Overcast..... | C. H. Rigby. |
| *Montreal, Quebec | 29.63 | 752.6 | 29.82 | 757.4 | 57 | 13.9 | 87 | E | 16 | 7.2 | ..... | ..... | 10ks | ..... | E | 0.33 | 8.4 | Cloudy..... | C. H. McLeod, C. E. |
| *Parry Sound, Ontario | 29.09 | 738.9 | 29.77 | 756.1 | 56 | 13.3 | 84 | N | 10 | 4.5 | ..... | 2k | 5ks | NE | NE | 0 | 0 | Fair..... | Rev. R. Mosley. |
| Peterboro, Ontario | 28.98 | 736.1 | 29.71 | 754.6 | 58.2 | 14.6 | 88 | E | ..... | ..... | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Misty..... | J. F. Jeffers, B. A. |
| Port Dover, Ontario | 28.95 | 735.3 | 29.64 | 752.8 | 51 | 10.6 | 100 | NE | 12 | 5.4 | ..... | ..... | 10n | ..... | E | 0.30 | 7.6 | Threatening | H. Morgan. |
| Port Hastings, N. S | 30.02 | 762.5 | 30.07 | 763.8 | 39.8 | 4.3 | ..... | S | 3 | 1.3 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Foggy..... | Peter Grant. |
| Port Stanley, Ontario | 29.02 | 737.1 | 29.65 | 753.1 | 55 | 12.8 | 91 | N | 8 | 3.6 | ..... | ..... | 10n | ..... | NE | 1.34 | 34.0 | Cloudy..... | M. Payne. |
| *Quebec, Quebec | 29.66 | 753.4 | 29.98 | 761.5 | 46 | 7 8 | 92 | NE | ..... | ..... | 8 | ..... | 10n | ..... | NE | 0.03 | 0.8 | Threatening | Capt. Ashe, R. N. |
| *Rockliffe, Ontario | 29.36 | 745.7 | 29.81 | 757.2 | 56 | 13.3 | 90 | NE | 10 | 4.5 | ..... | ..... | 10s | ..... | E | 0.07 | 1.8 | Light rain... | W. H. McIntyre. |
| St. Andrews, N. B | 29.94 | 760.5 | 29.99 | 761.7 | 49 | 9.4 | 92 | E | 1 | 0.4 | ..... | ..... | 10n | ..... | ..... | 0 | 0 | Cloudy..... | Dr. Gove. |
| St. John, N. B | 29.86 | 758.4 | 30.03 | 762.7 | 50 | 10.0 | 89 | Calm | 0 | 0 | ..... | ..... | 10ks | ..... | ..... | 0.120 | 3.05 | Overcast..... | G. Murdock, C. E. |
| *Saugeen, Ontario | 29.05 | 737.9 | 29.75 | 755.6 | 54 | 12.2 | 87 | N | 13 | 5.8 | ..... | ..... | 10ks | ..... | N | Inap. | Inap. | Cloudy ..... | K. Stewart. |
| Stayner, Ontario | 28.95 | 735.3 | 29.72 | 754.9 | 55 | 12.8 | 97 | NW | 5 | 2.2 | ..... | ..... | 10n | ..... | N | 0.15 | 3.8 | Cloudy..... | R. J. Cole. |
| Stratford, Ontario | 28.41 | 721.6 | 29.66 | 753.4 | 53.2 | 11.8 | 97 | NE | 7 | 3.1 | ..... | ..... | 10n | ..... | ..... | 0.533 | 13.59 | Drizzling..... | C. J. MacGregor, M. A. |
| *Sydney, C. B | 30.08 | 764.0 | 30.11 | 764.8 | 50 | 10.0 | 87 | W | 5 | 2.2 | ..... | ..... | 10n | ..... | W | 0 | 0 | Cloudy..... | T. C. Hill. |
| *Toronto, Ontario | 29.32 | 744.7 | 29.70 | 754.4 | 56 | 13.3 | 97 | NE | 11 | 4.9 | ..... | ..... | 10n | ..... | E | 0.23 | 5.8 | Light rain... | Magnetic Observatory. |
| Windsor, N. S | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | Prof. John E. Oram. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | ..... | ..... | ..... | ..... | J. Montgomery. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 52.0 | 11.1 | 79 | W | ..... | ..... | ..... | 4ks | 4s | ..... | ..... | 0 | 0 | Fair..... | John Delany. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.50 | 749.3 | 29.72 | 754.9 | 58 | 14.4 | 76 | SE | 5 | 2.2 | ..... | ..... | 10s | ..... | S | 1.29 | 32.8 | Cloudy | |
| Alpena, Michigan | 29.18 | 741.2 | 29.81 | 757.2 | 52 | 11.1 | 53 | N | 10 | 4.5 | ..... | 5ck | 0 | N | ..... | 0 | 0 | Fair | |
| Atlantic City, New Jersey | 29.65 | 753.1 | 29.67 | 753.6 | 54 | 12.2 | 100 | SE | 4 | 1.8 | ..... | ..... | 10s;fg | ..... | Calm | 0.12 | 3.0 | Threatening | |
| Augusta, Georgia | 29.69 | 754.1 | 29.87 | 758.7 | 66 | 18.9 | 49 | NW | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Baltimore, Maryland | 29.62 | 752.3 | 29.66 | 753.4 | 59 | 15.0 | 82 | W | 2 | 0.9 | ..... | 2k | 8s | Calm | S | 0.55 | 14.0 | Cloudy | |
| Barnegat, New Jersey | 29.66 | 753.4 | 29.68 | 753.9 | 52 | 11.1 | 100 | E | 6 | 2.7 | ..... | ..... | Fog | ..... | E | 0.02 | 0.5 | Dense fog | |
| Bismarck, Dakota | 27.94 | 709.7 | 29.80 | 756.9 | 54 | 12.2 | 67 | SE | 6 | 2.7 | ..... | 0 | 1s | ..... | SE | Inap. | Inap. | Clear | |
| Boise City, Idaho | 27.25 | 692.1 | 30.13 | 765.3 | 46 | 7.8 | 68 | SW | 12 | 5.4 | ..... | 5k | 0 | W | ..... | Inap. | Inap. | Fair | |
| Boston, Massachusetts | 29.66 | 753.4 | 29.81 | 757.2 | 50 | 10.0 | 100 | E | 3 | 1.3 | ..... | ..... | Fog | ..... | ..... | 0.75 | 19.1 | Dense fog | |
| Brackettville, Texas | 28.76 | 730.5 | 29.77 | 756.1 | 59 | 15.0 | 82 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.02 | 0.5 | Clear | |
| Breckenridge, Minnesota | 28.83 | 732.3 | 29.81 | 757.2 | 49 | 9.4 | 93 | S | 4 | 1.8 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair | |
| Brownsville, Texas | 29.81 | 757.2 | 29.88 | 758.9 | 65 | 18.3 | 90 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.69 | 17.5 | Clear | |
| Buffalo, New York | 28.94 | 735.1 | 29.62 | 752.3 | 55.5 | 13.1 | 97 | NE | 8 | 3.6 | ..... | ..... | 10n | ..... | Calm | 0.36 | 9.1 | Light rain | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 63 | 17.2 | 24 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.49 | 749.0 | 29.75 | 755.6 | 55 | 12.8 | 87 | N | 7 | 3.1 | ..... | ..... | 10s | ..... | SE | 0.47 | 11.9 | Cloudy | |
| Cairo, Illinois | 29.56 | 750.8 | 29.95 | 760.7 | 60 | 15.6 | 71 | NW | 1 | 0.4 | ..... | 1c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Camp Grant, Arizona | 25.15 | 638.8 | 29.95 | 760.7 | 54 | 12.2 | 38 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | 26.79 | 680.4 | 30.28 | 769.1 | 49 | 9.4 | 71 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Campo, California | 27.36 | 694.9 | 29.93 | 760.2 | 46 | 7.8 | 92 | E | 2 | 0.9 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Cape Hatteras, N. Carolina | 29.74 | 755.4 | 29.74 | 755.4 | 66 | 18.9 | 84 | SW | 12 | 5.4 | ..... | 2k | 0 | SW | ..... | 0.50 | 12.7 | Clear | |
| Cape Henry, Virginia | 29.68 | 753.9 | 29.71 | 754.6 | 63 | 17.2 | 78 | SW | 5 | 2.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Lookout, N. Carolina | 29.74 | 755.4 | 29.76 | 755.9 | 65 | 18.3 | 63 | NW | 6 | 2.7 | ..... | 1k | 0 | Calm | ..... | 0 | 0 | Clear | |
| Cape May, New Jersey | 29.66 | 753.4 | 29.69 | 754.1 | 55 | 12.8 | 87 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Charleston, South Carolina | 29.79 | 756.7 | 29.86 | 758.4 | 60 | 15.6 | 60 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Fair | |
| Cheyenne, Wyoming | 23.99 | 609.3 | 29.93 | 760.2 | 42 | 5.6 | 58 | W | 4 | 1.8 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Chicago, Illinois | 29.19 | 741.4 | 29.88 | 758.9 | 50 | 10.0 | 65 | NE | 10 | 4.5 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Cincinnati Ohio | 29.09 | 738.9 | 29.72 | 754.9 | 57 | 13.9 | 75 | N | 8 | 3.6 | ..... | 7k | 2ks | N | N | 0.17 | 4.3 | Cloudy | |
| Cleveland, Ohio | 28.93 | 734.8 | 29.63 | 752.6 | 50 | 10.0 | 100 | N | 10 | 4.5 | ..... | ..... | 10n | Calm | Calm | 0.54 | 13.7 | Heavy rain | |
| Concho, Texas | 28.05 | 712.5 | 29.71 | 754.6 | 56 | 13.3 | 87 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0.58 | 14.7 | Clear | |
| Corsicana, Texas | 29.46 | 748.3 | 29.92 | 760.0 | 60 | 15.6 | 82 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Davenport, Iowa | 29.33 | 745.0 | 29.96 | 761.0 | 54 | 12.2 | 80 | Calm | 0 | 0 | ..... | 5k | Sm'e | Calm | Calm | 0 | 0 | Fair | |
| Deadwood, Dakota | 25.25 | 641.3 | ..... | ..... | 39 | 3.9 | 64 | Calm | 0 | 0 | ..... | 2c | 0 | NW | ..... | 0 | 0 | Clear | |
| Denison, Texas | 29.14 | 740.1 | 29.93 | 760.2 | 61 | 16.1 | 82 | SE | 4 | 1.8 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Denver, Colorado | 24.74 | 628.4 | 29.96 | 761.0 | 43 | 6.1 | 59 | SE | 8 | 3.6 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Cloudy | |
| Detroit, Michigan | 29.03 | 737.3 | 29.68 | 753.9 | 52 | 11.1 | 79 | N | 11 | 4.9 | ..... | ..... | 10s | ..... | Calm | 6.24 | 6.1 | Cloudy | |
| Dodge City, Kansas | 27.42 | 696.5 | 29.71 | 754.6 | 49 | 9.4 | 93 | N | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.24 | 742.7 | 29.93 | 760.0 | 49 | 9.4 | 78 | Calm | 0 | 0 | ..... | 5k | Sm'e | SE | Calm | 0 | 0 | Clear | |
| Duluth, Minnesota | 29.24 | 742.7 | 29.92 | 760.0 | 43 | 6.1 | 83 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eagle Pass, Texas | 29.20 | 741.7 | 29.94 | 760.5 | 60 | 15.6 | 95 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0.15 | 3.8 | Clear | |
| Eastport, Maine | 29.91 | 759.7 | 29.98 | 761.5 | 44 | 6.7 | 100 | NE | 19 | 8.5 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Foggy | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 67 | 19.4 | 38 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 28.89 | 733.8 | 29.58 | 751.3 | 58 | 14.4 | 88 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0.75 | 19.1 | Light rain | |
| Escanaba, Michigan | 29.27 | 743.4 | 29.93 | 760.2 | 45 | 7.2 | 68 | N | 8 | 3.6 | ..... | 0 | 10n | ..... | ..... | 0 | 0 | Clear | |
| Florence, Arizona | 28.24 | 717.3 | 29.84 | 757.9 | 59 | 15.0 | 59 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Bayard, New Mexico | ..... | ..... | ..... | ..... | ..... | ..... | 45 | NW | 2 | 0.9 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Craig, New Mexico | 25.51 | 647.9 | 29.57 | 751.1 | 44 | 6.7 | 48 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Davis, Texas | 25.20 | 640.1 | 30.16 | 766.1 | 62 | 16.7 | 88 | N | 4 | 1.8 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.41 | 747.0 | 29.94 | 760.5 | 58 | 14.4 | 82 | NW | 4 | 1.8 | ..... | 0 | 10n | ..... | N | 0.08 | 2.0 | Light rain | |
| Fort Griffin, Texas | 28.68 | 728.5 | 29.93 | 760.2 | 58 | 14.4 | 82 | S | 0.5 | 0.2 | ..... | ..... | 2s | ..... | Calm | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.79 | 756.7 | 29.83 | 757.7 | 22 | — 5.6 | 100 | N | 7 | 3.1 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| Fort Sill, Indian Territory | 28.76 | 730.5 | 29.86 | 758.4 | 58 | 14.4 | 93 | SE | 14 | 6.3 | ..... | ..... | 10s | ..... | N | 0.02 | 0.5 | Cloudy | |
| Galveston, Texas | 29.82 | 757.4 | 29.86 | 758.4 | 70 | 21.1 | 66 | NE | 6 | 2.7 | ..... | ..... | 10s | ..... | E | 0 | 0 | Cloudy | |
| Grand Haven, Michigan | 29.21 | 741.9 | 29.84 | 757.9 | 55 | 12.8 | 68 | NW | 4 | 1.8 | ..... | 8cs | 0 | NW | ..... | 0.03 | 0.8 | Fair | |
| Indianapolis, Indiana | 29.02 | 737.1 | 29.78 | 756.4 | 55 | 12.8 | 81 | SE | 4 | 1.8 | ..... | 2ck | 5s | N | N | 0.13 | 3.3 | Clearing | |
| Indianola, Texas | 29.86 | 758.4 | 29.89 | 759.2 | 69 | 20.6 | 80 | Calm | 0 | 0 | ..... | 10k | 0 | Calm | ..... | 0.72 | 18.3 | Cloudy | |
| Jacksboro, Texas | 29.80 | 731.5 | 29.91 | 759.7 | 60 | 15.6 | 61 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 29.84 | 757.9 | 29.87 | 758.7 | 65 | 18.3 | 49 | NW | 1 | 0.4 | ..... | 5k | 0 | W | ..... | 0 | 0 | Fair | |
| Keokuk, Iowa | 29.31 | 744.5 | 29.91 | 759.7 | 59 | 15.0 | 76 | SE | 9 | 4.0 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Key West, Florida | 29.76 | 755.9 | 29.79 | 756.7 | 76 | 24.4 | 86 | W | 3 | 1.3 | ..... | ..... | 10n | ..... | SE | 0.11 | 2.8 | Light rain | |
| Kittyhawk, North Carolina | 29.72 | 754.9 | 29.74 | 755.4 | 60 | 15.6 | 94 | SW | 2 | 0.9 | ..... | 0 | 8ks | ..... | W | 0 | 0 | Cloudy | |
| Knoxville, Tennessee | 28.87 | 733.3 | 29.87 | 758.7 | 49 | 9.4 | 85 | S | 4 | 1.8 | ..... | 9ck | 0 | N | ..... | 0 | 0 | Cloudy | |
| La Crosse, Wisconsin | 29.18 | 741.2 | 29.91 | 759.7 | 51 | 10.6 | 79 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Mesilla, New Mexico | 29.04 | 661.4 | 30.19 | 766.8 | 45 | 7.2 | 60 | N | 12 | 5.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.46 | 748.3 | 29.80 | 756.9 | 62 | 16.7 | 83 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | N | 0.42 | 10.7 | Cloudy | |
| Leavenworth, Kansas | 29.10 | 739.1 | 29.93 | 760.2 | 55 | 12.8 | 81 | N | 1 | 0.4 | ..... | 2ck | Fog | N | E | 0 | 0 | Fair | |
| Los Angeles, California | 29.55 | 750.6 | 29.89 | 759.2 | 53 | 11.7 | 80 | W | 6 | 2.7 | ..... | 2c | 1s | SW | Calm | 0 | 0 | Fair | |
| Louisville, Kentucky | 29.25 | 742.9 | 29.80 | 756.9 | 55 | 12.8 | 81 | S | 2 | 0.9 | ..... | ..... | 10s | ..... | NW | Inap. | Inap. | Cloudy | |
| Lynchburg, Virginia | 29.00 | 736.6 | 29.67 | 753.6 | 55 | 12.8 | 68 | NW | 4 | 1.8 | ..... | 0 | 8ks | ..... | Calm | 0.04 | 1.0 | Cloudy | |
| Marquette, Michigan | 29.23 | 742.4 | 29.93 | 760.2 | 47 | 8.3 | 70 | NW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Mason, Texas | 28.35 | 720.1 | 30.10 | 764.5 | 56 | 13.3 | 87 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.67 | 753.6 | 29.98 | 761.5 | 59 | 15.0 | 81 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 1.52 | 38.6 | Clear | |
| Milwaukee, Wisconsin | 29.18 | 741.2 | 29.90 | 759.4 | 53 | 11.7 | 67 | N | 7 | 3.1 | ..... | ..... | Fog | ..... | Calm | 0 | 0 | Clear | |
| Mobile, Alabama | 29.89 | 759.2 | 29.93 | 760.2 | 63 | 17.2 | 70 | N | 2 | 0.9 | ..... | Haze | 5s | ..... | ..... | Inap. | Inap. | Cloudy | |
| Montgomery, Alabama | 29.70 | 754.4 | 29.94 | 760.5 | 56 | 13.3 | 74 | N | 2 | 0.9 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Morgantown, West Virginia | 28.60 | 726.4 | 29.62 | 752.3 | 54 | 12.2 | 87 | S | 4 | 1.8 | ..... | ..... | 10s | ..... | S | 0.24 | 6.1 | Threatening | |
| Mt. Washington, N. H. | 23.63 | 600.2 | 29.99 | 761.7 | 36 | 2.2 | 100 | E | 60 | 26.8 | ..... | ..... | 10n | ..... | E | 1.72 | 43.7 | Heavy rain | |
| Nashville, Tennessee | 29.36 | 745.7 | 29.89 | 759.2 | 54 | 12.2 | 80 | W | 5 | 2.2 | ..... | Haze | 0 | Calm | ..... | Inap. | Inap. | Hazy | |
| New Haven, Connecticut | 29.63 | 752.6 | 29.74 | 755.4 | 53 | 11.7 | 96 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | ..... | 1.67 | 42.4 | Cloudy | |
| New London, Connecticut | 29.71 | 754.6 | 29.76 | 755.9 | 53 | 11.7 | 93 | NE | 4 | 1.8 | ..... | ..... | 10s;fg | ..... | Calm | 0.34 | 8.6 | Dense fog | |
| New Orleans, Louisiana | 29.82 | 757.4 | 29.88 | 758.9 | 70 | 21.1 | 61 | N | 12 | 5.4 | ..... | 8ck | 0 | N | ..... | 6 | 0 | Fair | |
| Newport, Rhode Island | 29.73 | 755.1 | 29.78 | 756.4 | 53 | 11.7 | 100 | E | 13 | 5.8 | ..... | ..... | Fog | ..... | ..... | 0.44 | 11.2 | Foggy | |
| New York, New York | 29.55 | 750.6 | 29.73 | 755.1 | 52 | 11.1 | 100 | NE | 12 | 5.4 | ..... | ..... | Fog | ..... | Calm | 0.06 | 1.5 | Foggy | |
| Norfolk, Virginia | 29.66 | 753.4 | 29.72 | 754.9 | 62 | 16.7 | 72 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.32 | 8.1 | Clear | |
| North Platte, Nebraska | 27.04 | 686.8 | 29.61 | 752.1 | 45 | 7.2 | 76 | S | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.15 | 3.8 | Clear | |
| Olympia, Washington Ter. | 30.16 | 766.1 | 30.20 | 767.1 | 42 | 5.6 | 91 | SW | 5 | 2.2 | ..... | ..... | 7n | ..... | SW | 0.48 | 12.2 | Light rain | |
| Omaha, Nebraska | 28.84 | 732.5 | 29.83 | 759.2 | 57 | 13.9 | 69 | S | 2 | 0.9 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Clear | |
| Oswego, New York | 29.38 | 746.2 | 29.69 | 754.1 | 57 | 13.9 | 87 | E | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.38 | 9.7 | Light rain | |
| Pembina, Dakota | 28.93 | 734.8 | 29.74 | 755.4 | 50 | 10.0 | 82 | S | 8 | 3.6 | ..... | 8c | 0 | S | ..... | 0 | 0 | Fair | |
| Philadelphia, Pennsylvania | 29.64 | 752.8 | 29.69 | 754.1 | 56 | 13.3 | 93 | E | 5 | 2.2 | ..... | ..... | 10n;fg | ..... | E;Calm | 0.26 | 6.6 | Light rain | |
| Phœnix, Arizona | 28.82 | 732.0 | 30.61 | 777.5 | 58 | 14.4 | 58 | SW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.78 | 451.6 | 29.99 | 761.7 | 22 | — 5.6 | 57 | N | 35 | 15.6 | ..... | ..... | 0 | ..... | ..... | 0.10 | 2.5 | Clear | |
| Pioche, Nevada | 24.06 | 611.1 | 29.83 | 757.7 | 42 | 6.1 | 51 | W | 2 | 0.9 | ..... | 2k | 0 | N | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 28.81 | 731.8 | 29.59 | 751.6 | 54 | 12.2 | 93 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0.20 | 5.1 | Cloudy | |
| Port Huron, Michigan | 29.02 | 737.1 | 29.67 | 753.6 | 47 | 8.3 | 100 | W | 20 | 8.9 | ..... | ..... | 10s | ..... | Calm | 0.61 | 15.5 | Light rain | |
| Portland, Maine | 29.82 | 757.4 | 29.87 | 758.7 | 46 | 7.8 | 100 | E | 6 | 2.7 | ..... | ..... | 10n | ..... | N | 0.61 | 15.5 | Light rain | |
| Portland, Oregon | 30.25 | 768.3 | 30.36 | 771.1 | 45 | 7.2 | 84 | SE | 4 | 1.8 | ..... | ..... | 10n | ..... | Calm | 0.61 | 15.5 | Light rain | |
| Prescott, Arizona | 24.78 | 629.4 | 30.14 | 765.5 | 40 | 4.4 | 73 | NW | 1 | 0.4 | ..... | ..... | 5ks | ..... | SW | 0.12 | 3.0 | Cloudy | |
| Punta Rassa, Florida | 29.83 | 757.7 | 29.84 | 757.9 | 71 | 21.7 | 71 | NE | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| | | | | | | | | | | | | | 10s | | Calm | 0 | 0 | Cloudy | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er. 0—10. | CLOUDS. Amount. Low'r. 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Red Bluff, California** | 29.74 | 755.4 | 30.10 | 764.5 | 53 | 11.7 | 54 | NW | 8 | 3.6 | .. ..... | 1k | 0 | Calm | ..... | 0 | 0 | Clear ..... | |
| **Rochester, New York** | 29.05 | 737.9 | 29.64 | 752.8 | 54 | 12.2 | 100 | E | 8 | 3.6 | ..... | ..... | 10n;fg | ..... | Calm | 0.17 | 4.3 | Light rain... | |
| **Roseburg, Oregon** | 29.80 | 756.9 | 30.39 | 771.9 | 41 | 5.0 | 96 | Calm | 0 | 0 | ..... | 5k | 2ks | NW | NW | 0.02 | 0.5 | Cloudy. ..... | |
| **Sacramento, California** | 29.95 | 760.7 | 30.03 | 762.7 | 54 | 12.2 | 87 | S | 2 | 0.9 | ..... | 5c | 0 | S | ... ..... | 0 | 0 | Fair ..... | |
| **St. Louis, Missouri** | 29.37 | 746.0 | 29.94 | 760.5 | 56 | 13.3 | 81 | NE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear..... | |
| **St. Marks, Florida** | 29.88 | 758.9 | 29.89 | 759.2 | 61 | 16.1 | 70 | N | 8 | 3.6 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair ..... | |
| **St. Paul, Minnesota** | 29.02 | 737.1 | 29.83 | 757.7 | 50 | 10.0 | 78 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ... ..... | 0 | 0 | Clear..... | |
| **Salt Lake City, Utah** | 25.59 | 650.0 | 29.92 | 760.0 | 51 | 10.6 | 46 | E | 4 | 1.8 | ..... | 5c | 0 | W | ..... | 0 | 0 | Fair ..... | |
| **San Antonio, Texas** | 29.22 | 742.2 | 29.80 | 756.9 | 62 | 16.7 | 94 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 1.63 | 41.4 | Clear..... | |
| **San Diego, California** | 29.85 | 758.2 | 29.92 | 760.0 | 57 | 13.9 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy ..... | |
| **Sandusky, Ohio** | 29.02 | 737.1 | 29.68 | 753.9 | 53 | 11.7 | 93 | N | 22 | 9.8 | ..... | ..... | 10s | ..... | N | 0.15 | 3.8 | Cloudy..... | |
| **Sandy Hook, New Jersey** | 29.69 | 754.1 | 29.72 | 754.9 | 51 | 10.6 | 100 | E | 17 | 7.6 | ..... | ..... | Fog | ..... | E | 0.03 | 0.8 | Foggy ..... | |
| **San Francisco, California** | 30.03 | 762.7 | 30.09 | 764.3 | 52 | 11.1 | 86 | NW | 1 | 0.4 | ..... | Haze | 0 | Calm | ..... | 0 | 0 | Clear..... | |
| **Santa Fé, New Mexico** | 23.29 | 591.6 | 29.83 | 757.7 | 43 | 6.1 | 51 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| **Savannah, Georgia** | 29.76 | 755.9 | 29.86 | 758.4 | 61 | 16.1 | 55 | NW | 8 | 3.6 | ..... | 2c | 0 | NW | ..... | 0 | 0 | Clear. ..... | |
| **Shreveport, Louisiana** | 29.74 | 755.4 | 29.96 | 761.0 | 64 | 17.8 | 67 | E | 2 | 0.9 | ..... | 5c | 0 | E | ..... | 0 | 0 | Fair ..... | |
| **Smithville, North Carolina** | 29.78 | 756.4 | 29.82 | 757.4 | 60 | 15.6 | 60 | NW | 7 | 3.1 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear..... | |
| **Springfield, Massachusetts** | 29.60 | 751.8 | 29.73 | 755.1 | 54 | 12.2 | 80 | N | 2 | 0.9 | ..... | ..... | 10s | ..... | N | 1.89 | 48.0 | Cloudy. ..... | |
| **Stockton, Texas** | 26.95 | 684.5 | 29.95 | 760.7 | 46 | 7.8 | 54 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear..... | |
| **Thatcher's Island, Mass** | 29.77 | 756.1 | 29.82 | 757.4 | 49 | 9.4 | 93 | SE | 8 | 3.6 | ..... | ..... | Fog | ..... | SE | 0.38 | 9.7 | Dense fog.... | |
| **Toledo, Ohio, ** | 29.03 | 737.3 | 29.68 | 753.9 | 55 | 12.8 | 81 | NW | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | 0.25 | 6.3 | Cloudy..... | |
| **Tucson, Arizona** | ..... | ..... | ..... | ..... | 51 | 10.6 | 64 | W | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| **Tybee Island, Georgia** | 29.82 | 757.4 | 29.86 | 758.4 | 60 | 15.6 | 65 | NW | 12 | 5.4 | ..... | 2cs | 0 | SW | ..... | 0 | 0 | Fair ..... | |
| **Umatilla, Oregon** | 29.03 | 760.2 | ..... | ..... | 44 | 6.7 | 68 | W | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0.01 | 0.3 | Clear..... | |
| **Vicksburg, Mississippi** | 29.72 | 754.9 | 29.98 | 761.5 | 60 | 15.6 | 65 | E | 5 | 2.2 | ..... | 10c | 0 | Calm | ..... | 0 | 0 | Cloudy..... | |
| **Virginia City, Montana** | 24.17 | 613.9 | 29.65 | 753.1 | 39 | 3.9 | 64 | W | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | Inap | Inap. | Cloudy ..... | |
| **Visalia, California** | 29.67 | 753.6 | 30.05 | 763.3 | 53 | 11.7 | 93 | Calm | 0 | 0 | ..... | 0 | 1s | ..... | Calm | 0 | 0 | Clear..... | |
| **Washington, D. C** | 29.57 | 751.1 | 29.68 | 753.9 | 57 | 13.9 | 87 | SW | 3 | 1.3 | ..... | 5ck | 0 | SW | ..... ..... | 0.92 | 23.4 | Fair..... | |
| **Wickenburg, Arizona** | ..... | ..... | ..... | ..... | 51 | 10.6 | 72 | Calm | ..... | ..... | 0 | 2c | 0 | Calm | ..... | 0 | 0 | Fair..... | |
| **Wilmington, N. Carolina** | 29.72 | 754.9 | 29.79 | 756.7 | 57 | 13.9 | 73 | NW | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| **Winnemucca, Nevada** | 25.68 | 652.3 | 30.04 | 763.0 | 46 | 7.8 | 62 | SW | 3 | 1.3 | ..... | 2cs | 0 | SW | ..... | 0 | 0 | Fair ..... | |
| **Wood's Holl, Mass** | 29.76 | 755.9 | 29.81 | 757.2 | 54 | 12.2 | 86 | E | 6 | 2.7 | ..... | ..... | Fog | ..... | Calm | 0.10 | 2.5 | Foggy ..... | |
| **Yankton, Dakota** | 28.63 | 727.2 | 29.90 | 759.4 | 54 | 12.2 | 67 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear ..... | |
| **Yuma, Arizona** | 29.69 | 754.1 | 29.85 | 758.2 | 62 | 16.7 | 66 | Calm | 0 | 0 | ..... | 2c | 0 | Calm | ..... | 0 | 0 | Fair ..... | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| **St. Paul's Island, Alaska** | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| **York Factory, B. A** | 30.24 | 768.1 | 30.29 | 769.4 | 27.0 | — 2.8 | 94 | N | 12 | 5.4 | ..... | 3k | Fog | NE | ..... | 0 | 0 | Foggy ..... | J. Fortescue, W. Wood. |
| **Havana, Cuba, W. I** | 29.74 | 755.4 | 29.76 | 755.9 | 77 | 25.0 | 86 | SE | 3.6 | 1.6 | ..... | ..... | 10n | ..... | S | 0.03 | 0.8 | Light rain... | Chas. Hasselbrink. |
| **Kingston, Jamaica, W. I** | 30.05 | 763.3 | 30.06 | 763.5 | 79 | 26.1 | 82 | SE | 4 | 1.8 | ..... | 8c | 2s | SE | ..... | 0 | 0 | ..... | James Gall. |
| **Navassa, W. I** | 29.80 | 756.9 | 29.88 | 758.9 | 82 | 27.8 | ..... | SE | 7 | 3.1 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy..... | F. M. Everett. |
| **Paramaribo, D. Guiana, S. A.** | 29.92 | 760.0 | 29.92 | 760.0 | 83 | 28.3 | 83 | E | ..... | ..... | 2 | ..... | 8ks | ..... | ..... | 0.470 | 11.94 | Cloudy..... | C. J. Hering. |
| **Batavia, Dutch Guiana, S. A** | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dr. H. Groot. |
| **Medellin, Colombia, S. A** | 25.23 | 640.8 | ..... | ..... | 66.8 | 19.3 | 85 | Calm | ..... | ..... | 0 | 3cs | 7n | ..... | ..... | 0.82 | 20.8 | ..... | Thomas Herran. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | BAROMETER. As read off. Inches. | BAROMETER. As read off. Millimeters. | BAROMETER. Attached Thermometer. Fahrenheit. | BAROMETER. Attached Thermometer. Centigrade. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er —10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Up'er From— | CLOUDS. Direction. Low'r From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | SEA-SWELL. Character. | SEA-SWELL. Direction from— | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 30.06 | 763 5 | 54 | 12.2 | 52 | 11.1 | 79 | W | 14 | 6.3 | .... | ..... | 1 | ..... | W | 0 | 0 | ..... | ..... | Fair ..... ... | |
| Navy Yard, Pensacola, Fla. | 30.06 | 763.5 | 68 | 20.0 | 68 | 20.0 | 95 | NE | 7 | 3.1 | .... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Portsmouth, N.H | 29.88 | 758.9 | 62 | 16.7 | 47 | 8.3 | 100 | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 1.5 | 38. | ..... | ..... | Dense fog.... | |
| Naval Hospital, Yokohama, Japan | 29.92* | 760.0* | 63 | 17.2 | 54 | 12.2 | 97 | NNE | ..... | ..... | 3 | ..... | 10n | ..... | W | 0.08 | 2.0 | ..... | ..... | Light rain... | |
| Adams, Panama | 29.97 | 761.2 | 83 | 28.3 | 82 | 27.8 | 87 | E | ..... | ..... | 0-1 | ..... | 5 | ..... | NE | Blank | Blank | Smooth | ..... | Fair ..... ..... | |
| Alliance, Villefranche, France | 30.13‡ | 765 3‡ | ..... | ..... | 67 | 19.4 | 69 | E | ..... | ..... | 0-1 | ..... | 9 | ..... | E | ..... | ..... | None | ..... | Pleasant..... | |
| Ashuelot, Nagasaki, Japan | 29.96 | 761 0 | 68 | 20.0 | 64 | 17.8 | 94 | Calm | ..... | ..... | 0 | ..... | 8 | ..... | Calm | ..... | ..... | ..... | ..... | Misty..... | |
| Canonicus, New Orleans, La | 29.90 | 759.4 | 48 | 8.9 | 61 | 16.1 | 94 | NE | ..... | ..... | 2 | ..... | 7 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Colorado, New York, N. Y. | 29.70‡ | 754.4‡ | ..... | ..... | 54 | 12.2 | 100 | NE | ..... | ..... | 3 | ..... | 10 | ..... | NE | 0.05 | 1.3 | ..... | ..... | Foggy..... | |
| Constellation, Havre, France | 29.91‡ | 759.7‡ | ..... | ..... | 57 | 13.9 | 81 | E | ..... | ..... | 2 | ..... | 10 | ..... | E | ..... | ..... | ..... | ..... | Cloudy..... | |
| Constitution, Havre, France | 29.82‡ | 757.4‡ | ..... | ..... | 60 | 15.6 | 71 | ESE | ..... | ..... | 3 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Cloudy..... | |
| Despatch, Constantinople, Turkey | 29.93‡ | 760.2‡ | ..... | ..... | 63 | 17.2 | 52 | NE | ..... | ..... | 2 | ..... | 5 | ..... | NE | ..... | ..... | ..... | ..... | Fair..... | |
| Franklin, Norfolk, Va | 29.81 | 757.2 | 64 | 17.8 | 58 | 14.4 | 82 | WSW | 7.2 | 3.2 | ..... | ..... | 2 | ..... | S&W | 0.15 | 3.8 | ..... | ..... | D. clouds..... | |
| Gettysburg Valetta, Malta | 30.03‡ | 762.7‡ | ..... | ..... | 68 | 20.0 | 84 | N | ..... | ..... | 2 | ..... | 2 | ..... | Calm | 0 | 0 | ..... | ..... | Clear..... | |
| Guard, N. 12° 21′, W. 24° 20′ | 30.00 | 762.0 | 80 | 26.7 | 79 | 26.1 | 82 | ENE | ..... | ..... | 4 | ..... | 2 | ..... | ENE | ..... | ..... | Mod'ate | E | Clear..... | |
| Hartford, Montevideo, Uraguay | 29.90 | 759.4 | 64 | 17.8 | 60 | 15.6 | 88 | SSE | 18 | 8.0 | ..... | ..... | 10 | ..... | S | 0.019 | 0.48 | Mod'ate | S | Threatening | |
| Marion, Smyrna, Turkey | 29.89 | 759.2 | 66 | 18.9 | 65 | 18.3 | 54 | N | ..... | ..... | 3 | ..... | 5 | ..... | NE | Heavy | Heavy | Smooth | ..... | Fair ..... | |
| Michigan, Erie, Pa | 29.10 | 739.1 | 62 | 16.7 | 55 | 12.8 | 93 | S | ..... | ..... | 1 | ..... | 10 | ..... | S | ..... | ..... | ..... | ..... | Raining..... | |
| Monocacy, Shanghai, China | 29.88‡ | 758.9‡ | ..... | ..... | 71 | 21.7 | 75 | SSE | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| New Hampshire, Port Royal, S. C | 30.02† | 762.5† | ..... | ..... | 63 | 17.2 | 62 | NNW | 7 | 3.1 | ..... | ..... | 2 | ..... | N | ..... | ..... | ..... | ..... | Clear..... | |
| Omaha, Portsmouth, N. H | 29.84* | 757.9* | 54 | 12 2 | 48 | 8.9 | 96 | NE | 3 | 1.3 | ..... | ..... | 10 | ..... | ..... | 0.5 | 13. | ..... | ..... | Rain & fog... | |
| Onward, Callao, Peru | 30.03† | 762.7† | ..... | ..... | 67.5 | 19.7 | 92 | SE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | Long | W | Foggy ..... | |
| Ossipee, Hampton Roads, Va | 29.77‡ | 756.1‡ | ..... | ..... | 59 | 15.0 | 95 | W | ..... | ..... | 2 | ..... | 2 | ..... | W | ..... | ..... | ..... | ..... | Clear ..... | |
| Palos, Shanghai, China | 29.97* | 761.2* | 73 | 22.8 | 72 | 22.2 | 67 | SE | ..... | ..... | 2 | ..... | 7 | ..... | S&W | ..... | ..... | ..... | ..... | Hazy..... | |
| Pensacola, San Francisco, Cal | 30.14 | 765.5 | 56 | 13.3 | 50 | 10.0 | 93 | SSW | 6 | 2.7 | .... | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Plymouth, N. 24° 39′ W. 68° 08′ | 29.94‡ | 760.5‡ | ..... | ..... | 77 | 25.0 | 77 | ESE | ..... | ..... | 1 | ..... | 2 | ..... | S | ..... | ..... | Smooth | ..... | Clear. ..... | |
| Powhatan, Norfolk, Va | 29.74‡ | 755.4‡ | ..... | ..... | 59 | 15.0 | 100 | W | 3.6 | 1.6 | ..... | ..... | 2 | ..... | ..... | 0.50 | 12.7 | ..... | ..... | Clear ..... | |
| Ranger, Amoy, China | 30.04* | 763.0* | ..... | ..... | 80 | 26.7 | 82 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | Calm | ..... | ..... | Smooth | ..... | D. clouds..... | |
| Rio Bravo, Brownsville, Texas | 29.78 | 756.4 | 66 | 18 9 | 64 | 17.8 | 94 | Calm | ..... | ..... | 0 | ..... | 7 | ..... | Calm | ..... | ..... | ..... | ..... | Cloudy..... | |
| Santee, Annapolis, Md | 29.70‡ | 754.4‡ | ..... | ..... | 55 | 12.8 | 93 | S | ..... | ..... | 1 | ..... | 10 | ..... | S | 0.85 | 21.6 | ..... | ..... | Light fog..... | |
| Saratoga, Washington, D. C | 29.64 | 752.8 | 66 | 18.9 | 64 | 17.8 | 94 | SW | ..... | ..... | 2 | ..... | 5 | ..... | N&E | Heavy | Heavy | ..... | ..... | ..... | |
| St. Louis, League Island, Pa | 29.70 | 754.4 | 68 | 20.0 | 59 | 15.0 | 88 | E | 9 | 4.0 | ..... | ..... | 10 | ..... | E | 0.15 | 3.8 | ..... | ..... | Drizzling.... | |
| Supply, Havre, France | 29.95 | 760.7 | 60 | 15.6 | 60 | 15.6 | 88 | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | ..... | ..... | Cloudy..... | |
| Swatara, Key West, Fla | 29.78‡ | 756.4‡ | ..... | ..... | 77 | 25.0 | 91 | ESE | ..... | ..... | 3 | ..... | 10 | ..... | S&E | ..... | ..... | ..... | ..... | Light rain... | |
| Tennessee, Alexandria, Egypt | 29.92* | 760.0* | 71 | 21.7 | 68 | 20.0 | 70 | WNW | 4 | 1.8 | ..... | ..... | 4 | ..... | NW | ..... | ..... | Light | NW | D. clouds..... | |
| Trenton, Villefranche, France | 30.12‡ | 765.0‡ | ..... | ..... | 72 | 22.2 | 71 | ESE | ..... | ..... | 0-1 | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Misty..... | |
| Tuscarora, N. 16° 21′, W. 98° 39′ | 29.68 | 753.9 | 76 | 24.4 | 77 | 25.0 | 91 | WNW | ..... | ..... | 0.1 | ..... | 2 | ..... | Calm | 0 | 0 | Smooth | ..... | Clear..... | |
| Vandalia, Valetta, Malta | 30.15‡ | 765.8‡ | ..... | ..... | 66 | 18.9 | 68 | NW | ..... | ..... | 2 | ..... | 2 | ..... | NNW | ..... | ..... | ..... | ..... | Clear..... | |
| Wabash, Boston, Mass | 29.79‡ | 756.7‡ | ..... | ..... | 63 | 17.2 | 100 | E | 5 | 2.2 | ..... | ..... | 10 | ..... | ..... | 0.58 | 14.7 | ..... | ..... | Foggy ..... | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Anerold Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable; the position given is that at noon, local time, instead of that at 7:35 a. m., Washington time.

# UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | | | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | Character. | Direction from— | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | |
| S. S. City of Peking, Yokohama, Japan | | | 29.94 | 760.5 | 55 | 12.8 | 93 | NNE | 11.0 | 4.9 | | 10 | | NE | | Smooth | Calm | Raining | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. Colima, N. 14° 53′, W. 95° 3′ | | | 29.91† | 759.7† | 82 | 27.8 | 96 | SW | | | 3–4 | | 2 | | NE | Small | W | D. clouds | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. †Aneroid.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WHITE STAR LINE MARINE SERIES.** Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York. | | | | | | | | | | | | | | | | | | | |
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, N. 41° 00′, W. 61° 50′ | | | 30.00† | 762.0† | 58 | 14.4 | ?? | S | | | 4 | | 10 | | | Mod'ate | SSW | Raining | Capt. W. H. Thompson. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic, N. 47° 34′, W. 34° 22′ | | | 29.80† | 756.9† | 52 | 11.1 | ?? | NW | | | 4 | | | | NW | | None | D. clouds | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Aneroid.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.** Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary. | | | | | | | | | | | | | | | | | | | |
| S. S. Belgic, N. 35° 32′, W. 162° 55′ | | | 30.57* | 776.5* | | | | SE | | | 2 | | ks | | SW | Mod'ate | SE | D. clouds | Capt. John Metcalf. |
| S. S. Gaelic, N. 44° 00′, W. 170° 50′ | | | 29.33† | 745.0† | 48 | 8.9 | 70 | SE | | | 6 | | Haze | | | High sea. | SE | Raining | Capt. W. H. Kidley |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.** Furnished by the coöperation of A. Schumacher & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig, N. 39° 20′, W. 53° 3′ | | | 30.15 | 765.8 | 66.6 | 19.2 | 71 | SW | | | 1 | | 10 | | SSW | Mod'ate | SE | | |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. Undütsch. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | Character | Direction From— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, Philadelphia, Pa | | | 29.70* | 754.4* | 60 | 15.6 | 94 | ENE | | | 4 | | 8 | | NE | | | Cloudy | Captain Sargent. |
| S. S. Ohio, N. 50° 26′, W. 9° 16′ | | | 29.58 | 751.3 | 63 | 11.7 | 93 | SE | | | 4 | | 10 | | SE | Mod'ate | ESE | Misty | Captain Morrison. |
| S. S. Pennsylvania, N. 46° 13′, W. 42° 30′ | | | 29.98† | 761.5† | 55 | 12.8 | ?? | W | | | 3 | | 9 | | W | Light | NE; SE | Cloudy | Captain Harris. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for elevation; instrumental error not known. †Corrected for temperature and elevation, instrumental error not known.

## RED STAR LINE MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Rundle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |
| | | | | | | | | | | | | | | | | | | | |

## ALLAN LINE MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| S. S. Scandinavian, N. 43° 19′, W. 58° 6′ | | | 30.14 | 765.5 | 46 | 7.8 | | SE | | | 2 | | 10s | | ESE | Long Mod'ate | ESE | D. clouds | Capt. W. Richardson. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

## MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller St. John, N. B. | | | 29.95 | 760.7 | 53 | 11.7 | 86 | W | | | | | 10s | | | | | Overcast | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.98 | 761.5 | 7.5 | —13.6 | 91 | WNW | 17.2 | 7.7 | | 0 | 1ks | | WNW | | | Fair | O. T. Sherman. |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg$^{d}$.) Chief Signal Officer. U. S. A.*

# BULLETIN

OF

# INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

## TAKEN SIMULTANEOUSLY ON APRIL 30, 1878.

**7:85 A. M. WASHINGTON mean time.**

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

### ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mogador | ..... | ..... | 30.02 | 762.5 | 68.5 | 20.3 | 89 | NE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair.. | Dr. Ollive. |
| Nemours | ..... | ..... | 29.95 | 760.6 | 69.8 | 21.0 | 73 | N | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0 | 0 | Very cloudy | Michel. |
| Algiers | ..... | ..... | 29.89 | 759.2 | 78.4 | 25.8 | 31 | NNE | ..... | ..... | 1 | ..... | 9 | ..... | ..... | 0 | 0 | Covered | Towiliere. |
| La Calle | ..... | ..... | 29.89 | 759.3 | 83.8 | 28.8 | 57 | E | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0 | 0 | Very cloudy | Boulangeot. |
| Tunis | ..... | ..... | 29.96 | 761.0 | 84.7 | 29.3 | 32 | SSE | ..... | ..... | 2 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Jacques. |
| Sfax | ..... | ..... | 30.04 | 763.0 | 71.6 | 22 0 | ..... | S | ..... | ..... | 4 | ..... | 0 | ..... | ..... | 0 | 0 | Clear | Gau. |
| Saida | ..... | ..... | 29.94 | 760.4 | 91.0 | 32,8 | ..... | SW | ..... | ..... | 3 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Herbin. |
| Tebessa | ..... | ..... | 29.98 | 761.6 | ..... | ..... | ..... | W | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Watrin. |
| Geriville | ..... | ..... | 30.14 | 765.6 | 70.5 | 21.4 | 73 | S | ..... | ..... | 6 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Lemaillot. |
| Laghouat | ..... | ..... | 30.06 | 763.5 | 90.0 | 32.2 | 20 | SW | ..... | ..... | 4 | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Bertrand. |
| Biskra | ..... | ..... | 30.00 | 761.9 | 83.3 | 28.5 | 40 | SE | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | Pretty fair.. | Chanvaux. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890.? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

### AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agram | 29.34 | 745.3 | 29.88 | 759.0 | 62.1 | 16.7 | 60 | W | ..... | ..... | 5 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. Ivan Stozir |
| Cracow, I. R. Observatory | 29.11 | 739.3 | 29.85 | 758.3 | 64.4 | 18.0 | 41 | W | ..... | ..... | 1 | ..... | 4 | ..... | ..... | 0 | 0 | ..... | Dr. Wierzbiski. |
| Eperies | 29.00 | 736.5 | 29.89 | 759.1 | 65.5 | 18.6 | 41 | SE | ..... | ..... | 2 | ..... | 4k;s | ..... | ..... | 0 | 0 | ..... | Julius Mikolik. |
| Gratz | 28.60 | 726.4 | 29.81 | 757.1 | 66.0 | 18.9 | 49 | SW | ..... | ..... | 3 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Andreas Rospini. |
| Hermannstadt | 28.47 | 723.1 | 29.85 | 758.3 | 64.6 | 18.1 | 43 | NNW | ..... | ..... | 1 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | Prof. Reissenberg |
| Kremsmünster | 28.45 | 722.7 | 29.76 | 755.8 | 63.1 | 17.3 | 58 | W | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. C. Wagner |
| Lemberg | 28.86 | 733.1 | 29.83 | 757.6 | 60.8 | 16.0 | 54 | SW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | 0 | 0 | ..... | Dr. T. Stanecki. |
| Pola | 29.86 | 758.4 | 29.97 | 761.2 | 58.6 | 14.8 | 80 | SW | ..... | ..... | 1 | ..... | 10s | ..... | ..... | 0 | 0 | ..... | I.R.Hydrographic Office |
| Szathmar | 29.48 | 748.8 | 29.93 | 760.3 | 65.1 | 18.4 | 32 | SW | ..... | ..... | 2 | ..... | 1 | ..... | ..... | 0 | 0 | ..... | Johann Tamas, S. J. |
| Szegedin | 29.63 | 752.7 | 29.91 | 759.6 | 65.1 | 18.4 | 48 | S | ..... | ..... | 1 | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Karl Stancel. |
| Trieste | 29.96 | 760.9 | 29.85 | 758.3 | 57.9 | 14.4 | 93 | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.236 | 6.0 | Raining | P. Busin. |
| Vienna | 29.10 | 739.1 | 29.79 | 756.7 | 67.3 | 19.6 | 43 | ESE | ..... | ..... | 2 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | I. R. Central Met. Obs'y. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m. local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

### BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arlon | 28.27 | 718.1 | 29.84 | 758.0 | 54.1 | 12.3 | 93 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.087 | 2.2 | ..... | Prof. M. Passau. |
| Brussels | 29.50 | 749.2 | 29.99 | 754.2 | 62.1 | 16.7 | 82 | ESE | ..... | ..... | 1 | ..... | 10 | ..... | SSW | 0.276 | 7.0 | ..... | Royal Observatory. |
| Furnes | 29.08 | 753.9 | 29.71 | 754.5 | 60.1 | 15.6 | 92 | WSW | ..... | ..... | 3 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | M. E. de Cae. |
| Maeseyck | 29.60 | 751.7 | 29.72 | 754.9 | 63.3 | 17.4 | 83 | S | ..... | ..... | 0 | ..... | 10 | ..... | ..... | 0.043 | 1.1 | ..... | M. Pierrot. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4? set. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

## BRITISH SERIES.

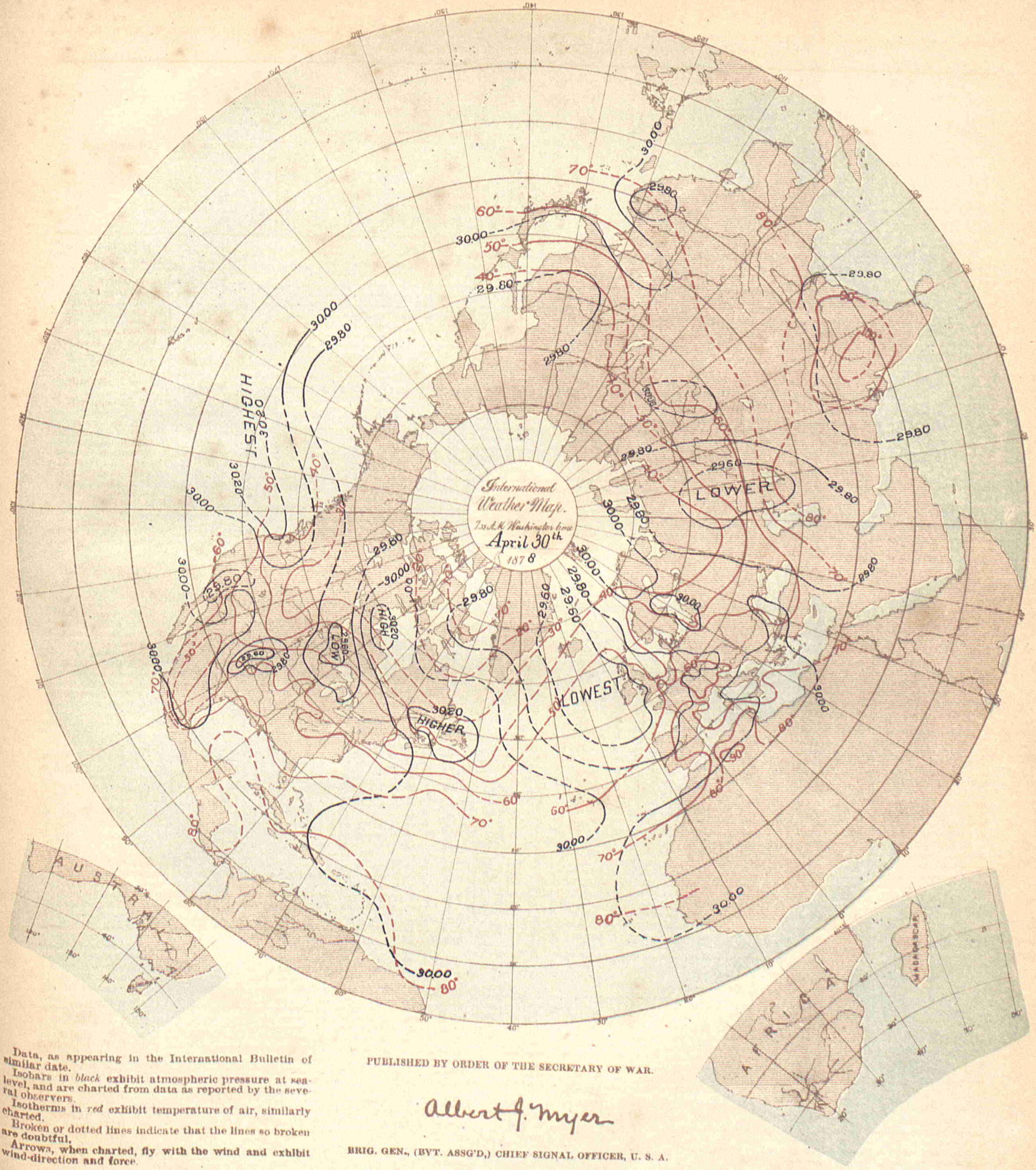
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 29.65 | 753.1 | 29.75 | 755.6 | 44.0 | 6.7 | ..... | SE | 13 | 5.8 | ..... | ..... | 10 | ..... | ..... | 0.020 | 0.51 | Overcast..... | W. Buswell. |
| Ardrossan | 29.59 | 751.6 | 29.61 | 752.1 | 55 | 12.8 | ..... | SE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | William McNeil. |
| Armagh, Observatory | ..... | ..... | 29.57 | 751.1 | 51.3 | 10.7 | ..... | E | 6 | 2.7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | S. Call. |
| Bidston, (Liverpool Obs.) | ..... | ..... | 29.59 | 751.6 | 50.7 | 10.4 | ..... | ESE | 14 | 6.3 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Hartnup. |
| Birr Castle, (Parsonstown) | ..... | ..... | 29.53 | 750.0 | 59.6 | 15.3 | ..... | SSE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | J. L. E. Dreyer. |
| Bradford, Yorkshire | 29.24 | 742.7 | 29.64 | 752.8 | 49.0 | 9.4 | ..... | E | ..... | ..... | 0 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | J. McLandsborough. |
| Bridgetown, (Barbados) | ..... | ..... | 29.98 | 761.5 | 84.0 | 28.9 | ..... | NE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | Pvt. G. W. Roberts, A. |
| Cambridge, Observatory | ..... | ..... | 29.62 | 752.3 | 63.0 | 17.2 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | Blank | Blank | Overcast..... | H. Todd. [H.C. |
| Cardington | ..... | ..... | 29.64 | 752.8 | 67.0 | 19.4 | ..... | W | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | D. clouds..... | John McLaren. |
| Chatham, School M. E. | 29.52 | 749.8 | 29.64 | 752.8 | 64.2 | 17.9 | ..... | Calm | ..... | ..... | 0 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | Q. M. Serg., Geo. Stuart, R. E. |
| Dartmoor | 28.21 | 716.5 | 29.66 | 753.4 | 52.0 | 11.1 | ..... | SW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Rain and fog | Alexander Watt. |
| Donaghadee | 29.56 | 750.8 | 29.59 | 751.6 | 48 | 8.9 | ..... | SSE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | J. Mac Gowan. |
| Dover | 29.64 | 752.8 | 29.67 | 753.6 | 56 | 13.3 | ..... | WSW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy..... | J. Costello. |
| Eccles, (near Manchester) | ..... | ..... | 29.61 | 752.1 | 50.4 | 10.2 | ..... | ENE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | ..... | ..... | Drizzling..... | Thomas Mackereth. |
| Falmouth, Observatory | 29.40 | 746.7 | 29.62 | 752.3 | 55.0 | 12.8 | ..... | SSE | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Dense fog... | The Staff. |
| Fort Napier, (Natal) | 27.75 | 704.8 | 29.95 | 760.7 | 82.0 | 27.8 | ..... | N | ..... | ..... | 2 | ..... | 0 | ..... | ..... | ..... | ..... | Blue sky..... | Pvt. G. Salmon, A.H.C. |
| Free Town, (Sierra Leone) | 29.67 | 753.6 | 29.90 | 759.4 | 88.0 | 31.1 | ..... | W | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... | ..... | D. clouds.... | |
| Galway, Queen's College | ..... | ..... | 29.47 | 748.5 | 62 | 16.7 | ..... | S | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | Prof. A. H. Curtis. |
| Gibraltar, (Mediterranean) | 29.56 | 758.4 | 29.92 | 760.0 | 68.0 | 20.0 | ..... | W | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy..... | Corpl. Wm. Allen, A.H.C. |
| Glasgow, Observatory | 29.41 | 747.0 | 29.62 | 752.3 | 56.3 | 13.5 | ..... | ENE | ..... | ..... | 5 | ..... | 9 | ..... | ..... | ..... | ..... | Gloomy..... | D. G. Maclean. |
| Great Yarmouth | 29.65 | 753.1 | 29.65 | 753.1 | 50 | 10.0 | ..... | SE | ..... | ..... | 2 | ..... | 6 | ..... | ..... | ..... | ..... | Drizzling.... | G. T. Watson. |
| Greenwich, Royal Obs'y | 29.47 | 748.5 | 29.64 | 752.8 | 67.6 | 19.8 | ..... | WSW | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff, for G. B. Airy. |
| Guernsey | 29.45 | 748.0 | 29.67 | 753.6 | 59 | 15.0 | ..... | SSE | ..... | ..... | 1 | ..... | 7 | ..... | ..... | ..... | ..... | D. clouds.... | Dr. S. E. Hoskins, F.R.S. |
| Helston | ..... | ..... | 29.64 | 752.8 | 59 | 15.0 | ..... | S | ..... | ..... | 4 | ..... | 8k | ..... | ..... | 0.10 | 2.5 | Fair. ..... | M. P. Moyle. |
| Holyhead | 29.54 | 750.3 | 29.59 | 751.6 | 53 | 11.7 | ..... | SSE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Foggy..... | John Tilston. |
| Jersey | 29.44 | 747.8 | 29.73 | 755.1 | 57.9 | 14.4 | ..... | SW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | Blank | Blank | Gloomy ..... | J. Fisher. |
| Kew, Observatory | ..... | ..... | 29.62 | 752.3 | 63.1 | 17.3 | ..... | SW | 14 | 6.3 | ..... | ..... | 7k8 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff. |
| Kingstown | 29.53 | 750.0 | 29.56 | 750.8 | 55 | 12.8 | ..... | E | ..... | ..... | 1 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast .... | George Mitchell. |
| Leicester, Museum | ..... | ..... | 29.61 | 752.1 | 58.0 | 14.4 | ..... | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast.... | Wm. J. Harrison, F.G.S. |
| Malta, (Mediterranean) | 30.00 | 762.0 | 30.08 | 764.0 | 67.6 | 19.5 | ..... | SW | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | Sgt. Fred. Travis, A. H. |
| Nairn | 29.55 | 750.6 | 29.64 | 752.8 | 56 | 13.3 | ..... | NE | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | Hazy..... | W. D. Penny. [C. |
| Nassau, (Bahamas) | ..... | ..... | 29.82 | 757.4 | 78.5 | 25.8 | ..... | SW | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | C. S. Duncombe. |
| Nottingham, Observatory | 29.44 | 747.8 | 29.63 | 752.6 | 55.1 | 12.8 | ..... | E | ..... | ..... | 1 | ..... | 10d | ..... | ESE | 0.140 | 3.56 | Overcast..... | E. J. Lowe, F. R. S. |
| Oscott, St. Mary's College | 29.10 | 739.1 | 29.61 | 752.1 | 59.0 | 15.0 | ..... | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Misty..... | Rev. Stephen Whitty. |
| Oxford, Radcliffe Obs'y | ..... | ..... | 29.63 | 752.6 | 64 | 17.8 | ..... | SW | ..... | ..... | 2 | ..... | 9 | ..... | ..... | ..... | ..... | Overcast..... | Mr. Lucas. |
| Plymouth | 29.57 | 751.1 | 29.64 | 752.8 | 55.5 | 13.1 | ..... | S | ..... | ..... | 2 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John Merrifield. |
| Roche's Point | 29.50 | 749.3 | 29.54 | 750.3 | 58 | 14.4 | ..... | SE | ..... | ..... | 3 | ..... | 8 | ..... | ..... | ..... | ..... | Foggy ..... | W. Kennedy. |
| Saint Ann's Head | 29.44 | 747.8 | 29.60 | 751.8 | 54 | 12.2 | ..... | SSW | ..... | ..... | 3 | ..... | 10 | ..... | ..... | ..... | ..... | Overcast..... | John C. Walker. |
| Sandwick Manse, (Orkneys) | ..... | ..... | 29.74 | 755.4 | 47.9 | 8.8 | ..... | SE | 23 | 10.3 | ..... | ..... | 2 | ..... | ..... | * 0.24 | * 6.1 | Blue sky..... | Rev. C. Clouston, LL. D. |
| Scutari, Cemetery, (Turkey | ..... | ..... | 30.00 | 762.0 | 64.0 | 17.8 | ..... | NE | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | Blue sky .... | Sergt. W. H. Lyne. |
| Sheffield | 29.38 | 746.2 | 29.66 | 753.4 | 50.3 | 10.2 | ..... | NE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.12 | 3.0 | Drizzling... | W. F. Cooper. |
| Silloth Rectory | 29.58 | 751.3 | 29.61 | 752.1 | 52.7 | 11.5 | 77 | SE | ..... | ..... | 3 | ..... | 10 | ..... | ..... | 0.150 | 3.81 | Overcast..... | Rev. F. Redford, M. A. |
| Stonyhurst, Observatory | 29.24 | 742.7 | 29.64 | 752.8 | 49.4 | 9.7 | ..... | E | ..... | ..... | 1 | ..... | 10 | ..... | ..... | ..... | ..... | Raining..... | Rev. S. J. Perry. |
| Stornoway, Lews C., (Hebr.) | ..... | ..... | 29.58 | 751.3 | 53 | 11.7 | ..... | SSE | ..... | ..... | 2 | ..... | 8 | ..... | ..... | ..... | ..... | ¾ clouded... | John Sutherland. |
| Stratfield Turgiss | 29.46 | 748.3 | 29.67 | 753.6 | 60.9 | 16.1 | ..... | W | ..... | ..... | 1 | ..... | 8 | ..... | ..... | ..... | ..... | D. clouds.... | Rev. C. H. Griffith, F.M |
| Thurso | ..... | ..... | 29.69 | 754.1 | 49 | 9.4 | ..... | SE | ..... | ..... | 4 | ..... | 8 | ..... | ..... | ..... | ..... | Overcast..... | John Trotter. |
| Truro, Royal Institution | ..... | ..... | 29.67 | 753.6 | 60 | 15.6 | ..... | S | ..... | ..... | 6 | ..... | 10 | ..... | ..... | ..... | ..... | Showery..... | W. Newcombe. |
| Valencia, Observatory | ..... | ..... | 29.49 | 749.0 | 59.4 | 15.2 | ..... | SSE | 20 | 8.9 | ..... | ..... | 6 | ..... | ..... | ..... | ..... | D. clouds.... | The Staff. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Calf of Man, (Isle of Man) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Henry Mercer. |
| Cape Good Hope, Obs'y | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | The Staff, for E. J. Stone. |
| Hobart Town, (Tasmania) | ..... | ..... | 29.92 | 760.0 | 60.0 | 15.6 | 94 | NW | ..... | ..... | 3 | ..... | 10kn | ..... | ..... | 0 | 0 | Covered ..... | Francis Abbott, F.R.A.S. |
| Leith, Restalrig Park | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Andrew Gibb. |
| Mauritius, Observatory | 29.80 | 756.9 | 29.98 | 761.6 | 80.3 | 26.8 | 73 | ESE | 16.5 | 7.4 | ..... | 0 | 2 | ..... | ESE | 0.01 | 0.3 | Squally..... | C. Meldrum. |
| Melbourne, Observatory | 30.06 | 763.5 | 30.15 | 765.8 | 54.1 | 12.3 | 73 | NW | 5 | 2.2 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | Dull..... | R. L. J. Ellery. |
| Monach L't-house, (Hebrides) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | J. Youngclause. |
| North Unst, (Shetland Is.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Robert Burnet. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; the amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., local time; Sheffield, 8 a. m., following day. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft., or 670.6 m. * Total precipitation during the month.

| Marine Series. Vessels. | Sea or swell. Height scale 0–9 | Sea or swell. Direction from— | | |
|---|---|---|---|---|
| S. S. Algeria | ..... | ..... | ..... | Capt. W. Watson. |
| S. S. Batavia | ..... | ..... | ..... | Capt. J. E. Mouland. |
| Ship Camperdown | ..... | ..... | ..... | Capt. A. T. Miller. |
| Brig Catherine | ..... | ..... | ..... | Capt. Adam Smith. |
| Barque Celeste | ..... | ..... | ..... | Capt. D. F. McKechnie |
| S. S. Hibernia | ..... | ..... | ..... | Capt. W. R. Cato |
| Barque Maroon | ..... | ..... | ..... | Capt. A. T. Brown. |
| Ship Mikado | ..... | ..... | ..... | Capt. C. C. Prehn. |
| S. S. Naid, N. 49° 5′, W. 18° 5′ | 3 | W | Overcast..... | Capt. J. Smith. [R. |
| S. S. Peruvian | ..... | ..... | ..... | Capt. W. H. Smith, R. N. |
| Royal Alice | ..... | ..... | ..... | Capt. E. M. Hughes. |
| S. S. Seine | ..... | ..... | ..... | Capt. H. Manning. |
| Barque Sorata | ..... | ..... | ..... | Capt. Jas. J. Price. |
| Schooner Traveller | ..... | ..... | ..... | Capt. Alex. Simpson. |
| S. S. Yorkshire | ..... | ..... | ..... | Capt. H. Longley. |
| ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... |

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.




Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST BOSTON

## COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10 | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punta Arenas | | | | | | | | | | | | | | | | | | | Mr. Ansart. |
| San José | 26.22 | 666.0 | | | 72.5 | 22.5 | 78 | NE | | | 1 | 4pc | 4ks; hz. | | | 0.7 | 18. | | Federico Maison. |

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

## DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Copenhagen | 29.89 | 759.2 | 29.94 | 760.4 | 54.3 | 12.4 | 47 | SE | | | 2 | | 0 | | | | | | |
| Fanöe | 29.79 | 756.6 | 29.81 | 757.1 | 59.2 | 15.1 | 63 | ESE | | | 4 | | 0 | | | | | | |
| Godthaab, (Greenland) | 29.78 | 756.5 | 29.83 | 757.6 | 23.2 | —4.9 | 71 | NNE | | | 4 | | 0 | | | | | | |
| Stykkisholm, (Iceland) | 29.36 | 745.7 | 29.40 | 746.8 | 42.3 | 5.7 | 94 | SE | | | 2 | | 10 | | | | | | |
| Thorshavn, (Faröe) | 29.66 | 753.3 | 29.69 | 754.2 | 49.6 | 9.8 | 79 | S | | | 2 | | 10 | | | | | | |
| Vestervig | 29.65 | 753.0 | 29.82 | 757.3 | 57.6 | 14.2 | 55 | SE | | | 6 | | 2 | | | | | | |

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

## FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alençon, Normal School | 29.11 | 739.3 | 29.66 | 753.3 | 59.0 | 15 | 96 | SW | | | 1 | | 5 | | SW | 0.622 | 15.8 | Cloudy | Collignon, Director. |
| Amiens, Normal School | | | | | | | | | | | | | | | | | | | Bonvarne, Director. |
| Avignon, Normal School | 29.83 | 757.7 | 29.91 | 759.7 | 72.3 | 22.4 | 48 | S | | | 2 | | 0 | | | 0 | 0 | Very clear.. | Mr. Giraud, Director |
| Bar-sur-Seine | 29.22 | 742.2 | 29.76 | 755.9 | 61.3 | 16.3 | 83 | SW | | | 1 | | 10 | | SW | 0.276 | 7.0 | Covered | C. Saillard. |
| Beaumette Obs'y (Angers) | | | | | | | | | | | | | | | | | | | Albert Cheux. |
| Beauvais | | | | | 66.7 | 19.3 | 67 | W | | | 3 | | 8 | | W | 0.167 | 4.25 | Very cloudy | Normal School. |
| Besançon | 28.98 | 736.2 | 29.91 | 759.6 | 57.4 | 14.1 | 82 | SSW | | | 4 | | 10 | | | 0.268 | 6.8 | Covered | Normal School. |
| Bourg-en-Bresse | 29.03 | 737.3 | 29.95 | 760.6 | 63.0 | 17.2 | 65 | S | | | 4 | | 10n | | S | 0.094 | 2.4 | Covered | Normal School. |
| Bourges, Normal School | 29.24 | 742.7 | 29.78 | 756.3 | 66.9 | 19.4 | 80 | SW | | | 2 | | 2 | | SW | 0 | 0 | Slightly cl'dy | A. Wagner, Director. |
| Brest, Naval Observatory | 29.40 | 746.7 | 29.62 | 752.3 | 58.5 | 14.7 | 89 | SW | | | 3 | | 10n | | SW | 0.148 | 3.75 | | The Staff. |
| Carcassonne, Normal School | 29.50 | 749.4 | 29.95 | 760.6 | 69.8 | 21 | 49 | NNW | | | 2 | | 2 | | W | 0 | 0 | Slightly cl'dy | Vateau, Director. |
| Caen | 29.64 | 752.9 | 29.71 | 754.7 | 66.2 | 19 | 68 | SW | | | 2 | | 5 | | W | 0 | 0 | Cloudy | Normal School. |
| Chartres, Normal School | 29.17 | 741.0 | 29.72 | 755.0 | 65.5 | 18.6 | 98 | SW | | | 4 | | 10 | | SW | 0.71 | 18. | Covered | Lequin, Director. |
| Châlons-sur-Marne, N. Sch'l | 29.40 | 746.8 | 29.72 | 754.8 | 57.0 | 13.9 | 86 | SW | | | 2 | | 10 | | | 0 | 0 | Covered | T. Leloup, Director. |
| Clermont-Fd., Puy de D. Obs | 28.47 | 723.1 | 29.77 | 756.1 | 70.3 | 21.3 | 49 | SE | | | 2 | | 8 | | SW | 0.063 | 1.6 | Very cloudy | Alluard, Director. |
| Commercy, Normal School | 28.92 | 734.5 | 29.79 | 756.7 | 55.4 | 13 | 88 | SW | | | 2 | | 10 | | SW | 0.24 | 6. | Covered | Dr. Goulet, Director. |
| Commune de Gréasque* | 28.80 | 731.6 | 29.95 | 760.6 | 70.7 | 21.5 | 29 | NE | | | 2 | | 2 | | NE | 0 | 0 | ¾ covered | M. Kina. |
| Grenoble | | | | | | | | | | | | | | | | | | | Normal School. |
| La Roche-sur-Yon, N. School | 29.54 | 750.2 | 29.74 | 755.4 | 67.3 | 19.6 | 86 | SW | | | 1 | | 8 | | SW | 0 | 0 | Very cloudy | Mouillot, Director. |
| Le Mans, Normal School | 29.49 | 749.1 | 29.80 | 756.8 | 61.0 | 16.1 | 85 | SW | | | 2 | | 10 | | SW | 0.39 | 10. | Covered | Poirrier, Director. |
| Lons-Le-Saulnier, N. School | 28.95 | 735.2 | 29.85 | 758.1 | 58.6 | 14.8 | 72 | S | | | 2 | | 8 | | NE | 0.181 | 4.6 | Very cloudy | Voudez, Director. |
| Lorient, Naval Observatory | 29.63 | 752.6 | 29.73 | 755.1 | 62.6 | 17.0 | 87 | S | | | 4 | | 8 | | SW | 0.079 | 2.0 | ¾ covered | T. Carré, Director. |
| Mâcon, Normal School | 29.18 | 741.2 | 29.85 | 758.2 | 65.7 | 18.7 | 88 | SSW | | | 4 | | 10 | | NNE | 0.24 | 6. | Covered | M. Marchal, Director. |
| Metz | | | | | | | | | | | | | | | | | | | M. A. Schuster, Dir. |
| Mirecourt | 28.74 | 729.9 | 29.78 | 756.3 | 53.2 | 11.8 | 87 | N | | | 4 | | 10 | | S | 0.31 | 8. | Covered | Normal School. |
| Nismes, Normal School | 29.72 | 754.8 | 29.91 | 759.8 | 74.5 | 23.6 | 58 | N | | | 1 | | 0 | | | 0 | 0 | Clear. | Boyer, Director. |
| Orleans, Normal School | 29.41 | 746.9 | 29.78 | 756.3 | 68.0 | 20 | 87 | W | | | 4 | | 10 | | | 0.08 | 2. | Covered | Bernard, Director. |
| Paris, Observatory | 29.50 | 749.3 | 29.73 | 755.2 | 66.4 | 19.1 | 61 | W | | | 2 | | 5 | | W | 0.596 | 15.16 | Cloudy | National Observatory. |
| Privas | 28.86 | 733.0 | 29.91 | 759.8 | 59.9 | 15.5 | 53 | S | | | 1 | | 2 | | S | 0 | 0 | Slightly cl'dy | Normal School |
| Puy de Dome (Summit) | | | | | | | | | | | | | | | | | | | Alluard, Director. |
| Rochefort, Naval Obs'y | 29.75 | 755.7 | 29.78 | 756.5 | 73.4 | 23.0 | 52 | S | | | 1 | | 0 | | | 0 | 0 | Clear | Lt. Decante, Director. |
| Rouen, Normal School | 29.53 | 750.0 | 29.61 | 752.1 | 68.0 | 20.0 | 55 | WSW | | | 2 | | 5 | | SW | 0.563 | 14.3 | Cloudy | F. Lucard, Director |
| Saint Malo (Port) | | | | | | | | | | | | | | | | | | | M. H. Hercouet |
| Tarbes, Normal School | 28.80 | 731.5 | 29.83 | 757.6 | 77.0 | 25 | 61 | ESE | | | 2 | | 0 | | | 0 | 0 | Clear | T. Hugues, Director |
| Villefranche | 29.14 | 740.1 | 29.83 | 757.6 | 68.5 | 20.3 | 67 | SE | | | 3 | | 5 | | W | 0 | 0 | Cloudy | Vilot, Director |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| Fort de France, Martinique | 29.85 | 758.1 | 29.87 | 758.8 | 81.0 | 27.2 | | | | | | | | | | 0 | 0 | | L'Abbé Marchési |
| Lyons | | | 29.90 | 759.5 | 70.9 | 21.6 | 38 | | | | | | 6 | | | 0.165 | 4.2 | Fair | M. Jeys. |
| Marseilles, Observatory | | | 29.89 | 759.2 | 69.4 | 20.8 | 42 | S | | | 2 | | 3 | | | 0 | 0 | Partly cl'dy | The Staff. |
| Mont-Louis | 24.80 | 629.8 | 30.11 | 764.8 | 62.6 | 17.0 | 43 | S | 22.4 | 10.00 | | | 4 | | SSW | 0 | 0 | | Mr. Falguère. |
| Nice | | | 29.96 | 761.0 | 62.8 | 17.1 | 90 | W | | | 2 | | 4 | | | 0 | 0 | Cloudy | Dr. A. Niepce. |
| Paris, Montsouris Obs'y | 29.45 | 748.1 | 29.73 | 755.1 | 68.0 | 20.0 | 59 | W | | | 3 | | 3 | | WSW | 0.717 | 18.2 | | Marié Davy, Director |
| Perpignan | | | 29.91 | 759.6 | 64.8 | 18.2 | 69 | E | 5.6 | 2.50 | | | 7 | | SW | 0 | 0 | | Dr. Fines. |
| Pic du Midi, (Summit,) H. P. | | | | | | | | | | | | | | | | | | | M. Baylac. |
| Pic du Midi, (Plantade,) H. P. | 22.45 | 570.3 | | | 47.5 | 8.6 | | SW | | | 4 | | 4 | | | 0.039 | 1.0 | Cloudy | Gen'l de Nansouty |
| Saint Maur, (near Paris) | 29.58 | 751.2 | 29.74 | 755.4 | 66.6 | 19.2 | 62 | W | | | 2 | | 6 | | | 0.583 | 14.8 | | E. Renou. |
| Toulouse, Observatory | 29.16 | 740.6 | 29.88 | 758.9 | 67.1 | 19.5 | 60 | SSE | | | 6 | | 1 | | | 0.297 | 7.55 | | The Staff. |
| Tours | 29.60 | 751.7 | 29.79 | 756.7 | 65.8 | 18.8 | 72 | W | | | 1 | | 8 | | W | 0.059 | 1.5 | | C. Marquet. |
| Versailles, (near Paris) | | | 29.75 | 755.7 | 68.0 | 20.0 | 56 | NW | | | 2 | | 8 | | | 0.717 | 18.20 | Very cloudy | Dr. A. Bérigny. |
| Zi-Ka-Wei, (near Shanghai) | 29.69 | 754.0 | 29.71 | 754.6 | 66.9 | 19.4 | 96 | SW | 6.3 | 2.8 | | | 2 | | | 0.110 | 2.8 | Clear | Marc Dechevrens, S. J |

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Mirecourt the cloud directions are apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit), 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer: Corrected for instrum'tal error and temperature. Inches. | Barometer: Corrected for instrum'tal error and temperature. Millimeters. | Barometer: Reduced to sea-level. Inches. | Barometer: Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | 28.92 | 734.6 | 29.76 | 755.9 | 59.9 | 15.5 | 83 | SE | | | 6 | | 10 | | | | | Raining | Prof. Dr. Hoh. |
| Berlin | 29.66 | 753.4 | 29.83 | 757.6 | 68 9 | 20.5 | 29 | S | | | 1 | | 5 | | | 0 | 0 | | Prof. Arndt. |
| Breslau | 29.37 | 745.9 | 29.89 | 759.3 | 66.4 | 19.1 | 36 | ESE | | | 1 | | 2 | | | 0 | 0 | | Royal University Obs'y |
| Carlsruhe | 29.35 | 745.6 | 29.78 | 756.3 | 56 8 | 13.8 | 81 | SW | | | 2 | | 10 | | | 0.374 | 9.5 | Raining | Albert Senz. |
| Cassel | 29.24 | 742.7 | 29.84 | 758.6 | 66.9 | 19.4 | 54 | SSE | | | 2 | | 8 | SSW | | 0.135 | 3.42 | | Dr. H. Möhl. |
| Crefeld | 29.54 | 750.3 | 29.70 | 754.4 | 65.8 | 18.8 | 62 | SE | | | 1 | | 9 | | | 0 | 0 | | Director Lose. |
| Emden | 29.65 | 753.2 | 29.69 | 754.1 | 71.6 | 22.0 | 41 | E | | | 3 | | 1 | | | Inap. | Inap. | | Prof. Prestel. |
| Frankfort on the Main | 29.45 | 748.0 | 29.80 | 757.0 | 58.1 | 14.5 | 82 | SSW | | | 1 | | 10 | | | 0.091 | 2.3 | Raining | Physical Society. |
| Friedrichshafen | 28 45 | 722.7 | 29.87 | 758.7 | 57.4 | 14.1 | 86 | SSW | | | 3 | | 10 | WSW | | 0.193 | 4.9 | | M. Wilhelm. |
| Hamburg | 29.71 | 754.5 | 29.77 | 756.2 | 66.9 | 19.4 | 42 | SE | | | 4 | | 2ck | S | | 0 | 0 | Very fine | Captain F. Hegemann. |
| Kiel | 29.76 | 756.0 | 29.78 | 756.4 | 62.1 | 16.7 | 54 | ENE | | | 3 | | 7 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.93 | 760.1 | 30.01 | 762.2 | 52.2 | 11.2 | 44 | NE | | | 3 | | 2 | | | 0 | 0 | | Prof. E Luther |
| Köslin | | | 29.89 | 759.1 | 61.3 | 16.3 | | E | | | 2 | | 0 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.39 | 746.4 | 29.79 | 756.7 | 70.2 | 21.2 | 34 | SE | | | 2 | | 3 | SE | | 0 | 0 | | Prof. Bruhns. |
| Memel, Naval School | 29.99 | 761.8 | 30.04 | 763.0 | 44.8 | 7.1 | 54 | NW | | | 4 | | 2s | | E | | | D. clouds | Reinbrecht and Skalweit. |
| Neufahrwasser | 30.01 | 762.2 | 30.02 | 762.6 | 48.6 | 9.2 | 57 | NE | | | 3 | | 0 | | | 0 | 0 | | A. Lothes. |
| Posen | 29.67 | 753.6 | 29.96 | 761.0 | 65.8 | 18.8 | 42 | E | | | 2 | | 5 | | | 0 | 0 | | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.27 | 743.4 | 29.81 | 757.2 | 56.3 | 13.5 | 90 | S | | | 3 | | 10 | W | | 0.478 | 12.16 | Raining | Dr. Schur. |
| Stuttgart | 28.86 | 733.1 | 29.79 | 756.6 | 59.0 | 15.0 | 75 | W | | | 1 | | 10 | | | 0.276 | 7.0 | Raining | Prof. Schoder. |
| Treves, (Trier) | 29.13 | 739.9 | 29.65 | 753.0 | 58.1 | 14.5 | 88 | SW | | | 5 | | 10 | | | 0.258 | 6.54 | Foggy | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.33 | 719.6 | 29.80 | 756.9 | 56.5 | 13.6 | 88 | SSE | 2 | 1 | | | 10 | | SSW | 0.091 | 2.3 | Raining | Dr. Von Bebber. |
| Wustrow, Naval School | 29.92 | 760.0 | 29.96 | 761.0 | 61.0 | 16.1 | 55 | E | | | 3 | | 2 | | | 0 | 0 | | E. F. Schütz. |
| GERMAN NAVAL SERIES. | | | | | | | | | | | | | | | | | | | |

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.66 | 753.4 | 30.05 | 763.2 | 65.8 | 18.8 | | SW | | | 1.5 | | | | | | | Cloudy | Dr. J. F. J. Schmidt. |

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 29.68 | 753.8 | 29.73 | 755.1 | 84.8 | 29.3 | 73 | SW | 38? | 17.0? | | 2 | N | N | | 0 | 0 | D. clouds | |
| Deesa | 29.24 | 742.6 | 29.70 | 754.2 | 98.7 | 37.1 | 29 | WSW | | | | 1 | W | | | 0 | 0 | D. clouds | |
| Bombay | 29.72 | 754.9 | 29.76 | 755.9 | 86.4 | 30.2 | 65 | WNW | 25 | 11.2 | | 0 | | | | 0 | 0 | Blue sky | |
| Poona | 27.70 | 703.7 | 29.64 | 752.9 | 92.7 | 33.7 | 36 | N | | | | 2 | | | | 0 | 0 | Dust-whirl | |
| Lahore | 28.94 | 735.1 | 29.66 | 753.2 | 97.7 | 36.5 | 23 | Calm | 1.6 | 0.7 | | 0 | | | | 0 | 0 | Blue sky | |
| Belgaum | 27.28 | 692.9 | 29.78 | 756.4 | 82.9 | 28.3 | 73 | W | 11 | 4.9 | | 7 | NE;W | | | 0.04 | 1.0 | Thunder | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 28.80 | 731.4 | 29.67 | 753.7 | 90.8 | 32.7 | 31 | Calm | 5.5 | 2.5 | | 9 | | | | 0 | 0 | | |
| Agra | 29.17 | 740.9 | 29.72 | 755.0 | 87.3 | 30.7 | 35 | N | | | | 10 | W | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.63 | 727.1 | 29.62 | 752.5 | 100.4 | 38.0 | 22 | SW | 5.1 | 2.3 | | 6 | | E | | 0 | 0 | D. clouds | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.30 | 744.3 | 29.67 | 753.5 | 92.2 | 33.4 | 40 | SW | 1.4 | 0.6 | | 1 | | | | 0 | 0 | D. clouds | |
| Allahabad | 29.34 | 745.2 | 29.64 | 752.8 | 99.7 | 37.6 | 25 | Calm | 1.6 | 0.7 | | 4 | | W | | 0 | 0 | D. clouds | |
| Patna | 29.49 | 749.1 | 29.67 | 753.6 | 91.7 | 33.2 | 51 | E | 6.1 | 2.7 | | 0 | | | | 0 | 0 | Blue sky | |
| Hazaribagh | 27.70 | 703.7 | 29.66 | 753.2 | 91.8 | 33.2 | 21 | N | 9.5 | 4.2 | | 1 | | | | 0 | 0 | | |
| Cuttack | 29.66 | 753.4 | 29.74 | 755.5 | 88.6 | 31.4 | 63 | S | 8.8 | 3.9 | | 4 | | | | 0 | 0 | D. clouds | |
| Calcutta (Alipore) | 29.75 | 755.6 | 29.77 | 756.1 | 84.5 | 29.2 | 56 | E | 12 | 5.4 | | 10 | | S | | 0 | 0 | D. clouds | |
| Goalpara | 29.39 | 746.5 | 29.78 | 756.3 | 78.8 | 26.0 | 73 | E | 5.0 | 2.2 | | 1 | W | | | 0.83 | 21.1 | D. clouds | |
| Chittagong | 29.72 | 755.0 | 29.81 | 757.3 | 85.1 | 29.5 | 71 | S | 5.4 | 2.4 | | 4 | | | | 0 | 0 | | |
| Sibsagar | 29.52 | 749.7 | 29.86 | 758.4 | 74.9 | 23.8 | 86 | S | 2.4 | 1.1 | | 8 | SSW | SSW | | 0.52 | 13.2 | D. clouds | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.34 | 719.8 | 29.66 | 753.4 | 95.5 | 35.3 | 25 | SW | 4.8 | 2.1 | | 3 | SE | | | 0 | 0 | D. clouds | |

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

## ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Udine | 29.52 | 749.7 | 29.92 | 760.0 | 58.8 | 14.9 | 60 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | 0.031 | 0.8 | ..... | Prof. Giovanni Codig. |
| Padua | 29.80 | 757.0 | 29.91 | 759.7 | 61.5 | 16.4 | 61 | SW | 1.8 | 0.8 | ..... | ..... | 10 | W | ..... | 0.020 | 0.5 | ..... | Prof. Dott. Lorenzioni |
| Vicenza | 29.72 | 754.9 | 29.91 | 759.7 | 60.4 | 15.8 | 74 | SW | 4.3 | 1.9 | ..... | ..... | 9 | W | ..... | 0.039 | 1.0 | ..... | Conte Alm. Da Schio. |
| Bergamo | 28.62 | 726.9 | 29.92 | 760.0 | 57.2 | 14.0 | 69 | NW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.087 | 2.2 | ..... | Prof. Trionfini Carlo. |
| Milan | 29.46 | 748.2 | 29.97 | 761.2 | 58.8 | 14.9 | ..... | N | ..... | ..... | 1 | ..... | 9 | W | ..... | 0 | 0 | ..... | Prof. Schiaparelli. |
| Moncalieri | 29.03 | 737.3 | 29.93 | 760.1 | 59.4 | 15.2 | 69 | NNW | 1.8 | 0.8 | ..... | ..... | 9 | N | ..... | 0.028 | 0.7 | ..... | Prof. P. F. Denza. |
| Mondovi | 28.02 | 711.7 | 29.92 | 759.9 | 54 0 | 12.2 | 80 | NW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.051 | 1.3 | ..... | Prof. D. C. Bruno. |
| Porto Maurizio | 29.74 | 755.3 | 29.96 | 760 9 | 60.4 | 15.8 | 78 | E | ..... | ..... | 2 | ..... | 5 | W | ..... | 0 | 0 | ..... | Prof. L. Vassallo. |
| Genoa | 29.81 | 757.1 | 29.98 | 761.4 | 63.0 | 17.2 | 64 | SE | 10.5 | 4.7 | ..... | ..... | 8 | S | ..... | 0.031 | 0.8 | ..... | Prof. G. M. Garibaldi. |
| Parma | 29.65 | 753.1 | 29.97 | 761.1 | 64.4 | 18.0 | 56 | SW | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0.008 | 0.2 | ..... | Prof. P. Pigorini. |
| Florence | 29.74 | 755.4 | 29.99 | 761.8 | 62.6 | 17.0 | 62 | SW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.024 | 0.6 | ..... | Cav. F Meucci. |
| Leghorn | 29.91 | 759.8 | 30.00 | 761.9 | 62.2 | 16.8 | 76 | ESE | 3.1 | 1.4 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. P. Monte. |
| Pesaro | 29.94 | 760.4 | 29.98 | 761.6 | 62.1 | 16.7 | 78 | SW | 3.1 | 1.4 | ..... | ..... | 10 | SW | ..... | 0 | 0 | ..... | Prof. Luigi Guidi. |
| Urbino | 28.43 | 722.2 | 29.97 | 761.3 | 57.2 | 14.0 | 78 | SW | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.059 | 1.5 | ..... | Prof. P. Serpieri. |
| Grosseto | 29.90 | 759.5 | 30.01 | 762.3 | 62.6 | 17.0 | 74 | SSE | ..... | ..... | 2 | ..... | 7 | S | ..... | 0.016 | 0.4 | ..... | Avv. P. Ponticelli. |
| Rome | 29.88 | 759.0 | 30.06 | 763.4 | 64.0 | 17.8 | 70 | E | 7.4 | 3.3 | ..... | ..... | 10 | ..... | ..... | 0.016 | 0.4 | ..... | Prof. P. G. S. Ferrar |
| Naples, O. U | 29.89 | 759.2 | 30.09 | 764.2 | 67.5 | 19.7 | 66 | SW | ..... | ..... | 2 | ..... | 10 | SW | ..... | 0 | 0 | ..... | Prof. L. Palmieri. |
| Lecce | ..... | ..... | ..... | ..... | 68.4 | 20.2 | 54 | S | 6.3 | 2.8 | ..... | ..... | 5 | S | ..... | 0 | 0 | ..... | Prof. C. De Giorgi. |
| Cagliari | 29.74 | 755.4 | 29.93 | 760.3 | 70.9 | 21.6 | 53 | SE | ..... | ..... | 2 | ..... | 4 | NW | ..... | 0 | 0 | ..... | Prof. A. Pacinotti. |
| Cosenza | 29.18 | 741.2 | 30.06 | 763.4 | 70.2 | 21.2 | 90 | SW | 1.8 | 0.8 | ..... | ..... | 9 | ..... | ..... | 0.020 | 0.5 | ..... | Prof. F. D. Conti. |
| Palermo | 29.75 | 755.7 | 30.00 | 762.1 | 64.6 | 18.1 | 57 | E | 5.6 | 2.5 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | Prof. G. Cacciatore. |
| Syracuse | 29.97 | 761.1 | 30.04 | 763.0 | 67.3 | 19.6 | 60 | SSE | ..... | ..... | 4 | ..... | 10 | SW | ..... | 0 | 0 | ..... | Prof. V. Giuliano. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Naples, S. R. | 29.51 | 749.6 | 30.07 | 763.7 | 62.6 | 17.0 | 70 | WNW | 3.8 | 1.7 | ..... | ..... | 9 | NW | ..... | 0 | 0 | ..... | Prof. F. Brioschi. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

## JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nagasaki | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Tokei (Yeddo) | 29.98 | 761.5 | 30.05 | 763.3 | 60.1 | 15.6 | 92 | S | 6.3 | 2.8 | ..... | ..... | 9s | ..... | ..... | 0 | 0 | Cloudy | The Observatory. |
| Tokei (Yeddo) University | 29.94 | 760.5 | 30.04 | 763.1 | 61.5 | 16.4 | 91 | S | 5 | 2.2 | ..... | 5cs | ..... | ..... | ..... | 0.02 | 0.5 | Fair | Prof. P. V. Veeder. |

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

## MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aguascalientes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. N. Marin, M. D. |
| Córdoba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | C. Peña, M. D. |
| Cuernavaca | ..... | ..... | ..... | ..... | 67 1 | 19.5 | 39 | N | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | L. Castillo, A. E. |
| Guadalajara | 25.02 | 635.5 | 30.05 | 763.3 | 47.3 | 8.5 | 51 | SW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | Prof. L. Perez. |
| Guanajuato | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. V. Fernandez |
| Leon | ..... | ..... | ..... | ..... | 59.7 | 15.4 | 46 | NNW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | Prof. M. Leal. |
| Mexico | 23.09 | 586.4 | 30.07 | 763.7 | 59.4 | 15.2 | 60 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | Central Observatory. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | N. N. |
| Orizaba | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | I. Orozco, M. D. |
| Pabellon, (Aguascalts) | ..... | ..... | ..... | ..... | 50.7 | 10 4 | 41 | W | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very clear | M. V. de Leon, M. E. |
| Puebla | 23.32 | 592.3 | 30.03 | 762.7 | 50.2 | 10.1 | 78 | E | 2.2 | 1.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | Prof. B. Gonzalez. |
| Toluca | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Prof. C. Velazquez. |
| Tlacotalpam | 30.04 | 762.9 | 30.05 | 763.2 | 74.3 | 23 5 | 83 | N | 0.9 | 0.4 | ..... | 5ck | 2n | ..... | ..... | 0 | 0 | Threatening | Prof. F. R. Bayly. |
| San Luis Potosi | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | G. Barroeta, M. D. |
| Vera-Cruz | 29.99 | 761.8 | 30.02 | 762.5 | 77.0 | 25.0 | 72 | NW | 11.2 | 5.0 | ..... | 4c | 5ck | NW | ..... | Inap | Inap. | Cloudy | Prof. J. Rossell. |
| Zacatecas | ..... | ..... | ..... | ..... | 57.2 | 14.0 | 54 | SW | 0.9 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | J. A. Bonilla, M. E. |
| Puebla, (Catholic Institute) | 23.34 | 592.9 | 30.08 | 764.1 | 50.0 | 10.0 | 41 | ENE | 2.7 | 1.2 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Hazy | P. Spina. [M.M. D. D. |
| Morelia | 24.00 | 609.5 | ..... | ..... | 59.0 | 15.0 | 64 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Very hazy | M. Tena, F. L. Param. |
| Durango | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | M. V. de Leon, C. E. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Orizaba, 1,323 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Morelia, 1,940 m., or 6,364.5 ft. The rain fall is generally measured at 6, a. m. local time. The instrumental errors of the barometers are not known. The data are published as given.

## NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flushing | 29.71 | 754.5 | 29.71 | 754.5 | 64.8 | 18.2 | ..... | SE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Groningen | 29.65 | 753.0 | 29.70 | 754.4 | 66.7 | 19.3 | ..... | ESE | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Helder | 29.68 | 753.9 | 29.68 | 753.9 | 58.8 | 14.9 | ..... | E | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 0 | 0 | ..... | |
| Hellevoetsluis | 29.71 | 754 5 | 29.71 | 754.5 | 70.2 | 21.2 | 69 | SSW | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Utrecht | 29.67 | 753.5 | 29.71 | 754.7 | 64.4 | 18.0 | 70 | ESE | ..... | ..... | 1 | ..... | 8 | ..... | ..... | 0.016 | 0.4 | Very cloudy | H. v d Brink. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

## NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

| STATIONS. | Barometer. Corrected for instrumental error and temperature. Inches. | Barometer. Corrected for instrumental error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 0—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather | Observer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bergen | 29.84 | 758.0 | 29.90 | 759.4 | 57.9 | 14.4 | 40 | NW | 15.7 | 7.0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Brönö | 29.95 | 760.6 | 29.98 | 761.6 | 59.0 | 10.0 | 50 | W | 9 | 4 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | ..... | |
| Christiania | 29.73 | 755.2 | 29.87 | 758.8 | 60.8 | 16.0 | 33 | ESE | 0 | 0 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | |
| Tromsö | 30.06 | 763.5 | 30.10 | 764.6 | 31.6 | — 0.2 | 78 | NE | 7 | 3 | ..... | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

## PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angra, (Azores) | 29.85 | 758.3 | 30.06 | 763.4 | 58.3 | 14.6 | 76 | NNE | 7.4 | 3.3 | ..... | ..... | 5 | ..... | ..... | 0 | 0 | ..... | Dr. J. A. Sampaio. |
| Campo Major | 28.93 | 734.8 | 29.93 | 760.3 | 71.6 | 22.0 | 46 | SW | 8.1 | 3.6 | ..... | ..... | 8 | SW | ..... | 0.039 | 1.0 | ..... | Dr. A. M. R. dos Santos |
| Funchal, (Madeira) | 29.91 | 759.8 | 30.00 | 762.0 | 69.3 | 20.7 | 68 | SW | 8.7 | 3.9 | ..... | ..... | 1 | ..... | ..... | 0.012 | 0.3 | ..... | Capt. D. A. de Cunha. |
| Lisbon, Observatory | 29.59 | 751.5 | 29.94 | 760.5 | 64.9 | 18.3 | 83 | SW | 16.1 | 7.2 | ..... | ..... | 9 | ..... | ..... | 0.047 | 1.2 | ..... | The Staff. |
| Ponta Delgada, (Azores) | 29.98 | 761.4 | 30.05 | 763.2 | 60.4 | 15.8 | 67 | N | 9.4 | 4.2 | ..... | ..... | 4 | ..... | ..... | 0.012 | 0.3 | ..... | |

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

| Naval Series. Vessels. | | | | | | | | | | | | | | | Sea or swell. Height scale 0-9 | Sea or swell. Direction from — | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bartholomew Dias | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | R. A. T. Pinha, Com'd. |
| D. Fernando | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. M. de Sande, Com'd. |
| India | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. D. Pedroso, Com'd. |
| Mindello, Mozambique, Mozambique | 29.91 | 759.6 | 29.91 | 759.8 | 82.4 | 28.0 | ..... | S | ..... | ..... | 5 | ..... | 1 | ..... | S | 2 | ..... | Blue sky | J. F. R. R. Bastos, Com'd't. |
| Quanza | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | A. J. de Mattos, Com'd't. |
| Rio Douro, S. 25° 58′, E. 32° 37′ | ..... | ..... | 30.11 | 764.9 | 77.0 | 25.0 | ..... | E | ..... | ..... | 3 | ..... | 1 | ..... | E | 2 | E | D. clouds | J. T. d'Oliveria, Com'd't. |
| Sado, Porto Praya, Cape Verde Islands. | 29.99* | 761.8* | 30.00* | 762.1* | 82.4 | 28.0 | ..... | NNE | ..... | ..... | 7 | ..... | 1 | ..... | Calm | 5 | NNE | D. clouds | A. N. P. Sampaio, Com'd't. |
| Sá da Bandeira, S. 12° 14′ 2″, E. 12° 59′ 2″ | 29.79 | 756.6 | 29.79 | 756.7 | ..... | ..... | ..... | SW | ..... | ..... | 3 | ..... | 3 | ..... | SW | 2 | SW | D. clouds | F. Texeira da Silva, Com'd't. |
| Tejo, N. 22° 10′ E. 113° 32′ | ..... | ..... | 29.99 | 761.7 | 78.8 | 26 | ..... | E | ..... | ..... | 6 | ..... | 6n | ..... | E | 3 | E | ..... | F. J. Ferreina, dos Amas, Com'd't |

Note.—The originals, except for S. S. Tejo, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity. *Aneroid.

## RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | 29.47 | 748.5 | 29.88 | 759.0 | 61.5 | 16.4 | 44 | NNW | 4 | 2 | ..... | ..... | 3k | ..... | ..... | ..... | ..... | ..... | Astronomical Obs. |
| Wilna | 29.54 | 750 2 | 29.96 | 760.9 | 47.5 | 8.6 | 28 | NNE | 2 | 1 | ..... | ..... | 3 | ..... | ..... | ..... | ..... | Light clouds | Astronomical Obs. |
| Dorpat | 29.74 | 755.3 | 29.98 | 761.6 | 44.6 | 7.0 | 44 | W | 4 | 2 | ..... | ..... | 10k | ..... | ..... | ..... | ..... | ..... | Prof. Dr. Weihrauch. |
| St. Petersburg | 29.90 | 759.5 | 29.92 | 759.9 | 37.8 | 3.2 | 71 | NE | 9 | 4 | ..... | ..... | 9kn | ..... | ..... | ..... | ..... | ..... | Central Physical Obs. |
| Knopio | 29.60 | 751.9 | 29.93 | 760.3 | 35.8 | 2.1 | 100 | N | 7 | 3 | ..... | ..... | 10 [n | ..... | ..... | ..... | ..... | ..... | Ch. Forsten. |
| Kieff | 29.25 | 743.0 | 29.89 | 759.1 | 52.9 | 11.6 | 47 | SSE | 7 | 3 | ..... | ..... | 8k;ks;c; | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Nikolaiev | 29.95 | 760.6 | 30.02 | 762.4 | 56.5 | 13.6 | 36 | NNW | 13 | 6 | ..... | ..... | 3k | ..... | ..... | ..... | ..... | ..... | Kurdakof. |
| Kertch | 29.93 | 760.2 | 29.95 | 760.7 | 53.6 | 12.0 | 62 | N | 9 | 4 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | Lignt clouds | Lagorio. |
| Moscow | 29.32 | 744.7 | 29.88 | 758.9 | 39.6 | 4.2 | 41 | N | 9 | 4 | ..... | ..... | 8ks | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Lugan | 29.59 | 751.6 | 29.80 | 756.8 | 51.8 | 11.0 | 30 | NNW | 9 | 4 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Archangel | 29.82 | 757.5 | 29.84 | 758.0 | 30.6 | — 0.8 | 81 | WNW | 13 | 6 | ..... | ..... | 5cs | ..... | ..... | ..... | ..... | ..... | Ogorodnikof. |
| Tiflis | 28.33 | 719.5 | 29.71 | 754.7 | 62.6 | 17.0 | 47 | W | 22 | 10 | ..... | ..... | 7ks | ..... | ..... | ..... | ..... | ..... | Physical Observatory |
| Astrakhan | 29.69 | 754.1 | 29.61 | 752.0 | 69.3 | 20.7 | 44 | WNW | 7 | 3 | ..... | ..... | 9kn | ..... | ..... | ..... | ..... | ..... | Sebastianof. |
| Krotkowo* | 29.15 | 740.4 | 29.63 | 752.5 | 41.2 | 5.1 | 53 | NW | 11 | 5 | ..... | ..... | 7k | ..... | ..... | ..... | ..... | ..... | Cand. Fatjanow. |
| Kasan | 29.30 | 744.1 | 29.57 | 751.0 | 40.5 | 4.7 | 62 | W | 4 | 2 | ..... | ..... | 9k | ..... | ..... | ..... | ..... | ..... | Physical Cabinet. |
| Orenburg | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Tschernischel. |
| Ekaterinburg | 28.50 | 723.8 | 29.42 | 747.3 | 51.1 | 10.6 | 90 | Calm | 0 | 0 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Nukuss | 29.37 | 746.1 | 29.59 | 751.6 | 93.7 | 34.3 | 18 | SSE | 18 | 8 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | |
| Kasaly | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Bobrof. |
| Tashkend | 28.33 | 719.5 | 29.96 | 760.9 | 77.7 | 25.4 | 38 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Michelson. |
| Barnaul | 29.58 | 751.4 | 30.10 | 764.4 | 59.9 | 15.5 | 29 | Calm | 0 | 0 | ..... | ..... | 0 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Yeniseisk | 29.69 | 754.2 | 30.01 | 762.2 | 60.1 | 15.6 | 43 | W | 2 | 1 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | Marks. |
| Irkutsk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Usolzef. |
| Peking, (China) | 29.96 | 760.9 | 30.10 | 764.5 | 59.9 | 15.5 | 43 | SE | 4 | 2 | ..... | ..... | 7n | ..... | ..... | ..... | ..... | ..... | Physical Observatory. |
| Nertchinsk | 27.72 | 704.0 | 29.83 | 757.6 | 32.5 | 0.3 | 69 | NW | 17 | 7 | ..... | ..... | 10 | ..... | ..... | ..... | ..... | ..... | Meteorological Obs. |
| Vladivostock | 29.80 | 756.8 | 29.89 | 759.2 | 45.5 | 7.5 | 73 | S | 2 | 1 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | ..... | |
| Nikolaievsk, on the Amoor | ..... | ..... | ..... | ..... | 31.1 | — 0.5 | 100 | E | 2 | 1 | ..... | ..... | 10n | ..... | ..... | ..... | ..... | Snowing | |

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 48° 34′.

## SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona, Met. Obs'y | 29.77 | 756.1 | 29.87 | 758.8 | 65.8 | 18.8 | 66 | E | 2.3 | 1.03 | ..... | 7 | 2 | SW | ..... | 0 | 0 | Solar halo | Antonio Rave, Directo. |
| Bilbao, Met. Obs'y | 29.74 | 755.5 | 29.80 | 756.9 | 81.5 | 27.5 | 39 | NW | 2.3 | 1.02 | ..... | 3 | 2 | W | ..... | 0.012 | 0.3 | Cloudy | Prof. Manuel de Naveran |
| Burgos, Met. Obs'y | 26.95 | 684.5 | ..... | ..... | 68.0 | 20.0 | 66 | S | 12.7 | 5.66 | ..... | ..... | 4 | ..... | ..... | 0 | 0 | Cloudy | Domingo Martin y Perez. |
| Madrid, Royal Observatory | 27.71 | 703.8 | 29.86 | 758.4 | 72.3 | 22.4 | 46 | SW | 17.2 | 7.67 | ..... | 5 | 2 | WNW | ..... | Inap. | Inap. | ..... | The Staff. |
| Murcia, Met. Obs'y | 29.73 | 755.2 | 29.88 | 758.9 | 73.4 | 23.0 | 69 | SSW | 0.7 | 0.36 | ..... | 5 | 5 | E | ..... | 0.136 | 3.45 | Raining | Olnyo Diaz, Director. |
| Santiago, Met. Obs'y | 28.82 | 732.1 | 29.70 | 754.4 | 61.3 | 16.3 | 82 | SW | 25.5 | 11.39 | ..... | ..... | 8 | ..... | ..... | 0.488 | 12.4 | Cloudy | R. Gil Villanueva, Dir |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Havana, Cuba, W. I | 29.78 | 756.3 | 29.84 | 758.0 | 76.9 | 24.9 | 84 | W | 4.3 | 1.9 | ..... | 0 | 3kn | ..... | ..... | 0.606 | 15.4 | Fair | Benito Vines, S. J |
| San Fernando, Naval Obs'y | 29.89 | 759.2 | 29.99 | 761.7 | 66.2 | 19.0 | 89 | WNW | 10.1 | 4.5 | ..... | 0 | 10 | ..... | NW | 0.085 | 2.2 | Light rain | Capt. C. Pujazon, R. N., Dir. |
| San Juan de PortoRico, W. I. | 29.93 | 760.1 | 30.02 | 762.4 | 83.8 | 28.8 | 76 | SE | 3.4 | 1.50 | ..... | 6k | 3k | SE | SE | 0 | 0 | Cloudy | Leonardo de Tejeda, Chief of Engineers. |

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

## SWEDISH SERIES.



Furnished by the cooperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

| STATION. | Barometer. Corrected for instrum'tal error and temperature. | | Reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. Direction. | Velocity. | | Force. | Clouds. Amount. | | Clouds. Direction. | | Rain-fall or melted snow in the past 24 hours. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inches. | Millimeters. | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0–10. | Up'er 0–10. | Low'r 0–10. | Upper. From— | Lower. From— | Inches. | Millimeters. | | |
| Haparanda | 30.04 | 763.0 | 30.08 | 764.0 | 36.0 | 2.2 | ..... | NNE | ..... | ..... | 6 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Umea | 29.84 | 757.9 | 29.89 | 759.2 | 38.5 | 3.6 | 47 | SE | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Hernosand | 30.01 | 762.3 | 30.07 | 763.6 | 45.0 | 7.2 | 55 | ENE | ..... | ..... | 2 | ..... | 9 | ..... | ..... | 0 | 0 | ..... | |
| Stockholm | 29.82 | 757.5 | 30.00 | 762.0 | 47.8 | 8.8 | 38 | SE | ..... | ..... | 4 | ..... | 10 | ..... | ..... | 0 | 0 | ..... | |
| Wisby | 29.95 | 760.7 | 30.01 | 762.2 | 48.6 | 9.2 | 51 | WNW | ..... | ..... | 6 | ..... | 3 | ..... | ..... | 0 | 0 | ..... | |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Upsala | 29.93 | 760.3 | 30.01 | 762.2 | 45.7 | 7.6 | 50 | ESE | 7.4 | 3.3 | ..... | ..... | 10 | ..... | ..... | 0.071 | 1.80 | ..... | Dr. Hildebrandsson. |

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

## SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geneva | 28.48 | 723.3 | 29.89 | 759.1 | 59.4 | 15.2 | 62 | SSW | ..... | ..... | 2 | ..... | 10 | ..... | ..... | 0.358 | 9.1 | Covered | The Observatory. |
| Zurich | 28.24 | 717.7 | 29.89 | 759.3 | 54.0 | 12.2 | 94 | SE | ..... | ..... | 1 | ..... | 10 | ..... | ..... | 0.276 | 7.0 | Raining | The Observatory. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —1.2 mm.; Thermometer, +1.1 cent.; Relative Humidity, +5 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

## TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constantinople | ..... | ..... | 30.04 | 763.1 | 58.5 | 14.7 | 43 | NE | 12 | 5.5 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | The Observatory. |
| Fao, (Persian Gulf) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Salonica | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B. Stefanidès. |
| Valona | ..... | ..... | 30.10 | 764.4 | 66.6 | 19.2 | ..... | W | ..... | ..... | 2 | ..... | 5 | ..... | ..... | 0 | 0 | Cloudy | A. Bertrand. |
| Varna | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Imperial Observatory. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | |
| Beirut, (Syria,) Lee Obs'y | 29.71 | 754.6 | 29.82 | 757.5 | 69 4 | 20.8 | 69 | SW | ..... | ..... | 3 | ..... | 7ks | ..... | SW | 0.51 | 13.0 | D. clouds | Prof. C. V. A. Van Dyck. |

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople and Beirut, that the barometer is reduced to sea-level.

## CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bathurst, N. B. | 30.22 | 767.6 | 30.29 | 769.4 | 36.8 | 2.7 | 79 | NE | 10 | 8.5 | ..... | 10k | 0 | ..... | ..... | ..... | ..... | Cloudy | Hon. J. Ferguson. |
| Brockville, Ontario | 29.62 | 752.3 | 29.93 | 760.2 | 51 | 10.6 | ..... | NE | 1 | 0.4 | ..... | ..... | 10s | ..... | NE | 0.18 | 4.6 | Cloudy | W. R. Bigg. |
| *Chatham, N. B. | 30.21 | 767.3 | 30.27 | 768.8 | 41 | 5.0 | 65 | NE | 15 | 6.7 | ..... | 2k | 8ks | NE | NE | 0.01 | 0.3 | Cloudy | G. A. Blair. |
| Charlottetown, P. E. Island. | 30.13 | 765.3 | 30.17 | 766.3 | 44 | 6.7 | 81 | NE | 8 | 3.6 | ..... | ..... | 10s | ..... | Calm | 0.010 | 0.25 | Cloudy | H. J. Cundall, C. E. |
| Cornwall, Ontario | 29.72 | 754.9 | 29.91 | 759.7 | 50.6 | 10.3 | 92 | E | ..... | ..... | 8 | ..... | 10s | ..... | ..... | 0.104 | 2.64 | Overcast | James Smith, M. A. |
| Dalhousie, N. B. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 0 | ..... | H. A. Johnson. |
| Esquimault, B. C. | 30.09 | 764 3 | 30.14 | 765.5 | 42.1 | 5.6 | 92 | W | ..... | ..... | ..... | 4cs | 0 | ..... | ..... | 0 | 0 | Fair | W. H. Revis. |
| *Father Point, Quebec | 30.22 | 767.6 | 30.24 | 768.1 | 38 | 3.3 | 79 | E | 36 | 16.1 | ..... | 5ck | 6s | SE | E | 0.10 | 2.5 | Cloudy | J. McWilliams. |
| Fredericton, N. B. | 30.12 | 765.0 | 30.18 | 766.6 | 40.4 | 4.7 | 77 | NE | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | 0.34 | 8.6 | Drizzling | Prof. Harrison. |
| *Fort Garry Manitoba | 28.70 | 729.0 | 29.52 | 749.8 | 44 | 6.7 | 92 | W | 11 | 4.9 | ..... | 2c | 2ks | W | W | 0.180 | 4.57 | Fair | James Stewart. |
| Goderich, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | H. J. Strang, M. A. |
| Granton, Ontario | 28.74 | 730.0 | 29.83 | 757.7 | 51.6 | 10.8 | 100 | Calm | ..... | ..... | 0 | ..... | 10n | ..... | ..... | Inap. | Inap. | Foggy | James Grant. |
| *Halifax, N. S. | 29.92 | 760.0 | 30.06 | 763.5 | 46 | 7.8 | 98 | E | 14 | 6.3 | ..... | ..... | 10n | ..... | ..... | 0.266 | 6.75 | Light rain | F. Allison, M. A. |
| Hamilton, Ontario | 29.49 | 749.0 | 29.86 | 758.4 | 51.7 | 10.9 | 92 | Calm? | ..... | 1? | 10cs | ..... | ..... | ..... | ..... | 0 | 0 | Foggy | Geo. Dickson, M. A. |
| Heart's Content, N. F. | 30.29 | 769.4 | 30.32 | 770.1 | 36 | 2.2 | 70 | E | ..... | ..... | 0 | 3s;k | ..... | ..... | ..... | 0 | 0 | Foggy | Geo. Dickson, M. A. |
| *Kingston, Ontario | 29.56 | 750.8 | 29.89 | 759.2 | 52 | 11.1 | 94 | NE | 9 | 4.0 | ..... | 10cs | 0 | NE | ..... | 0 | 0 | Fine | E. Weedon. |
| Little Glace Bay, N. S. | 30.22 | 767.6 | 30.26 | 768.6 | 37.0 | 2.8 | ..... | NE | 20 | 8.9 | ..... | ..... | 10n | ..... | ..... | 0.21 | 5.3 | Cloudy | S. Woods, M. A. |
| *Montreal, Quebec | 29.76 | 755.9 | 29.96 | 761.0 | 52 | 11.1 | 88 | NE | 12 | 5.4 | ..... | 5cs | 5k | ..... | NE | 0.04 | 1.0 | Misty | C. H. Rigby. |
| *Parry Sound, Ontario | 29.17 | 740.9 | 29.84 | 757.9 | 58 | 14.4 | 84 | SE | 12 | 5.4 | ..... | 2k | 5ks | SE | SE | 0.07 | 1.8 | Cloudy | C. H. McLeod, C. E. |
| Peterboro, Ontario | 29.12 | 739.6 | 29.86 | 758.4 | 56.7 | 13.7 | 87 | E | ..... | ..... | ..... | 8k | 0 | ..... | ..... | 0.02 | 0.5 | Fair | Rev. R. Mosley. |
| Port Dover, Ontario | 29.16 | 740.7 | 29.85 | 758.2 | 51 | 10.6 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0.02 | 0.5 | Foggy | J. F. Jeffers, B. A. |
| Port Hastings, N. S. | 30.14 | 765.5 | 30.19 | 766.8 | 41.6 | 5.3 | ..... | SE | 7 | 3.1 | ..... | ..... | ..... | ..... | ..... | 0.43 | 10.9 | Cloudy | H. Morgan. |
| Port Stanley, Ontario | 29.21 | 741.9 | 29.85 | 758.2 | 50 | 10.0 | 99 | SE | 5 | 2.2 | ..... | ..... | Fog | ..... | ..... | 0 | 0 | Foggy | Peter Grant. |
| *Quebec, Quebec | 29.79 | 756.7 | 30.12 | 765.0 | 45 | 7.2 | 68 | NE | ..... | ..... | 6 | ..... | 10n | ..... | SE | 0.07 | 1.8 | Foggy | M. Payne. |
| *Rockliffe, Ontario | 29.46 | 748.3 | 29.91 | 759.7 | 52 | 11.1 | 90 | E | 6 | 2.7 | ..... | ..... | 10n | ..... | NE | 0.02 | 0.5 | Clearing | Capt. Ashe, R. N. |
| St. Andrews, N. B. | 29.99 | 761.7 | 30.04 | 763.0 | 42 | 5.6 | 89 | E | 8 | 3.6 | ..... | ..... | 10s | ..... | SE | 0.06 | 1.5 | Cloudy | W. H. McIntyre. |
| St. John, N. B. | 29.93 | 760.2 | 30.10 | 764.5 | 41 | 5.0 | 95 | N | 6 | 2.7 | ..... | ..... | 10n | ..... | ..... | 0.26 | 6.6 | Cloudy | Dr. Gove. |
| *Saugeen, Ontario | 29.13 | 739.9 | 29.82 | 757.4 | 58 | 14.4 | 87 | S | 4 | 1.8 | ..... | ..... | 10ks | ..... | ..... | 0.850 | 21.59 | Raining | G. Murdock, C. E. |
| Stayner, Ontario | 29.07 | 738.4 | 29.84 | 757.9 | 55 | 12.8 | 90 | SE | 5 | 2.2 | ..... | ..... | 10n | ..... | S | 0.02 | 0.5 | Cloudy | K. Stewart. |
| Stratford, Ontario | 28.56 | 725.4 | 29.83 | 757.7 | 50.7 | 10.4 | 99 | SE | 3 | 1.3 | ..... | ..... | 10 | ..... | SE | 0.13 | 3.3 | Cloudy | R. J. Cole. |
| *Sydney, C. B. | 30.23 | 767.8 | 30.26 | 768.6 | 39 | 3.9 | 96 | NE | 13 | 5.8 | ..... | ..... | 10n | ..... | ..... | 0.089 | 2.26 | Foggy | C. J. MacGregor, M. A. |
| *Toronto, Ontario | 29.49 | 749.0 | 29.87 | 758.7 | 50 | 10.0 | 96 | E | 2 | 0.9 | ..... | 8cs | Fog | Calm | Calm | 0.02 | 0.5 | Light rain | T. C. Hill. |
| Windsor, N. S. | 29.98 | 761.5 | 30.08 | 764.0 | 50.0 | 10.0 | 100 | E | 12 | 5.4 | ..... | ..... | 10n | ..... | ..... | 0.04 | 1.0 | Cloudy | Magnetic Observatory. |
| Woodstock, Ontario | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0.18 | 4.6 | Raining | Prof. John E. Oram. |
| Sub-Series. | | | | | | | | | | | | | | | | | | | J. Montgomery. |
| St. Johns, Newfoundland | ..... | ..... | ..... | ..... | 36.0 | 2.2 | 80 | NE | ..... | ..... | ..... | ..... | 10 | ..... | ..... | 0.10 | 2.5 | Cloudy | John Delany. |

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,017 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0–10 | Clouds. Amount. Up'er 0–10 | Clouds. Amount. Low'r 0–10 | Clouds. Direction. Upper. From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albany, New York | 29.66 | 753.4 | 29.88 | 758.9 | 55 | 12.8 | 87 | NW | 3 | 1.3 | ..... | ..... | 10s | ..... | Calm | 0.05 | 1.3 | Cloudy | |
| Alpena, Michigan | 29.15 | 740.4 | 29.78 | 756.4 | 53 | 11.7 | 86 | Calm | 0 | 0 | ..... | 2ck | 0 | Calm | ..... | 0.03 | 0.8 | Fair | |
| Atlantic City, New Jersey | 29.84 | 757.9 | 29.86 | 758.4 | 54 | 12.2 | 100 | W | 16 | 7.2 | ..... | ..... | 10s | ..... | N | 0.05 | 1.3 | Cloudy | |
| Augusta, Georgia | 29.69 | 754.1 | 29.87 | 758.7 | 63 | 17.2 | 72 | NW | 3 | 1.3 | ..... | 2cs | 0 | W | ..... | 0 | 0 | Clear | |
| Baltimore, Maryland | 29.82 | 757.4 | 29.87 | 758.7 | 54 | 12.2 | 87 | NE | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 0.26 | 6.6 | Cloudy | |
| Barnegat, New Jersey | 29.84 | 757.9 | 29.86 | 758.4 | 52 | 11.1 | 96 | NE | 12 | 5.4 | ..... | ..... | 10s;fg | ..... | Calm | 0.03 | 0.8 | Cloudy | |
| Bismarck, Dakota | 27.96 | 710.2 | 29.82 | 757.4 | 45 | 7.2 | 46 | W | 20 | 8.9 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | |
| Boise City, Idaho | 27.22 | 691.4 | 30.10 | 764.5 | 35 | 1.7 | 70 | NE | 1 | 0.4 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Boston, Massachusetts | 29.76 | 755.9 | 29.92 | 760.0 | 45 | 7.2 | 100 | N | 7 | 3.1 | ..... | ..... | 10n;fg | ..... | N | 1.54 | 39.1 | Light rain | |
| Brackettville, Texas | 28.79 | 731.3 | 29.80 | 756.9 | 62 | 16.7 | 88 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Breckenridge, Minnesota | 28.70 | 729.0 | 29.88 | 753.9 | 47 | 8.3 | 77 | W | 16 | 7.2 | ..... | 0 | 0 | ..... | ..... | 0.21 | 5.3 | Clear | |
| Brownsville, Texas | 29.92 | 760.0 | 29.98 | 761.5 | 65 | 18.3 | 90 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Buffalo, New York | 29.13 | 739.9 | 29.82 | 757.4 | 47 | 8.3 | 100 | SW | 7 | 3.1 | ..... | ..... | Fog | ..... | Calm | 0.38 | 9.7 | Foggy | |
| Burkes, Arizona | ..... | ..... | ..... | ..... | 62 | 16.7 | 41 | E | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Burlington, Vermont | 29.66 | 753.4 | 29.92 | 760.0 | 56 | 13.3 | 80 | W | 5 | 2.2 | ..... | 2c | 5s | Calm | E | 0.01 | 0.3 | Cloudy | |
| Cairo, Illinois | 29.58 | 751.3 | 29.96 | 761.0 | 62 | 16.7 | 72 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Grant, Arizona | 25.98 | 637.0 | 29.88 | 758.9 | 58 | 11.4 | 42 | NW | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Camp Verde, Arizona | 26.64 | 676.6 | 30.13 | 765.3 | 50 | 10.0 | 65 | NW | ..... | ..... | 1 | 2c | 0 | W | ..... | 0 | 0 | Fair | |
| Campo, California | 27.27 | 692.6 | 29.84 | 757.9 | 39 | 3.9 | 80 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Cape Hatteras, N. Carolina | 29.83 | 757.7 | 29.84 | 757.9 | 66 | 18.9 | 89 | SW | 8 | 3.6 | ..... | 2ks | 5s | SW | SW | 0 | 0 | Fair | |
| Cape Henry, Virginia | 29.76 | 755.9 | 29.78 | 756.4 | 65 | 18.3 | 78 | SW | 10 | 4.5 | ..... | 5cs | 0 | SW | ..... | 0 | 0 | Fair | |
| Cape Lookout, N. Carolina | 29.82 | 757.4 | 29.84 | 757.9 | 66 | 18.9 | 79 | W | 7 | 3.1 | ..... | 10cs | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Cape May, New Jersey | 29.81 | 757.2 | 29.84 | 757.9 | 59 | 15.0 | 88 | NE | 5 | 2.2 | ..... | 2k | 5s | SW | NE | 0.03 | 0.8 | Fair | |
| Charleston, South Carolina | 29.80 | 756.9 | 29.86 | 758.4 | 66 | 18.9 | 64 | NW | 3 | 1.3 | ..... | 8c | 0 | W | ..... | 0 | 0 | Fair | |
| Cheyenne, Wyoming | 24.03 | 610.4 | 29.97 | 761.2 | 31 | — 0.6 | 79 | NW | 4 | 1.8 | ..... | 5cs | 0 | NW | ..... | 0 | 0 | Fair | |
| Chicago, Illinois | 29.14 | 740.1 | 29.83 | 757.7 | 58 | 14.4 | 70 | W | 4 | 1.8 | ..... | 5c | Haze | NW | ..... | 0 | 0 | Fair | |
| Cincinnati Ohio | 29.21 | 741.9 | 29.84 | 757.9 | 58 | 14.4 | 64 | NW | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Cleveland, Ohio | 29.15 | 740.4 | 29.86 | 758.4 | 51 | 10.6 | 93 | W | 4 | 1.8 | ..... | ..... | 10s | ..... | Calm | 0.25 | 6.3 | Cloudy | |
| Coneno, Texas | 27.96 | 710.2 | 29.60 | 751.8 | 62 | 16.7 | 77 | S | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Corsicana, Texas | 29.44 | 747.8 | 29.90 | 759.4 | 60 | 15.6 | 88 | E | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Davenport, Iowa | 29.23 | 742.4 | 29.85 | 758.2 | 59 | 15.0 | 65 | SW | 4 | 1.8 | ..... | 7ck | 0 | W | ..... | 0 | 0 | Fair | |
| Deadwood, Dakota | 25.38 | 644.6 | ..... | ..... | 35 | 1.7 | 80 | S | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | Inap. | Inap. | Clear | |
| Denison, Texas | 29.11 | 739.4 | 29.89 | 759.2 | 61 | 16.1 | 88 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0.37 | 9.4 | Clear | |
| Denver, Colorado | 24.82 | 630.4 | 30.04 | 763.0 | 38 | 3.3 | 45 | N | 4 | 1.8 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Detroit, Michigan | 29.15 | 740.4 | 29.80 | 756.9 | 54 | 12.2 | 87 | N | 2 | 0.9 | ..... | 2ck | 5s | NE | NE | 0.03 | 0.8 | Fair | |
| Dodge City, Kansas | 27.18 | 690.4 | 29.49 | 749.7 | 56 | 13.3 | 81 | SE | 12 | 5.4 | ..... | 5ck | 0 | W | ..... | 0 | 0 | Fair | |
| Dubuque, Iowa | 29.00 | 736.6 | 29.77 | 756.1 | 58 | 14.4 | 64 | SW | 4 | 1.8 | ..... | 5ck | 5s | S | Calm | 0 | 0 | Cloudy | |
| Duluth, Minnesota | 28.90 | 734.0 | 29.56 | 750.8 | 44 | 6.7 | 92 | Calm | 0 | 0 | ..... | ..... | 10n | ..... | ..... | 0.25 | 6.3 | Heavy rain | |
| Eagle Pass, Texas | 29.21 | 741.9 | 29.95 | 760.7 | 60 | 15.6 | 95 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Eastport, Maine | 29.91 | 760.5 | 30.00 | 762.0 | 43 | 6.1 | 100 | NE | 24 | 10.7 | ..... | ..... | 10n | ..... | Calm | 0.48 | 12.2 | Light rain | |
| El Paso, Texas | ..... | ..... | ..... | ..... | 70 | 21.1 | 32 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Erie, Pennsylvania | 29.13 | 739.9 | 29.83 | 757.7 | 55 | 12.8 | 93 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | ..... | 0.07 | 1.8 | Cloudy | |
| Escanaba, Michigan | 29.00 | 738.9 | 29.73 | 755.1 | 52 | 11.1 | 73 | S | 7 | 3.1 | ..... | 2c | 0 | S | ..... | 0 | 0 | Clear | |
| Florence, Arizona | 28.26 | 717.8 | 29.88 | 758.4 | 57 | 13.9 | 63 | W | 4 | 1.8 | ..... | 2c | 0 | N | ..... | 0 | 0 | Fair | |
| Fort Bayard, New Mexico | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| Fort Craig, New Mexico | 25.38 | 644.6 | 29.45 | 748.0 | 48 | 8.9 | 36 | N | 1 | 0.4 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Fort Davis, Texas | 25.13 | 638.3 | 30.09 | 764.3 | 64 | 17.8 | 36 | W | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Fort Gibson, Indian Ter | 29.35 | 745.5 | 29.88 | 758.9 | 59 | 15.0 | 82 | E | 2 | 0.9 | ..... | 2c | 0 | Calm | ..... | 0.15 | 3.8 | Clear | |
| Fort Griffin, Texas | 28.58 | 725.9 | 29.83 | 757.7 | 58 | 14.4 | 81 | Calm | 0 | 0 | ..... | 2cs | 0 | Calm | ..... | 0 | 0 | Clear | |
| Fort St. Michael, Alaska | 29.68 | 753.9 | 29.71 | 754.6 | 24 | — 4.4 | 100 | NE | 9 | 4.0 | ..... | ..... | 10s | ..... | NE | Inap. | Inap. | Cloudy | |
| Fort Sill, Indian Territory | 28.63 | 727.2 | 29.70 | 754.4 | 64 | 17.8 | 83 | SE | 2 | 0.9 | ..... | 0 | 5s | ..... | SE | 0 | 0 | Fair | |
| Galveston, Texas | 29.93 | 760.2 | 29.97 | 761.2 | 69 | 20.6 | 79 | SW | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Grand Haven, Michigan | 29.17 | 740.9 | 29.80 | 756.9 | 55 | 12.8 | 81 | S | 3 | 1.3 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianapolis, Indiana | 29.10 | 739.1 | 29.87 | 758.7 | 57 | 13.9 | 75 | W | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Indianola, Texas | 29.96 | 761.0 | 29.98 | 761.5 | 74 | 23.3 | 81 | S | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksboro, Texas | 28.74 | 730.0 | 29.84 | 757.9 | 63 | 17.2 | 83 | S | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Jacksonville, Florida | 29.85 | 758.2 | 29.87 | 758.7 | 65 | 18.3 | 73 | Calm | 0 | 0 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Keokuk, Iowa | 29.25 | 742.9 | 29.84 | 757.9 | 62 | 16.7 | 61 | W | 6 | 2.7 | ..... | 2cs | Haze | Calm | Calm | 0 | 0 | Fair | |
| Key West, Florida | 29.79 | 756.7 | 29.82 | 757.4 | 75 | 23.9 | 81 | N | 8 | 3.6 | ..... | 5k | 0 | NW | ..... | 0.64 | 16.3 | Fair | |
| Kittyhawk, North Carolina | 29.80 | 756.9 | 29.83 | 757.7 | 66 | 18.9 | 79 | SW | 6 | 2.7 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Knoxville, Tennessee | 28.92 | 734.6 | 29.91 | 759.7 | 56 | 13.3 | 87 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| La Crosse, Wisconsin | 28.94 | 735.1 | 29.65 | 753.1 | 59 | 15.0 | 70 | S | 12 | 5.4 | ..... | ..... | 10s | ..... | Calm | Inap. | Inap. | Cloudy | |
| La Mesilla, New Mexico | 25.94 | 658.9 | 30.09 | 764.3 | 52 | 11.1 | 53 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Laredo, Texas | 29.53 | 750.0 | 29.86 | 758.4 | 64 | 17.8 | 83 | SE | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Leavenworth, Kansas | 29.05 | 737.9 | 29.88 | 758.9 | 56 | 13.3 | 81 | NW | 3 | 1.3 | ..... | ..... | 10ks | ..... | W | 0 | 0 | Cloudy | |
| Los Angeles, California | 29.58 | 751.3 | 29.81 | 757.2 | 57 | 13.9 | 90 | SE | 5 | 2.2 | ..... | ..... | Fog | ..... | Calm | 0.01 | 0.3 | Foggy | |
| Louisville, Kentucky | 29.34 | 745.2 | 29.88 | 758.9 | 61 | 16.1 | 66 | W | 3 | 1.3 | ..... | 0 | Sm'e | ..... | W | Inap | Inap. | Smoky | |
| Lynchburg, Virginia | 29.16 | 740.7 | 29.82 | 757.4 | 64 | 17.8 | 62 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Marquette, Michigan | 28.96 | 735.6 | 29.63 | 752.6 | 58 | 14.4 | 58 | SW | 12 | 5.4 | ..... | 5c | 0 | S | ..... | 0 | 0 | Fair | |
| Mason, Texas | 28.31 | 719.1 | 30.02 | 762.5 | 63 | 17.2 | 72 | SW | 9 | 4.0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Memphis, Tennessee | 29.65 | 753.1 | 29.96 | 761.0 | 62 | 16.7 | 83 | SW | 1 | 0.4 | ..... | 0 | Sm'e | ..... | Calm | 0 | 0 | Clear | |
| Milwaukee, Wisconsin | 29.07 | 738.4 | 29.77 | 756.1 | 59 | 15.0 | 76 | SW | 8 | 3.6 | ..... | 5c | 0 | NW | ..... | 0 | 0 | Fair | |
| Mobile, Alabama | 29.93 | 760.2 | 29.98 | 761.5 | 62 | 16.7 | 72 | NE | 4 | 1.8 | ..... | 2ck | 0 | W | ..... | 0 | 0 | Fair | |
| Montgomery, Alabama | 29.71 | 754.6 | 29.94 | 760.5 | 61 | 16.1 | 67 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Morgantown, West Virginia | 28.79 | 731.3 | 29.82 | 757.4 | 54 | 12.2 | 80 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | W | 0.09 | 2.3 | Cloudy | |
| Mt. Washington, N. H. | 23.69 | 601.7 | 30.05 | 763.3 | 34 | 1.1 | 100 | NE | 39 | 17.4 | ..... | ..... | 10n | ..... | NE | 0.73 | 18.5 | Light rain | |
| Nashville, Tennessee | 29.40 | 746.7 | 29.93 | 760.2 | 58 | 14.4 | 76 | W | 3 | 1.3 | ..... | 0 | Haze | ..... | Calm | 0 | 0 | Hazy | |
| New Haven, Connecticut | 29.78 | 756.4 | 29.89 | 759.2 | 54 | 12.2 | 87 | NE | 9 | 4.0 | ..... | ..... | 10s | ..... | Calm | 0.07 | 1.8 | Cloudy | |
| New London, Connecticut | 29.86 | 758.4 | 29.91 | 759.7 | 53 | 11.7 | 93 | NE | 4 | 1.8 | ..... | ..... | 10s | ..... | NE | 0.07 | 1.8 | Cloudy | |
| New Orleans, Louisiana | 29.90 | 759.4 | 29.96 | 761.0 | 70 | 21.1 | 66 | N | 2 | 0.9 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Newport, Rhode Island | 29.84 | 757.9 | 29.89 | 759.2 | 51 | 10.6 | 86 | N | 6 | 2.7 | ..... | ..... | 10ks | ..... | N | 0.92 | 23.4 | Threatening | |
| New York, New York | 29.72 | 754.9 | 29.89 | 759.2 | 53 | 11.7 | 86 | E | 12 | 5.4 | ..... | ..... | 10s;fg | ..... | NE | 0 | 0 | Cloudy | |
| Norfolk, Virginia | 29.76 | 755.9 | 29.82 | 757.4 | 64 | 17.8 | 68 | N | 6 | 2.7 | ..... | ..... | 10ks | ..... | Calm | 0 | 0 | Cloudy | |
| North Platte, Nebraska | 27.07 | 687.6 | 29.62 | 752.3 | 48 | 8.9 | 63 | N | 4 | 1.8 | ..... | 10k | 0 | W | ..... | 0.03 | 0.8 | Cloudy | |
| Olympia, Washington Ter. | 30.13 | 765.3 | 30.17 | 766.3 | 35 | 1.7 | 90 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0.07 | 1.8 | Cloudy | |
| Omaha, Nebraska | 28.75 | 730.2 | 29.81 | 757.2 | 53 | 11.7 | 86 | NW | 5 | 2.2 | ..... | ..... | 10n | ..... | NW | 0.18 | 4.6 | Light rain | |
| Oswego, New York | 29.55 | 750.6 | 29.87 | 758.7 | 58 | 14.4 | 82 | S | 8 | 3.6 | ..... | 5c | 0 | E | ..... | 0.17 | 4.3 | Fair | |
| Pembina, Dakota | 28.73 | 729.7 | 29.55 | 750.6 | 45 | 7.2 | 76 | W | 15 | 6.7 | ..... | 5c | 0 | W | ..... | 0.18 | 4.6 | Fair | |
| Philadelphia, Pennsylvania | 29.82 | 757.4 | 29.87 | 758.7 | 53 | 11.7 | 93 | NE | 9 | 4.0 | ..... | ..... | 10s | ..... | NE | 0.16 | 4.1 | Cloudy | |
| Phœnix, Arizona | 28.61 | 726.7 | 30.38 | 771.6 | 60 | 15.6 | 60 | NE | ..... | ..... | 1 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pike's Peak, Colorado | 17.73 | 450.3 | 29.94 | 760.5 | 24 | — 4.4 | 61 | SW | 32 | 14.3 | ..... | 8cs | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Pioche, Nevada | 23.93 | 607.8 | 29.70 | 754.4 | 45 | 7.2 | 46 | NW | 8 | 3.6 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Pittsburg, Pennsylvania | 29.04 | 737.6 | 29.84 | 757.9 | 50 | 10.0 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0.01 | 0.3 | Foggy | |
| Port Huron, Michigan | 29.16 | 740.7 | 29.82 | 757.4 | 51 | 10.6 | 93 | W | 2 | 0.9 | ..... | ..... | 10s | ..... | W | 0.17 | 4.3 | Cloudy | |
| Portland, Maine | 29.90 | 759.4 | 29.95 | 760.7 | 50 | 10.0 | 93 | NE | 13 | 5.8 | ..... | ..... | 10n | ..... | Calm | 0.21 | 5.3 | Light rain | |
| Portland, Oregon | 30.12 | 765.0 | 30.23 | 767.8 | 39 | 3.9 | 100 | Calm | 0 | 0 | ..... | ..... | Fog | ..... | Calm | 0.18 | 4.6 | Foggy | |
| Prescott, Arizona | 24.66 | 626.4 | 30.02 | 762.5 | 44 | 6.7 | 60 | SW | ..... | ..... | 2 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Punta Rassa, Florida | 29.85 | 758.2 | 29.87 | 758.7 | 69 | 20.6 | 80 | N | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0.18 | 4.6 | Clear | |

UNITED STATES SERIES.—CONTINUED.

| STATIONS. | BAROMETER. Corrected for instrum'tal error and temperature. Inches. | BAROMETER. Corrected for instrum'tal error and temperature. Millimeters. | BAROMETER. Reduced to sea-level. Inches. | BAROMETER. Reduced to sea-level. Millimeters. | TEMPERATURE OF THE AIR. Fahrenheit. | TEMPERATURE OF THE AIR. Centigrade. | RELATIVE HUMIDITY. Per cent. | WIND. Direction. From— | WIND. Velocity. Miles per hour. | WIND. Velocity. Meters per second. | WIND. Force. 0—10. | CLOUDS. Amount. Up'er 0—10. | CLOUDS. Amount. Low'r 0—10. | CLOUDS. Direction. Upper. From— | CLOUDS. Direction. Lower. From— | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches. | RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters. | WEATHER. | OBSERVER. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Red Bluff, California | 29.49 | 749.0 | 29.84 | 757.9 | 59 | 15.0 | 33 | NW | 12 | 5.4 | ..... | 0 | Haze | ..... | ..... | 0 | 0 | Clear | |
| Rochester, New York | 29.22 | 742.2 | 29.81 | 757.2 | 60 | 15.6 | 71 | S | 6 | 2.7 | ..... | 1c | 0 | Calm | ..... | 0.21 | 5.3 | Clear | |
| Roseburg, Oregon | 29.58 | 751.3 | 30.18 | 766.6 | 37 | 2.8 | 95 | Calm | 0 | 0 | ..... | Haze | 8s | ..... | Calm | 0 | 0 | Cloudy | |
| Sacramento, California | 29.76 | 755.9 | 29.84 | 757.9 | 57 | 13.9 | 69 | NW | 4 | 1.8 | ..... | 10k | 0 | S | ..... | 0 | 0 | Cloudy | |
| St. Louis, Missouri | 29.35 | 745.5 | 29.91 | 759.7 | 60 | 15.6 | 71 | SW | 6 | 2.7 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Marks, Florida | 29.89 | 759.2 | 29.90 | 759.4 | 60 | 15.6 | 70 | N | 7 | 3.1 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| St. Paul, Minnesota | 28.79 | 731.3 | 29.58 | 751.3 | 56 | 13.3 | 80 | W | 4 | 1.8 | ..... | ..... | 10n | ..... | W | 0.19 | 4.8 | Light rain | |
| Salt Lake City, Utah | 25.59 | 650.0 | 29.92 | 760.0 | 46 | 7.8 | 54 | N | 1 | 0 4 | ..... | 5k | 0 | W | ..... | 0 | 0 | Fair | |
| San Antonio, Texas | 29.26 | 743.2 | 29.83 | 757.7 | 65 | 18.3 | 84 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| San Diego, California | 29.77 | 756.1 | 29.84 | 757.9 | 59 | 15.0 | 94 | S | 5 | 2.2 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sandusky, Ohio | 29.19 | 741.4 | 29.85 | 758.2 | 55 | 12.8 | 93 | Calm | 0 | 0 | ..... | ..... | 10s | ..... | Calm | 0 | 0 | Cloudy | |
| Sandy Hook, New Jersey | 29.86 | 758.4 | 29.89 | 759.2 | 49 | 9.4 | 100 | E | 17 | 7.6 | ..... | ..... | Fog | ..... | E | 0 | 0 | Foggy | |
| San Francisco, California | 29.83 | 757.7 | 29.89 | 759.2 | 53 | 11.7 | 86 | SW | 8 | 3.6 | ..... | 0 | 5s | ..... | Calm | 0 | 0 | Fair | |
| Santa Fé, New Mexico | 23.20 | 589.3 | 29.74 | 755.4 | 45 | 7.2 | 31 | E | 2 | 0.9 | ..... | 5cs | 0 | Calm | ..... | 0 | 0 | Fair | |
| Savannah, Georgia | 29.77 | 756.1 | 29.86 | 758.4 | 65 | 18 3 | 58 | W | 6 | 2.7 | ..... | 8c | 0 | W | ..... | 0 | 0 | Fair | |
| Shreveport, Louisiana | 29.73 | 755.1 | 29.95 | 760.7 | 66 | 18.9 | 73 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Smithville, North Carolina | 29.83 | 757.7 | 29.87 | 758.7 | 63 | 17.2 | 83 | N | 4 | 1.8 | ..... | 8cs | 0 | SW | ..... | 0 | 0 | Cloudy | |
| Springfield, Massachusetts | 29.74 | 755.4 | 29.86 | 758.4 | 53 | 11.7 | 86 | N | 4 | 1.8 | ..... | ..... | 10n | ..... | N | 0.43 | 10.9 | Light rain | |
| Stockton, Texas | 26.83 | 681.5 | 29.83 | 757.7 | 60 | 15.6 | 44 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Thatcher's Island, Mass | 29.86 | 758.4 | 29.92 | 760.0 | 45 | 7.2 | 92 | NE | 8 | 3.6 | ..... | ..... | 10n | ..... | NE | 1.64 | 41.7 | Light rain | |
| Toledo, Ohio, | 29.16 | 740.7 | 29.81 | 757.2 | 57 | 13.9 | 87 | W | 2 | 0.9 | ..... | ..... | 10s | ..... | W | 0.04 | 1.0 | Cloudy | |
| Tucson, Arizona | ..... | ..... | ..... | ..... | 55 | 12.8 | 68 | Calm | ..... | ..... | 0 | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Tybee Island, Georgia | 29.84 | 757.9 | 29.86 | 758.4 | 63 | 17.2 | 78 | NW | 7 | 3.1 | ..... | 8cs | Haze | SW | Calm | 0 | 0 | Cloudy | |
| Umatilla, Oregon | 29.83 | 757.7 | ..... | ..... | 33 | 0.6 | 70 | SE | 4 | 1.8 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| Vicksburg, Mississippi | 29.74 | 755.4 | 30.00 | 762.0 | 62 | 16.7 | 72 | NE | 2 | 0.9 | ..... | Haze | 0 | ..... | ..... | 0 | 0 | Clear | |
| Virginia City, Montana | 24.26 | 616.2 | 29.74 | 755.4 | 26 | — 3.3 | 52 | SE | 1 | 0.4 | ..... | 0 | 0 | ..... | ..... | 0.05 | 1.3 | Clear | |
| Visalia, California | 29.49 | 749.0 | 29.86 | 758.4 | 54 | 12.2 | 74 | Calm | 0 | 0 | ..... | 0 | 2ks | ..... | S | 0 | 0 | Clear | |
| Washington, D. C. | 29.75 | 755.6 | 29.86 | 758.4 | 58 | 14.4 | 88 | NE | 5 | 2.2 | ..... | 0 | Fog | ..... | NE | 0 | 0 | Clear | |
| Wickenburg, Arizona | ..... | ..... | ..... | ..... | 51 | 10.6 | 59 | S | ..... | ..... | 1 | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Wilmington, N. Carolina | 29.76 | 755.9 | 29.84 | 757.9 | 62 | 16.7 | 83 | Calm | 0 | 0 | ..... | 5c | 0 | Calm | ..... | 0 | 0 | Fair | |
| Winnemucca, Nevada | 25.60 | 650.2 | 29.96 | 761.0 | 40 | 4.4 | 31 | N | 19 | 8.5 | ..... | ..... | 10s | ..... | SW | 0 | 0 | Cloudy | |
| Wood's Holl, Mass | 29.83 | 757.7 | 29.89 | 759.2 | 51 | 10.6 | 86 | NW | 5 | 2.2 | ..... | ..... | 10s | ..... | ..... | 1.08 | 27.4 | Cloudy | |
| Yankton, Dakota | 28.60 | 726.4 | 29.86 | 758.4 | 53 | 11.7 | 67 | W | 8 | 3.6 | ..... | 8cs | 0 | W | ..... | 0 | 0 | Cloudy | |
| Yuma, Arizona | 29.55 | 750.6 | 29.71 | 754.6 | 63 | 17.2 | 51 | Calm | 0 | 0 | ..... | 0 | 0 | ..... | ..... | 0 | 0 | Clear | |
| SUB-SERIES. | | | | | | | | | | | | | | | | | | | |
| St. Paul's Island, Alaska | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| York Factory, B. A | 30.20 | 767.1 | 30.26 | 768.6 | 28.0 | — 2.2 | 94 | NE | 3 | 1.3 | ..... | 3c | 0 | E | ..... | 0 | 0 | Fair | J. Fortescue, W. Wood. |
| Havana, Cuba, W. I | 29.78 | 756.4 | 29.80 | 756.9 | 77 | 25.0 | 82 | SW | 10.8 | 4.8 | ..... | 8k | 0 | NW | ..... | 0.65 | 16.5 | Cloudy | Chas. Hasselbrink. |
| Kingston, Jamaica, W. I | 30.09 | 764.3 | 30.10 | 764.5 | 80 | 26.7 | 87 | SE | 3 | 1.3 | ..... | 10c | 5s | Calm | ..... | 0 | 0 | ..... | James Gall. |
| Navassa, W. I | 29.85 | 758.2 | 29.93 | 760.2 | 83 | 28.3 | ..... | E | 15 | 6.7 | ..... | ..... | ..... | ..... | ..... | 0 | 0 | Cloudy | F. M. Everett. |
| Paramaribo, D. Guiana, S. A | 29.98 | 761.5 | 29.99 | 761.7 | 80 | 26.7 | 96 | E | ..... | ..... | 3 | ..... | 10n | ..... | ..... | 0.300 | 7.62 | Raining | C. J. Hering. |
| Batavia, Dutch Guiana, S. A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dr. H. Groot. |
| Medellin, Colombia, S. A | 25.24 | 641.1 | ..... | ..... | 67.2 | 19.6 | 88 | Calm | ..... | ..... | 0 | 1cs | 2ks | ..... | ..... | 0 | 0 | ..... | Thomas Herran |

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medillin and Paramaribo; for Batavia, the barometer reduced to freezing but not to sea-level. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,433 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Concho, 1,750 ft., or 533.4 m.; Deadwood, (?); Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft. or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,170.7 ft., or 4,318.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,645 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 m.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The velocity of the wind at Florence is estimated. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

## UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation

| STATIONS AND VESSELS. | Barometer. As read off. Inches. | Barometer. As read off. Millimeters. | Barometer. Attached Thermometer. Fahrenheit. | Barometer. Attached Thermometer. Centigrade. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0—10. | Clouds. Amount. Up'er 1—10. | Clouds. Amount. Low'r 0—10. | Clouds. Direction. Up'er From— | Clouds. Direction. Low'r From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Sea-swell. Character. | Sea-swell. Direction from— | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy Yard, Mare Island, Cal. | 29.85 | 758.2 | 58 | 14.4 | 53 | 11.7 | 93 | SW | 12 | 5.4 | ..... | ..... | 5 | ..... | SW | 0 | 0 | ..... | ..... | Clear ..... | |
| Navy Yard, Pensacola, Fla. | 30.05 | 763.3 | 64 | 17.8 | 63 | 17.2 | 94 | NW | 3 | 1.3 | ..... | ..... | 0 | ..... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Navy Yard, Portsmouth, N.H | 29.97 | 761.2 | 62 | 16.7 | 46 | 7.8 | 92 | NE | 14 | 6.3 | ..... | ..... | 10 | ..... | ..... | 0.4 | 10. | ..... | ..... | Rain & fog... | |
| Naval Hospital, Yokohama, Japan | 29.99* | 761.7* | 65.5 | 18.6 | 62 | 16.7 | 88 | SW | ..... | ..... | 2 | ..... | 8ks | ..... | SW | 0 | 0 | ..... | ..... | Gloomy..... | |
| Adams. Panama | 29.96 | 761.0 | 84 | 28.9 | 83 | 28.3 | 83 | SE | ..... | ..... | 2 | ..... | 5 | ..... | SE | Blank | Blank | Smooth | ..... | Fair ..... | |
| Alliance, Villefranche, France | 30.12‡ | 765.0‡ | ..... | ..... | 66 | 18.9 | 74 | SE | ..... | ..... | 0–1 | ..... | 10 | ..... | SE | ..... | ..... | None | ..... | Pleasant..... | |
| Ashuelot. Nagasaki, Japan | 30.01 | 762.2 | 69 | 20.6 | 69 | 20.6 | 65 | ENE | ..... | ..... | 1 | ..... | 10 | ..... | Calm | ..... | ..... | ..... | ..... | Overcast.. ... | |
| Canonicus, New Orleans, La | 29.96 | 761.0 | 49 | 9.4 | 65 | 18.3 | 78 | N | ..... | ..... | 1 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | Clear. ..... | |
| Colorado. New York, N. Y | 29.85‡ | 758.2‡ | ..... | ..... | 55 | 12 8 | 80 | ENE | ..... | ..... | 2 | ..... | 10 | ..... | ENE | 0 | 0 | ..... | ..... | Hazy..... | |
| Constellation, Havre, France | 29.81‡ | 757.2‡ | ..... | ..... | 58 | 14.4 | 88 | NW | .... | ..... | 2 | ..... | 5 | ..... | NW | ..... | ..... | ..... | ..... | Fair ..... | |
| Constitution, Havre, France | 29 68‡ | 753.9‡ | ..... | ..... | 63 | 17.2 | 78 | W | ..... | ..... | 2 | ..... | 5 | ..... | Calm | ..... | ..... | ..... | ..... | Pleasant..... | |
| Despatch, N. 40° 02 , E. 24° 50′ | 30.07‡ | 763 8‡ | ..... | ..... | 67 | 19.4 | 55 | Calm | ..... | ..... | 0 | ..... | 2 | ..... | Calm | ..... | ..... | ..... | ..... | Clear..... | |
| Franklin, Norfolk, Va | 29.92 | 760.0 | 66 | 18.9 | 64 | 17.8 | 68 | NNW | 6 | 2.7 | ..... | ..... | 8 | ..... | NW | 0 | 0 | ..... | ..... | Cloudy..... | |
| Gettysburg Valetta, Malta | 30.04‡ | 763.0‡ | ..... | ..... | 73 | 22.8 | 85 | WSW | ..... | ..... | 1 | ..... | 10 | ..... | Calm | 0 | 0 | ..... | ..... | Cloudy..... | |
| Guard, N. 10° 21′, W. 23° 28′ | 30.02 | 762.5 | 81 | 27.2 | 81 | 27.2 | 78 | NNE | ..... | ..... | 4 | ..... | 2 | ..... | NE | ..... | ..... | Mod'ate | NE | Clear ..... | |
| Hartford, Montevideo, Uraguay | 30.13 | 765.3 | 55 | 12.8 | 62 | 16.7 | 66 | SE | 15 | 6.7 | ..... | ..... | 5 | ..... | SE | 0.038 | 0.97 | Mod'te | SE | Fair ..... | |
| Marion, Smyrna, Turkey | 29.99 | 761.7 | 66 | 18.9 | 67 | 19.4 | 87 | N | ..... | ..... | 4 | ..... | 5 | ..... | NE | 0 | 0 | Smooth | ..... | Fair..... | |
| Michigan, Erie, Pa | 29.34 | 745.2 | 60 | 15.6 | 55 | 12.8 | 93 | SW | ..... | ..... | 1 | ..... | 10 | ..... | SW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Monocacy. Shanghai, China | 29.71‡ | 754.6‡ | ..... | ..... | 69 | 20.6 | 95 | S | ..... | ..... | 1–2 | ..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | Clear..... | |
| New Hampshire, Port Royal, S. C | 30.02† | 762.5† | ..... | ..... | 67 | 19.4 | 74 | N | 5 | 2.2 | ..... | ..... | 8 | ..... | E | ..... | ..... | ..... | ..... | Fair ..... | |
| Omaha, Portsmouth, N. H | 29.90* | 759.4* | 54 | 12.2 | 48 | 8.9 | 92 | NE | 5 | 2.2 | ..... | ..... | 10 | ..... | ..... | 1. | 25. | ..... | ..... | Rain & fog... | |
| Onward, Callao, Peru | 30.06† | 763.5† | ..... | ..... | 68 | 20.0 | 87 | SSE | ..... | ..... | 2 | ..... | 10 | ... | ..... | ..... | ..... | Long | W | Foggy ..... | |
| Ossipee, Hampton Roads, Va | 29.86‡ | 758.4‡ | ..... | ..... | 64 | 17.8 | 89 | NW | ..... | ..... | 1 | ..... | 8 | ..... | NW | ..... | ..... | ..... | ..... | Cloudy..... | |
| Palos, Near Shanghai, China | 29.78* | 756.4* | 64 | 17.8 | 60 | 15.6 | 100 | NE | ..... | ..... | 1 | ..... | 8 | ..... | N&E | ..... | ..... | Smooth | N | Foggy ..... | |
| Pensacola, San Francisco, Cal | 29.98 | 761.5 | 57 | 13.9 | 52 | 11.1 | 93 | WSW | 10 | 4.5 | ..... | ..... | 2 | ..... | ..... | 0 | 0 | Smooth | ..... | Clear..... | |
| Plymouth. N. 22°, W. 69° 19′ | 30.15‡ | 765.8‡ | ..... | ..... | 80 | 26.7 | 87 | ESE | ..... | ..... | 4–5 | ..... | 2 | ..... | ESE | ..... | ..... | Smooth | ..... | Clear..... | |
| Powhatan, Norfolk, Va | 30.04† | 763.0† | ..... | ..... | 61 | 16.1 | 77 | E | 2.4 | 1.1 | ..... | ..... | 2 | .... | ..... | 0 | 0 | ..... | ..... | Clear..... | |
| Ranger. Hong-Kong, China | 30.00* | 762.0* | ..... | ..... | 80 | 26.7 | 91 | WSW | ..... | ..... | 1–2 | ..... | 6 | .. ..... | Calm | ..... | ..... | Smooth | NE | D. clouds..... | |
| Rio Bravo, Brownsville, Texas | 29.92 | 760.0 | 65 | 18.3 | 67 | 19.4 | 95 | WSW | ..... | ..... | 1 | ..... | 0 | ..... | . ..... | ..... | ..... | ..... | ..... | Misty..... | |
| Santee, Annapolis, Md | 29.86‡ | 758.4‡ | ..... | ..... | 54 | 12.2 | 100 | NE | ..... | ..... | 1 | ..... | 10 | ..... | NE | 0 | 0 | ..... | ..... | Dense fog.... | |
| Saratoga, Washington, D. C | 29.78 | 756.4 | 63 | 17.2 | 62 | 16.7 | 88 | NE | ..... | ..... | 1 | ..... | 5 | ..... | SW | 0 | 0 | ..... | ..... | Cloudy..... | |
| St. Louis, League Island, Pa | 29.85 | 758.2 | 64 | 17.8 | 56 | 13.3 | 94 | NNE | 7 | 3.1 | ..... | ..... | 10 | ..... | ..... | 0.08 | 2.0 | ..... | ..... | Misty..... | |
| Supply, Havre, France | 29.81 | 757.2 | 61 | 16.1 | 60 | 15.6 | 82 | NW | ..... | ..... | 2 | ..... | 8 | ..... | NW | ..... | ..... | ..... | ..... | Fair ..... | |
| Swatara, Key West, Fla | 29.84‡ | 757.9‡ | ..... | ..... | 75 | 23.9 | 90 | N | ..... | ..... | 2 | ..... | 2 | ..... | N&W | ..... | ..... | ..... | ..... | Clear.. ..... | |
| Tennessee, N. 32° 24′, E. 27° 38′ | 29.97* | 761.2* | 68 | 20.0 | 67 | 19.4 | 55 | NW | 5 | 2.2 | ..... | ..... | 2 | .... ... | NW | ..... | ..... | Light | NW | D. clouds..... | |
| Trenton, Villefranche, France | 29.92‡ | 760.0‡ | ..... | ..... | 68 | 20.0 | 74 | SW | ..... | ..... | 0–1 | ..... | 5 | ..... | N | 0.5 | 13. | ..... | ..... | Fair..... | |
| Tuscarora, N. 16° 21′, W. 98° 39′ | 29.70 | 754.4 | 76 | 24.4 | 76 | 24.4 | 91 | N | ..... | ..... | 0–1 | ..... | 2 | ..... | Calm | 0 | 0 | Smooth | ..... | Hazy &misty | |
| Vandalia, N. 36° 04′ E. 17° 47′ | 30.19‡ | 766.8‡ | ..... | ..... | 67 | 19.4 | 79 | N | ..... | ..... | 0–1 | ..... | 8 | ..... | ..... | ..... | ..... | Smooth | ..... | Fair..... | |
| Wabash, Boston, Mass | 29.92‡ | 760.0‡ | ..... | ..... | 46 | 7.8 | 100 | NE | 7 | 3.1 | ..... | ..... | 10 | ..... | ..... | 1.34 | 34.0 | ..... | ..... | Light rain.. | |

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable; the position given is that at noon, local time, instead of that at 7:35 a. m., Washington time.

## UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Low'r | Upper. | Lower. | Character. | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second. | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **PACIFIC MAIL S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Alaska | | | | | | | | | | | | | | | | | | | Capt. Berry. |
| S. S. China | | | | | | | | | | | | | | | | | | | Capt. Cobb. |
| S. S. City of New York | | | | | | | | | | | | | | | | | | | Capt. Seabury. |
| S. S. City of Panama | | | | | | | | | | | | | | | | | | | |
| S. S. City of Peking. Yokohama, Japan | | | 30.04 | 763.0 | 61 | 16.1 | 100 | S | 5.0 | 2.2 | | 10 | | S | | Smooth | Calm | Overcast | Lt. Z. L. Tanner, U.S.N. |
| S. S. City of Sydney | | | | | | | | | | | | | | | | | | | Capt. Dearborn. |
| S. S. City of Tokio | | | | | | | | | | | | | | | | | | | Capt. Maury. |
| S. S. Colima, N. 18° 54', W. 90° 49' | | | 29.90† | 759.4† | 77 | 25.0 | 100 | N | | | 2 | | 0 | | | Small | SW | Misty | Capt. Searle. |
| S. S. CostaRica | | | | | | | | | | | | | | | | | | | Capt. Whitebury. |
| S. S. Dakota | | | | | | | | | | | | | | | | | | | Capt. Morse. |
| S. S. Georgia | | | | | | | | | | | | | | | | | | | Capt. Cavarly. |
| S. S. Grenada | | | | | | | | | | | | | | | | | | | Capt. Connolly. |
| S. S. Wilmington | | | | | | | | | | | | | | | | | | | Capt. Austin. |

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. †Aneroid.

## WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Adriatic | | | | | | | | | | | | | | | | | | | Capt. H. H. Perry. |
| S. S. Baltic | | | | | | | | | | | | | | | | | | | Capt. J. W. Jenning. |
| S. S. Britannic, N. 41° 36', W. 54° 27' | | | 30.10† | 764.5† | 60 | 15.6 | ?? | E | | | 2 | | 5c | | E | Mod'ate | E | Fair | Capt. W. H. Thompson. |
| S. S. Celtic | | | | | | | | | | | | | | | | | | | Capt. B. Gleadell. |
| S. S. Germanic, N. 46° 12', W. 42° 04' | | | 30.02† | 762.5† | 51 | 10.6 | ?? | N | | | 5 | | 10 | | N | Light | N | Drizzling | Capt. C. W. Kennedy. |
| S. S. Republic | | | | | | | | | | | | | | | | | | | Capt. H. Perry. |

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. †Aneroid.

## OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice President; D. D. Stubbs, Secretary.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Belgic, N. 35° 30', W. 168° 01' | | | 30.33* | 770.4* | | | | SSW | | | 5 | | ks | | | Mod'ate | SW | D. clouds | Capt. John Metcalf. |
| S. S. Gaelic, N. 44° 00', W. 163° 40' | | | 29.57† | 751.1† | 48 | 8.9 | 70 | SW | | | 6 | | k | | W | High sea. | W | D. clouds | Capt. W. H. Kidley |
| S. S. Oceanic | | | | | | | | | | | | | | | | | | | Capt. H. Parsell. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

## NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Baltimore | | | | | | | | | | | | | | | | | | | Capt. H. Andrressen. |
| S. S. Berlin | | | | | | | | | | | | | | | | | | | Capt. C. Pohle. |
| S. S. Braunschweig, N. 37° 46', W. 57° 49' | | | 30.08 | 764.0 | 72.0 | 22.2 | 85 | WSW | | | 3 | | 9 | | SW | Little rough | WSW | Fine | Capt. Undütsch. |
| S. S. Nürnberg | | | | | | | | | | | | | | | | | | | Capt. A. Jaeger. |
| S. S. Ohio | | | | | | | | | | | | | | | | | | | Capt. G. Meyer. |

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds.

## UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

| NAMES OF VESSELS. | True course toward— | Hourly rate in knots. | Barometer reduced to sea-level. | | Temperature of the Air. | | Relative Humidity. | Wind. | | | | Clouds. | | | | Sea-swell. | | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direction. | Velocity. | | Force. | Amount. | | Direction. | | | | | |
| | | | | | | | | | | | | Up'er | Lo'wr | Upper. | Lower. | Character | Direction from— | | |
| | | | Inches. | Millimeters. | Fahrenheit. | Centigrade. | Per cent. | From— | Miles per hour. | Meters per second | 0—10. | 0—10. | 0—10. | From— | From— | | | | |
| **AMERICAN S. S. CO. MARINE SERIES.** | | | | | | | | | | | | | | | | | | | |
| Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents. | | | | | | | | | | | | | | | | | | | |
| S. S. Illinois | | | | | | | | | | | | | | | | | | | Captain Shackelford. |
| S. S. Indiana, Philadelphia, Pa | | | 29.92* | 760.0* | 56 | 13.3 | ?? | NE | | | 5 | | 10 | | S | | | Cloudy | Captain Sargent. |
| S. S. Ohio, Liverpool | | | 29.58 | 751.3 | 55 | 12.8 | 87 | SE | | | 3 | | 10 | | SE | | | Foggy | Captain Morrison. |
| S. S. Pennsylvania, N. 44° 34′, W. 49° 49′ | | | 30.18† | 766.6† | 37 | 2.8 | 100 | NE | | | 4 | | 9 | | NE | Light | NE | Cloudy | Captain Harris. |

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for elevation; instrumental error not known. †Corrected for temperature and elevation, instrumental error not known.

**RED STAR LINE MARINE SERIES.**

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Nederland | | | | | | | | | | | | | | | | | | | Capt. Randle. |
| S. S. Switzerland | | | | | | | | | | | | | | | | | | | Capt. Jackson. |
| S. S. Vaderland | | | | | | | | | | | | | | | | | | | Capt. Nichols. |

**ALLAN LINE MARINE SERIES.**

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| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. S. Austrian | | | | | | | | | | | | | | | | | | | |
| S. S. Hibernian | | | | | | | | | | | | | | | | | | | |
| S. S. Scandinavian, N. 43° 39′, W. 52° 24′ | | | 30.21 | 767.3 | 46 | 7.8 | | NE | | | 3 | | 10s | | NE | Swell | E | Rain and fog | Capt. W. Richardson. |

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

**MARINE SERIES. (Miscellaneous.)**

Furnished by the coöperation of the Observer named.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schooner Addie Fuller, St. John, N. B. | | | 29.95 | 760.7 | 43 | 6.1 | 100 | E | | | | | 10n | | NE | | | Rainy | Capt. James Jorgensen. |
| Schooner Florence, N. 66° 13′, W. 67° 19′ | | | 29.69 | 754.1 | 10 | —12.2 | 96 | E | 11.8 | 5.3 | | | 10s | | | | | Snowing | O. T. Sherman. |

Note.—The originals for the schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters their combinations in the proper column.

Albert J. Myer

*Brig. Gen. (Bvt. Assg$^{d}$.) Chief Signal Officer. U. S. A.*

## GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

| STATIONS. | Barometer. Corrected for instrum'tal error and temperature. Inches. | Barometer. Corrected for instrum'tal error and temperature. Millimeters. | Barometer. Reduced to sea-level. Inches. | Barometer. Reduced to sea-level. Millimeters. | Temperature of the Air. Fahrenheit. | Temperature of the Air. Centigrade. | Relative Humidity. Per cent. | Wind. Direction. From— | Wind. Velocity. Miles per hour. | Wind. Velocity. Meters per second. | Wind. Force. 0-10 | Clouds. Amount. Up'er 0-10 | Clouds. Amount. Low'r 0-10 | Clouds. Direction. Upper From— | Clouds. Direction. Lower. From— | Rain-fall or melted snow in the past 24 hours. Inches. | Rain-fall or melted snow in the past 24 hours. Millimeters. | Weather. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bamberg | | | | | | | | | | | | | | | | | | | Prof. Dr. Hoh. |
| Berlin | 29.89 | 759.2 | 30.06 | 763.5 | 47.1 | 8.4 | 71 | NW | | | 2 | | 10 | | | 0.080 | 2.03 | Raining | Prof. Arndt. |
| Breslau | 29.55 | 750.5 | 30.08 | 764.0 | 38.5 | 3.6 | 94 | WNW | | | 2 | | 10 | | | 0 | 0 | Foggy | Royal University Obs'y |
| Carlsruhe | 29.81 | 757.2 | 30.25 | 768.3 | 49.3 | 9.6 | 64 | SW | | | 1 | | 10 | | | 0 | 0 | | Albert Senz. |
| Cassel | 29.65 | 753.2 | 30.26 | 768.7 | 49.3 | 9.6 | 78 | SSW | | | 2 | | 10 | W | | 0.028 | 0.72 | | Dr. H. Möhl. |
| Crefeld | 30.03 | 762.7 | 30.19 | 766.9 | 51.4 | 10.8 | 72 | W | | | 3 | | 9 | | | 0 | 0 | | Director Lose. |
| Emden | 30.11 | 764.7 | 30.14 | 765.6 | 48.4 | 9.1 | 80 | WSW | | | 3 | | 10 | | | 0 | 0 | | Prof. Prestel. |
| Frankfort on the Main | 29.93 | 760.2 | 30.30 | 769.7 | 49.1 | 9.5 | 68 | SW | | | 1 | | 10 | | | Inap. | Inap. | | Physical Society. |
| Friedrichshafen | 28.82 | 732.0 | 30.30 | 769.5 | 44.6 | 7.0 | 72 | ESE | | | 2 | | 10 | E | | 0 | 0 | | M. Wilhelm. |
| Hamburg | 29.96 | 761.0 | 30.03 | 762.8 | 44.8 | 7.1 | 90 | WSW | | | 4 | | 10 | | | Inap. | Inap. | | Captain F. Hegemann. |
| Kiel | 29.91 | 759.7 | 29.93 | 760.1 | 46.8 | 8.2 | 85 | SW | | | 4 | | 10 | | | 0 | 0 | | Prof. G. Karsten. |
| Königsberg, (Prussia) | 29.74 | 755.4 | 29.82 | 757.4 | 36.7 | 2.6 | 86 | SW | | | | | | | | 0.001 | 0.02 | Cloudy | Prof. E. Luther. |
| Köslin | | | 29.91 | 759.8 | 44.8 | 7.1 | | W | | | 4 | | 4 | | | 0 | 0 | | H. Müller. |
| Leipsic, Observatory | 29.74 | 755.5 | 30.78 | 766.5 | 43.9 | 6.6 | 78 | W | | | 3 | | 10 | WNW | | 0.098 | 2.5 | | Prof. Bruhns. |
| Memel, Naval School | 29.73 | 755.1 | 29.78 | 756.3 | 35.6 | 2.0 | 91 | SSW | | | 5 | | 10 | | | | | Light fog | Reinbrech von Skalweit. |
| Neufahrwasser | 29.84 | 757.8 | 29.85 | 758.2 | 43.7 | 6.5 | 80 | W | | | 4 | | 7 | WNW | | 0 | 0 | | A. Lothes. |
| Posen | 29.78 | 756.4 | 30.06 | 764.0 | 41.4 | 5.2 | 88 | NW | | | 5 | | 10 | | | 0 | 0 | Covered | Dr. Magener. |
| Strassburg Obs., (in Alsace | 29.72 | 755.0 | 30.29 | 769.3 | 50.0 | 10.0 | 47 | W | | | 1 | | 3 | W | | 0.110 | 2.79 | | Dr. Schur. |
| Stuttgart | 29.28 | 743.8 | 30.41 | 772.3 | 46.4 | 8.0 | 65 | N | | | 1 | | 10 | | | Blank | Blank | | Prof. Schoder. |
| Treves, (Trier) | 29.63 | 752.6 | 30.15 | 765.9 | 48.9 | 9.4 | 69 | W | | | 3 | | 10 | | | 0 | 0 | Foggy | Prof. Flesch. |
| Weissenburg, (Bavaria) | 28.71 | 729.2 | 30.27 | 768.8 | 40.5 | 4.7 | 68 | NW | 1 | 0.5 | | | 10 | | NW | 0.150 | 3.8 | Covered | Dr. Von Bebber. |
| Wustrow, Naval School | 29.98 | 761.5 | 30.02 | 762.5 | 42.6 | 5.9 | 79 | W | | | 2 | | 10 | | | 0 | 0 | Covered | E. F. Schütz. |
| German Naval Series. | | | | | | | | | | | | | | | | | | | |
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NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Königsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4. Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines, Königsberg, Posen and Wustrow in cubic zolls. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

## GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens | 29.45 | 748.0 | 29.85 | 758.2 | 49.5 | 9.7 | | NW | | | 2.0 | | | | | | | ⅛ clear | Dr. J. F. J. Schmidt. |
| | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

## INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kurrachee | 30.00 | 762.1 | 30.05 | 763.4 | 78.5 | 25.8 | 76 | SW | 25.0? | 11.2? | | | 1 | | | 0 | 0 | D. clouds | |
| Deesa | 29.55 | 750.6 | 30.02 | 762.5 | 92.2 | 33.4 | 17 | W | | | | | 2 | W | | 0 | 0 | D. clouds | |
| Bombay | 29.93 | 760.2 | 29.97 | 761.2 | 82.5 | 28.1 | 65 | NW | 19.0 | 8.5 | | | 1 | SSW | | 0 | 0 | D. clouds | |
| Poona | 27.92 | 709.1 | 29.88 | 759.0 | 90.7 | 32.6 | 32 | N | | | | | 2 | | W | 0 | 0 | D. clouds | |
| Lahore | 29.30 | 744.3 | 30.05 | 763.3 | 81.0 | 27.2 | 42 | NE | 3.1 | 1.4 | | | 6 | | | 0 | 0 | Cloudy | |
| Belgaum | 27.43 | 696.7 | 29.94 | 760.4 | 84.0 | 28.9 | 37 | W | 7.0 | 3.1 | | | 5 | | SW | 0 | 0 | D. clouds | |
| Bangalore | | | | | | | | | | | | | | | | | | | |
| Roorkee | 29.11 | 739.4 | 30.02 | 762.4 | 79.8 | 26.6 | 41 | Calm | 1.2 | 0.5 | | | | | | 0 | 0 | | |
| Agra | 29.44 | 747.7 | 30.00 | 761.9 | 90.7 | 32.6 | 23 | N | | | | | 2 | | | 0 | 0 | | |
| Trichinopoly | | | | | | | | | | | | | | | | | | | |
| Nagpur | 28.93 | 734.8 | 29.97 | 761.2 | 84.6 | 29.2 | 50 | N | 5.3 | 2.4 | | | 8 | | E | 0.57 | 14.5 | Thunder-storm | |
| Madras | | | | | | | | | | | | | | | | | | | |
| Lucknow | 29.60 | 751.9 | 29.98 | 761.4 | 83.3 | 28.5 | 46 | Calm | 2.2 | 1.0 | | | 1 | | | 0 | 0 | D. clouds | |
| Allahabad | 29.66 | 753.5 | 29.98 | 761.4 | 81.3 | 27.4 | 40 | Calm | 0.2 | 0.1 | | | 5 | | | 0 | 0 | D. clouds | |
| Patna | 29.80 | 756.9 | 29.98 | 761.5 | 84.6 | 29.2 | 24 | W | 1.5 | 0.7 | | | 10 | W | W | 0 | 0 | Overcast | |
| Hazaribagh | 28.07 | 712.9 | 30.13 | 765.3 | 69.6 | 20.9 | 47 | WNW | 5.6 | 2.5 | | | 10 | | | 0.01 | 0.3 | Thunder-storm | |
| Cuttack | 29.92 | 760.0 | 30.01 | 762.1 | 85.0 | 29.4 | 51 | E | 3.1 | 1.4 | | | 4 | | | 0 | 0 | D clouds | |
| Calcutta (Alipore) | 29.97 | 761.2 | 29.99 | 761.8 | 80.7 | 27.1 | 72 | NNW | 3.0 | 1.3 | | | 9 | | W | 0 | 0 | Overcast | |
| Goalpara | 29.62 | 752.5 | 30.02 | 762.5 | 76.8 | 24.9 | 52 | NE | 3.2 | 1.4 | | | 10 | | | 0 | 0 | Overcast | |
| Chittagong | 29.93 | 760.3 | 30.02 | 762.6 | 80.4 | 26.9 | 85 | WSW | 4.4 | 2.0 | | | 10 | | | 0 | 0 | Overcast | |
| Sibsagar | 29.73 | 755.0 | 30.07 | 763.8 | 72.0 | 22.2 | 76 | Calm | 3.9 | 1.7 | | | 7 | | | 0 | 0 | D. clouds | |
| Rangoon | | | | | | | | | | | | | | | | | | | |
| Jubbulpore | 28.62 | 727.0 | 29.99 | 761.6 | 82.5 | 28.1 | 52 | NW | 5.9 | 2.6 | | | | | | 0 | 0 | Blue sky | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.